DRAFT
ENVIRONMENTAL IMPACT REPORT
FOR THE RELOOC STRATEGIC PLAN-OLINDA ALPHA LANDFILL IMPLEMENTATION

VOLUME I

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GLOSSARY

GLOSSARY OF ACRONYMS

A	drainage area
AB	Assembly Bill
ACOE	United States Army Corps of Engineers
AADT	annual average daily traffic
AAQS	Ambient Air Quality Standards
ADC, ADCs	Alternative daily cover, covers
ADT	Average daily traffic
AES	Advanced Engineering Software
AMSL	Above mean sea level
App.	Appeals
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
AST	aboveground storage tank
BAS	Bryan A. Stirrat and Associates
Basin	South Coast Air Basin
BMP, BMPs	Best Management Practice, Practices
BOS	Board of Supervisors
C	Centigrade
C	runoff coefficient
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAGN	coastal California gnatcatcher
Cal.	California
Cal-OSHA	California Occupational Health and Safety Administration
Caltrans	California Department of Transportation
CAP	Corrective Action Program
CAS	Corrective Action System
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCSP	Carbon Canyon Specific Plan
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDWR	California Department of Water Resources
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFS	cubic feet per second
CGS	California Geological Survey
CIP	Community Involvement Program
CIWMB	California Integrated Waste Management Board
CMP	Congestion Management Plan
cm/sec	centimeters per second

CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CSC	California Species of Concern
COC	Constituent of Concern
CSE	County-wide Siting Element
CSP	corrugated steel pipe
CSS	coastal sage scrub
CVC	California Vehicle Code
dB	decibel, decibels
dBA	A-weighed decibel
Dist.	District
DMP	Detection Monitoring Program
EC	electrical conductivity
EIR	Environmental Impact Report
EMFAC2002	On-Road Motor Vehicle Emissions Factor Model
F	Fahrenheit
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FRB	Frank R. Bowerman Landfill
FSR	Feasibility Study Report
FTA	Federal Transit Administration
ft-lb/blow	foot-pound per pile driver impact **[The amount of force required to accelerate a one pound mass, one foot per impact of a pile driver]**
Fwy	Freeway
FY	fiscal Year
FY03	fiscal year 2003
GDP	General Development Plan
GEP	Groundwater Extraction Monitoring Program
GIS	geographic information system
GLA	GeoLogic Associates
GP, GPs	General Plan, Plans
gpm	gallons per minute
GPS	Global Positioning System
GTP	Groundwater Treatment Monitoring Program
HC	hydrocarbon
HCM	Highway Capacity Manual
HCP	Habitat Conservation Plan
HDPE	high density polyethylene
HHW	household hazardous waste

HHWE, HHWEs	Household Hazardous Waste Element, Elements
HI	Hazard Index
HOV	high occupancy vehicle
hr	hour
HVAC	heating, ventilation and air conditioning
HWY	Highway
Hz	hertz
I	rainfall intensity
I-5	Santa Ana Freeway, Interstate 5
I-405	San Diego Freeway, Interstate 405
ICU	Intersection Capacity Utilitzation
IS	Initial Study
IUDA	Industry-Urban Development Agency
IWMA	Integrated Waste Management Act
IWMD	Integrated Waste Management Department
IWMP	Integrated Waste Management Plan
JTD	Joint Technical Document
L_{01}	noise level exceeded one-percent of the time during a stated period
L_{10}	noise level exceeded 10 percent of the time during a stated period
L_{50}	noise level exceeded 50 percent of the time during a stated period
L_{90}	noise level exceeded 90 percent of the time during a stated period
LAFCO	Local Agency Formation Commission
L_{dn}	day-night average sound or noise level
LEA	Local Enforcement Agency
L_{eq}	equivalent continuous sound or noise level
LFG	Landfill gas
L_{max}	maximum noise level
LMP	Landscape Master Plan
LOS	Level of Service
LCRS	leachate collection and recovery system
LUE, LUEs	Land Use Element, Elements
L_v	vibration velocity level in decibels
MCE	Maximum Credible Earthquake
MCL	Maximum Contaminant Levels
MCY	million cubic yards
MDL	Method Detection Level
MEI	Maximum Exposed Individual
MICR	Maximum Individual Cancer Risk
MLD	Most Likely Descendant
MOU	Memorandum of Understanding
MPAH	Master Plan of Arterial Highways
MPO	Metropolitan Planning Organization

MPR	Master Plan of Roadways
MRF, MRFs	materials recovery/recycling facility, facilities
MMRP	Mitigation Monitoring and Reporting Program
MSDD	Master Storm Drain Design
MSW	municipal solid waste
MT	million tons
M&RP	Mitigation and Reporting Program
µg/L	micrograms per liter
$\mu g/m^3$	microgram per cubic meter
mg/m^3	milligram per cubic meter
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NAAQS	National Ambient Air Quality Standards
NB	northbound
NCCP	Natural Community Conservation Plan
NDF, NDFs	Non-disposal facility
NDFE	Non-disposal Facility Element
NDIR	Nondispersive Infrared Photometry
NO	nitric oxide
NO_2	nitrogen oxide
NOCLATS	North Orange County Landfill and Alternative Technologies Study
NOP	Notice of Preparation
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
O_3	ozone
OAL	Olinda Alpha Landfill
OC	Orange County
OCBS	Orange County Board of Supervisors
OCEMA	Orange County Environmental Management Agency
OCFA	Orange County Fire Authority
OCHCA	Orange County Health Care Agency
OCHCS	Orange County Habitual Classification System
OCPD	Orange County Planning Department
OCTA	Orange County Transportation Authority
OEHHA	Office of Environmental Health Hazard Assessment
OVA	Organic Vapor Analyzer
Pb	lead
PC	Planned Community
PCE	Passenger Car Equivalent
pgm	processed green material
pH	potential of hydrogen
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter

PM_{10}	particulate matter less than or equal to 10 microns in diameter
ppb	parts per billion
ppd	pounds per day
ppm	parts per million
PPV	peak particle velocity
PQL	Practical Quantitation Level
PRC	Public Resources Code
PRIMP	Paleontological Resources Impact Mitigation Program
Q	direct peak runoff
RDMD	County of Orange Resources and Development Management Department
RELOOC	Regional Landfill Options for Orange County
RFI	Report of Facility Information
rms	root-mean-square
ROB	Roll-off box
ROC	reactive organic compounds
ROG	reactive organic gases
RWQCB-SA	Regional Water Quality Control Board-Santa Ana
SB	southbound
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	United States Soil Conservation Service
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOI	Sphere of Influence
So_x	sulfuroxides
SR, SRs	State Route, Routes
SR 55	State Route 55
SR 57	State Route 57
SR 91	State Route 91
SRRE, SRREs	Source Reduction and Recycling Element, Elements
SWFP, SWFPs	Solid Waste Facilities Permit, Permits
SWPPP	Storm Water Pollution Prevention Plan
SWWG	Solid Waste Working Group
TAC	toxic air contaminants
TC	time of concentration
T-BACT	Toxics – Best Available Control Technology
TDS	total dissolved solids
TOC	total organic compounds
TPD	tons per day
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

USGS	United States Geological Survey
UST	underground storage tank
VdB	velocity in decibels
VOC, VOCs	volatile organic compounds
vphgl	vehicles per hour of green time per lane
WCCA	Wildlife Corridor Conservation Authority
WCS	Waste Characterization Study
WDA, WDAs	Waste Disposal Agreement, Agreements
WDR	Waste Discharge Requirements
WMU, WMUs	Waste Management Unit, Units
ZO, ZOs	Zoning Ordinance, Ordinances
4 (LS)	Public Facilities Landfill Site

SECTION 1.0
EXECUTIVE SUMMARY

SECTION 1.0
EXECUTIVE SUMMARY

1.1 DESCRIPTION OF THE PROPOSED PROJECT

1.1.1 PURPOSE OF THE PROPOSED PROJECT

The Regional Landfill Options for Orange County (RELOOC) effort is a long range strategic planning program initiated by the County of Orange Integrated Waste Management Department (IWMD). The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long term solid waste disposal options for the County. As part of that endeavor, the County is considering a number of short term improvements to existing municipal solid waste landfills operated by IWMD. The proposed project includes the vertical and horizontal expansion of Olinda Alpha Landfill to help meet the County's near term solid waste disposal needs.

This Environmental Impact Report (EIR) analyzes the potential environmental impacts associated with the continued operation of the Olinda Alpha Landfill from 2013 to the estimated horizon year 2021. The potential environmental impacts associated with the current Olinda Alpha Landfill operations through 2013 were analyzed in the Final EIR for the North Orange County Landfill and Alternatives Technology Study (NOCLATS), which was certified by the Board of Supervisors (BOS) in 1992. Environmental impacts associated with the County's solid waste options if Olinda Alpha Landfill is not expanded are discussed under the No Project Alternative in Section 6.0 of this EIR.

1.1.2 PROJECT LOCATION

The project site is located within the existing Olinda Alpha Landfill property located at 1942 North Valencia Avenue in unincorporated Orange County, near the City of Brea. Olinda Alpha Landfill is generally bounded by Lambert Road/Carbon Canyon to the south and Valencia Avenue to the southwest. To the north and northwest of the property is County of Los Angeles open space and to the northeast, east and southeast are the Firestone Boy Scout Reservation and Chino Hills State Park. The Olinda Ranch housing development is located south of the site and the future Tonner Hills housing development is proposed to be located to the southwest. The Brea Green Recycling Facility is located immediately south of the landfill entrance.

1.1.3 CURRENT SITE STATUS

1.1.3.1 Operations

Olinda Alpha Landfill opened in 1960. The landfill serves northern Orange County and also receives municipal solid waste (MSW) imported from Los Angeles, San Bernardino and Riverside Counties. Access to the landfill is via Valencia Avenue. The landfill is open Monday through Saturday from 6:00 A.M. to 7:00 A.M. for transfer trucks only and 7:00 A.M. to 4:00 P.M. for all commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is

limited to Orange County residents. Only MSW and exempt commodity such as soil, asphalt and processed green material is accepted at the landfill, although limited special wastes (i.e., tires) are also accepted. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted at this landfill. Importation of MSW from Los Angeles, San Bernardino and Riverside Counties will cease in 2015 unless Olinda Alpha Landfill closes in 2013 at which time importation will cease. At about 2015, Olinda Alpha Landfill will need to begin importing cover material if the landfill closure date is extended. It is anticipated that the truck trip reduction (approximately 100 truck trips per day) that occurs with the cessation of MSW importation at Olinda Alpha Landfill will offset the increase in truck trips required for the transport of cover material (see further discussion in Section 4.4.1).

Olinda Alpha Landfill is a deep canyon, cut and cover facility where the majority of MSW is brought to the site by commercial haulers. To determine the tipping fees, trucks are weighed by scales before entering the facility and are then directed to a designated area of the landfill for waste disposal. IWMD heavy equipment operators use compactors, bulldozers and large earthmovers to push and compact waste for ultimate burial and daily covering of soil or an approved alternative. No waste is left uncovered at the end of the working day.

Olinda Alpha Landfill complies with all federal, state and local requirements for landfills. Site staff conducts daily inspections to ensure that the site is in compliance with all the permit conditions imposed by regulatory agencies having jurisdiction over landfills. These permitted conditions include specific procedures for controlling fires, leachate, landfill gas (LFG), dust, vectors, birds, noise, odor, drainage, erosion and traffic.

1.1.3.2 Regulatory Controls

Although the County of Orange is the owner and operator of Olinda Alpha Landfill, landfill operations in California are highly regulated and monitored by federal, state and local agencies. Olinda Alpha Landfill must comply with applicable California Code of Regulations (CCR) (primarily Title 27) and the Code of Federal Regulations, Title 40 (CFR), Parts 257 and 258 (Subtitle D) and Part 60, Subpart WWW (NSPS-New Source Performance Standards). Olinda Alpha Landfill is a Class III landfill permitted for the disposal of non-hazardous MSW. State law requires that landfills operate under the various regulatory requirements of the California Integrated Waste Management Board (CIWMB) that exercises its authority through the approval of Solid Waste Facilities Permits (SWFPs) issued by the Local Enforcement Agency (LEA). The LEA for Olinda Alpha Landfill is the County of Orange Health Care Agency, Environmental Health.

Additionally, the Regional Water Quality Control Board-Santa Ana Region (RWQCB-SA) regulates landfill operations and designs to ensure protection of surface water and groundwater. The RWQCB-SA exercises its authority through issuance of Waste Discharge Requirements (WDR). The South Coast Air Quality Management District (SCAQMD) regulates landfill operations related to LFG emissions, subsurface gas migration and fugitive dust control for Orange County landfills. Environmental monitoring of air, LFG and groundwater is conducted at all landfills to detect LFG migration or groundwater contamination. An existing LFG

extraction system and flare station operates at Olinda Alpha Landfill for LFG control. In addition, utilization of LFG for energy production currently is being conducted at the Olinda Alpha Landfill. A groundwater extraction program including extraction wells and treatment is currently ongoing at Olinda Alpha Landfill. There is also a leachate collection and recovery system (LCRS) at the landfill.

Although the CIWMB has primary oversight and regulatory responsibilities for Olinda Alpha Landfill and has designated the County of Orange Environmental Health Care Agency, Environmental Health as its LEA, Olinda Alpha Landfill is also regulated through other laws enforced by agencies at the federal, state and local regulatory levels. In addition to the RWQCB-SA and SCAQMD, these agencies include the United States Environmental Protection Agency (USEPA) for New Source Performance Standards (NSPS), United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), Orange County Fire Authority (OCFA) and the County of Orange Resources and Development Management Department (RDMD). Continued adherence to all applicable laws and regulations would be required as part of project approval and operating conditions for the proposed expansion at Olinda Alpha Landfill.

1.1.3.3 Capacity of Olinda Alpha Landfill

A variety of factors are utilized to determine landfill system capacity including total air space, refuse volume, final cover volume, refuse-to-soil ratio and compaction densities. Based on these factors, IWMD's records show that the current permitted remaining refuse capacity for Olinda Alpha Landfill is 23.9 million tons (or 44.7 million cubic yards of air space capacity) as of June 30, 2003.

The permitted daily tonnage limit for Olinda Alpha Landfill is 8,000 tons per day (TPD) of MSW. However, a Memorandum of Understanding (MOU) between the County and the City of Brea limits daily waste disposal to an annual average of 7,000 TPD. The landfill currently (as of April, 2004) receives a daily average of approximately 6,800 TPD of solid waste and an average of approximately 3,000 to 4,000 TPD of exempt commodities which includes dirt, asphalt and green waste.

A number of landfill agreements and permits currently are in place with Orange County cities, waste haulers and regulatory agencies responsible for oversight of the County's landfills. In addition to those regulatory agency permits and city agreements described above, the County also has ten-year Waste Disposal Agreements (WDA) with contract cities that are subject to negotiation for renewal by June 2004. In addition, franchised haulers and Districts also have WDA's that are subject to negotiation. The negotiations for renewal will need to be extended because the County landfill system will not have been defined by June 2004. Approval of the Olinda Alpha Landfill expansion is a key component of the system implementation required for negotiation of WDAs for an additional ten-year period.

1.1.4 PROJECT DESCRIPTION

1.1.4.1 Project Modifications

The proposed project includes both a vertical and a horizontal expansion of Olinda Alpha Landfill within the existing landfill property. No change in the landfill property boundary is proposed. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (AMSL) to a maximum of 1,415 feet AMSL or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the existing landfill property. This modification would expand the existing refuse footprint by an estimated 33 acres within the existing property boundary of Olinda Alpha Landfill. The extent of the lateral expansion will be determined after additional geotechnical field data is obtained prior to construction. Portions of the horizontal expansion would be in areas that have already been disturbed by landfill operations. Figure 4.5-1, provided in Section 4.5-2 (pg 4-16) of this EIR, shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 4.5-2, provided in Section 4.5-2 (pg-4-17) of this EIR, shows the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project. The expanded landfill would ultimately accommodate disposal of an additional 25.7 million cubic yards of air space or 14.2 million tons (MT) of MSW (based on a 5:1 refuse-to-soil ratio and 1,333 lb/cy refuse density) and would extend the life of this landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, approved landfill elevations and existing disposal technologies. The proposed project would not result in any increase to either the maximum daily permitted tonnage or the annual average daily tonnage limits for this landfill.

1.1.4.2 Project Phasing

The proposed expansion of Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill property at once. Operations in the vertical and lateral expansion areas would continue as before with the incremental development of waste cells across the deck in 20-foot lifts from south to north and west to east. The lateral expansion would occur before the vertical expansion, prior to reaching the existing permitted elevation of 1,300 feet AMSL. As filling operations approach the lateral expansion area elevations, the lateral expansion areas would be lined and refuse filling would continue across the deck.

On-site soil to be used for daily cover, road construction and other related uses is available at the Olinda Alpha Landfill through 2015. The site currently accepts dirt as an exempt commodity and continues to stockpile soil on-site for future cover use. When on-site soil for cover is depleted at Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to occur in 2015 and is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015. Fill and cover techniques at the landfill under the expansions would be similar to the methods currently employed. Waste would be deposited, compacted and covered daily using appropriate landfilling methods.

The final cover system for the entire landfill site will be constructed in accordance with regulatory requirements and an approved Final Closure Plan. The current final cover design for

the deck and slope areas of the landfill is planned to consist of a two-foot foundation layer comprised of random soils and a minimum one-foot low-permeability layer of compacted fine grained soils, which will yield a permeability of 1 x 10^{-6} cubic meters per second (cm/sec) or less. The vegetative layer depth would vary for the deck and slopes for landscaping purposes. The deck would have a two-foot thick vegetative layer and the vegetative layer on the slope areas would vary from two to five feet in thickness.

The final cover design for the deck and slope areas for any lined portion of the landfill expansion would meet Title 27 requirements. The final cover for the entire site will meet or exceed regulatory requirements at the time of closure of the site. The final cover design for the site will be determined in the Final Closure Plan which would be developed two years prior to closure. A cover design to support a passive use regional park, which is the current post-closure use, will be developed as part of the Final Closure Plan. At that time, the IWMD will evaluate new technologies that may support this type of end use.

1.1.4.3 Waste Composition

The waste composition at Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Non-hazardous MSW would comprise the waste stream and existing screening safety mechanisms would continue to be employed to ensure that hazardous materials are not accepted.

1.4.4.4 Traffic

Access to Olinda Alpha Landfill would remain unchanged, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions. The additional traffic associated with soil import for cover use at Olinda Alpha Landfill starting by approximately 2015 would be offset by the cessation of refuse importation from outside Orange County in 2015 (see further discussion in Section 4.4.1).

1.1.4.5 Other Project Features

The proposed project may require that additional landfill operations, support and maintenance buildings and structures be constructed at Olinda Alpha Landfill and may include additional LFG control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Employees would continue to perform landfill operations including administration, landfill cover operations and other landfill-related operations. The number of pieces of and types of equipment used at Olinda Alpha Landfill also would remain unchanged. The operating schedule/procedures at Olinda Alpha Landfill would remain unchanged after implementation of the proposed project.

The existing surface water drainage systems, LFG collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate the proposed

expansion of Olinda Alpha Landfill. A description of these systems is provided later in Section 4.5.3 (Environmental Protection Elements).

1.1.5 PROJECT OBJECTIVES

The objectives of the proposed project to expand the Olinda Alpha Landfill, derived from the RELOOC study goals and objectives and the RELOOC planning process, are:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.
- Ensure that the County's near term waste disposal needs are met.
- Maximize capacity of Olinda Alpha Landfill.
- Maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees.
- Maintain efficient, cost effective and high quality IWMD operations.
- Minimize adverse environmental impacts associated with MSW disposal.

1.2 SUMMARY OF IMPACTS

Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance) of this EIR documents the technical analyses of the potential impacts of the proposed project related to land use and planning, geology and soils, hydrogeology and water quality, surface water hydrology, transportation and circulation, air quality, noise, aesthetics, cultural and scientific resources, hazards, public services and biological resources. Alternatives that considered Olinda Alpha Landfill closing in 2013 are described in Section 6.0 (Alternatives) and are summarized in Section 1.3. Sections 7.0 (Growth Inducing) and 8.0 (Cumulative Impacts) describe the potential for the proposed project to result in growth inducing and cumulative impacts, respectively. Section 10.0 (Unavoidable Adverse Impacts) summarizes the potentially significant adverse impacts of the proposed project which cannot be avoided or mitigated to below a level of significance.

The potential for the proposed project to result in adverse impacts related to these environmental parameters is summarized in Table 1-1.

1.3 ALTERNATIVES

1.3.1 SUMMARY OF ALTERNATIVES

This EIR analyzes two Alternatives to the proposed project and the No Project Alternative as required by the CEQA. Discussed below is a brief description of the Alternatives and their assumptions. For a detailed description of these Alternatives, refer to Section 6.0 (Alternatives to the Proposed Project).

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures		Level of Significance After Mitigation
Summary of Impacts Related to Land Use and Planning			
Implementation of the proposed project would conflict with the existing Memorandum of Understanding (MOU) between the County of Orange and the City of Brea regarding Olinda Alpha Landfill.	LU-1	Prior to acquiring revised landfill permits and finalization of design plans for the project, the County of Orange and the City of Brea will renegotiate the details of the MOU to allow the disposal of MSW over a longer period of time. Under the proposed project, closure would be extended to approximately 2021 based on increasing the site's air space capacity and increased operational efficiencies, current population projections and existing disposal technologies.	Less than significant.
Summary of Impacts Related to Geology and Soils			
Implementation of the proposed project has the potential to impact the landfill's slope stability.	G-1	Prior to construction of the lateral expansion area, additional geologic data will be obtained and subsequent slope stability analyses will be conducted to verify assumptions made for the stability analysis included in Appendix L.	Less than significant.
	G-2	Geologic mapping will be conducted during construction to identify any changes in geologic structure that may impact the stability analysis conducted for the lateral expansion design.	
Summary of Impacts Related to Hydrogeology and Water Quality			
Implementation of the proposed project has the potential to impact groundwater.	HW-1	A composite liner or an alternative to the prescriptive composite liner and LCRS will be placed in the lateral expansion area to intercept and collect leachate for disposal off-site or use as dust control, as approved by the RWQCB-SA. A subdrain system will be installed, as necessary, to intercept seeps below the liner. The prescriptive or alternative liner, LCRS and subdrain will be approved by the RWQCB-SA and comply with federal and state requirements (27 CCR).	Less than significant.
	HW-2	The site will continue to comply with the site's Waste Discharge Requirements and Monitoring and Reporting Program requirements imposed by the RWQCB-SA for the protection of water quality.	

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures		Level of Significance After Mitigation
	HW-3	The Corrective Action System in place at the landfill will continue operating during the extended landfill operations if detections of VOCs in groundwater continue.	
Summary of Impacts Related to Surface Water Hydrology			
Implementation of the proposed project has the potential to impact hydrological system.	H-1	As part of a Joint Technical Document (JTD) to be prepared by IWMD in support of a revised SWFP and WDRs for the proposed expansion, the IWMD shall present the assumptions, methods and calculations used to calculate the potential flow quantities for run-on, run-off and sediment content of storm water flow used in sizing drainage and sediment control facilities for Olinda Alpha Landfill in conformance with 27 CCR regulations.	Less than significant.
	H-2	As part of a JTD to be prepared by IWMD in support of a revised SWFP and WDRs for the expansion, the IWMD shall include surface drainage plans for Olinda Alpha Landfill expansion final grading plans, including any berms, down drain systems, perimeter drainage channel improvements and the location of off-site discharge points for run-off water in compliance with 27 CCR regulations.	
	H-3	Diversion and drainage facilities shall be evaluated, designed, constructed and operated to accommodate the anticipated volume of precipitation and peak flows from surface run-off under the precipitation conditions specified in Title 27 of the CCR. Drainage facilities for the landfill expansion shall be designed to prevent washout of the waste management unit during a 100-year storm event.	
	H-4	The landfill (including the expansion area) will continue to operate under an NPDES Permit to discharge storm flows. The criteria and restrictions of the NPDES Permit and the SWPPP and BMPs that accompany the NPDES Permit will be adhered to.	
	H-5	Positive drainage will be ensured in the expansion area by maintaining a two to three percent slope on all landfill deck surfaces.	

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures		Level of Significance After Mitigation
	H-6	During all landfilling operations in the expansion area, sediment and erosion control plans will continue to be prepared and implemented on an annual basis to reduce sediment and control erosion on the landfill site.	
Summary of Impacts Related to Transportation and Circulation			
Imperial Highway at its intersections with Valencia Avenue and Kraemer Boulevard will experience a significant adverse impact as a result of project traffic in 2021.	T-1	Imperial Highway at Valencia Avenue. IWMD will contribute a 9.2 percent fair share of the cost to modify the southbound Valencia Avenue approach at Imperial Highway. The fair share allocation is a standard County RDMD guideline for intersections operating at a LOS E without a project and LOS F with a project as the LOS is unacceptable. Under both scenarios, IWMD will contribute its fair share to the incremental impact to the southbound Valencia Avenue approach at Imperial Highway which would change that LOS E to LOS F (Refer to Appendix F-9 for supporting calculation sheets). The proposed modifications include one additional southbound left turn lane and re-configuration of the rest of the southbound lanes (i.e. one through and one right turn lane) to one through lane and one optional through/right lane. This measure can be accomplished with re-striping only and with no additional street widening. This improvement will result in an ICU of 0.836 (LOS D) with mitigation compared to an ICU of 0.981 (LOS E) without mitigation.	Less than significant.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
	T-2 Imperial Highway and Kraemer Boulevard. IWMD will contribute a 100 percent fair share to the cost to modify the eastbound Imperial Highway approach at Kraemer Boulevard. The 100 percent fair share allocation is a standard County RDMD guideline for intersections operating at a LOS D without a project (an acceptable LOS) and LOS E with a project (an unacceptable LOS). Since the projected traffic associated with the Olinda Alpha Landfill expansion project, on its own, would cause the LOS D at the Imperial Highway and Kraemer Boulevard intersection to operate at LOS E, IWMD will contribute 100 percent of the cost to improve the LOS to an acceptable LOS D. The proposed modifications are to provide an eastbound right turn only lane. This mitigation measure requires widening on the south side, relocation of street light poles and other street furniture.	
Summary of Impacts Related to Air Quality		
Implementation of the proposed project has the potential to have short term impacts related to fugitive dust during construction operations.	AQ-1 Applicable dust suppression techniques from Rule 403 are summarized below. Additional dust suppression measures in the SCAQMD CEQA Air Quality Handbook are also included as part of the project's mitigation. Implementation of these dust suppression techniques will reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules will reduce impacts on nearby sensitive receptors. Applicable Rule 403 measures: a. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).	Significant.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
	b. Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earth moving). c. All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114 (freeboard means vertical space between the top of the load and top of the trailer). d. Pave construction access roads at least 100 feet onto the site from main road. e. Traffic speeds on all unpaved roads shall be reduced to 15 mph or less. Additional SCAQMD *CEQA Air Quality Handbook* dust measures: a. Revegetate disturbed areas as quickly as possible. b. All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 miles per hour (mph) and dust plumes are visible. c. All on-site streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water). d. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.	

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
	AQ-2 Dust generated by the construction activities shall be retained on-site and kept to a minimum by following the dust control measures listed below. a. During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease. b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 miles per hour. c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur. d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. e. Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped or maintain 6 inches of freeboard from the point of origin.	
Summary of Impacts Related to Noise		
Although construction of the proposed expansion project would not result in significant adverse short term noise impacts, the following measures will further reduce short term construction related noise levels.	N-1 During all project site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.	Less than significant.
	N-2 The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active construction areas.	

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures		Level of Significance After Mitigation
	N-3	The construction contractor shall locate equipment staging in areas to result in the greatest distance between construction related noise sources and noise sensitive receptors nearest the active construction areas during all project construction.	
	N-4	The construction contractor shall restrict all construction-related activities that would result in high noise levels between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturday, or at any time on Sunday or a federal holiday.	
Though the project will not increase noise above existing conditions because it would not change the volume of traffic as it is occurring in 2004, the continuation of landfill activities due to the project at 2013 would result in a 12 dBA increase above the no project scenario.	N-5	For residential units on Valencia Avenue north of Carbon Canyon Road which are approved prior to any approval of an expansion at Olinda Alpha Landfill, which are constructed and occupied before 2013 and which would be impacted by 65 dBA CNEL or higher traffic noise, the County of Orange IWMD will contribute a fair share to a road noise reduction program for these residences, if such a program is implemented by the City of Brea. This program could potentially implement a variety of road noise reduction measures which may include reduction in road speeds on the segment of Valencia Avenue north of Carbon Canyon Road, construction of sound walls adjacent to the affected residences and/or installation of rubberized asphalt concrete on Valencia Avenue north of Carbon Canyon Road.	Less than significant.
Summary of Impacts Related to Aesthetics			
The visual impacts of the proposed landfill would have the potential to be adverse if the surface of the landfill were vegetated with plant species that would highly contrast with the surrounding undeveloped hills.	AS-1	The existing Olinda Alpha Landfill Landscape Master Plan (LMP) that was developed in concert with IWMD and the City of Brea Citizens Advisory Committee in 1994 to address minimization of interim and permanent visual impacts will be revised to include the proposed vertical and horizontal expansion. The current seed mixes in the LMP will be identified for use on the appropriate areas of the expansion. The revised LMP will execute the original goal of blending the landfill property with the adjacent native open space area. The revised plan will be approved by IWMD and the City of Brea and will be included in the	Less than significant.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures		Level of Significance After Mitigation
		Closure Plan for the site as part of the SWFP and WDR revision application. The phased interim landscape plan included as part of the LMP will be revised to continue visual screening of the landfill operations and facilities for the expansion and to assist in blending the manufactured slopes with surrounding open space prior to landfill closure.	
Impacts associated with additional lighting would be considered substantially adverse if the light spilled over onto adjacent sensitive residential and wildlife habitat areas.	AS-2	All outdoor lighting, including any construction-related lighting, shall be designed, installed and operated in a manner that ensures that all direct rays from project lighting are contained within the landfill property, and that residences and undeveloped areas that may provide wildlife value are protected from spillover light and glare.	Less than significant.
Summary of Impacts Related to Cultural and Scientific Resources			
No cultural resources were identified on the proposed expansion site. However, there is the potential for uncovering previously unknown cultural resources during ground disturbing activities.	C-1	The construction bid package, related construction and design plans, and specifications shall require that if buried cultural material is encountered during project construction, the County's construction contractor shall immediately stop work in the area. Work shall be halted until the County can retain a qualified archaeologist, and the nature and significance of the find are determined. If significant archaeological material is found, it shall be salvaged and collected in compliance with all applicable regulations and sent to a designated museum.	Less than significant.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
No paleontological resources were identified on the proposed expansion site. However, there is the potential for uncovering paleontological resources during ground disturbing activities.	C-2 If human remains are encountered during project construction, the County's construction contractor shall immediately stop work in the area. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.	Less than significant.
	C-3 A Paleontological Resources Impact Mitigation Program (PRIMP) will be implemented. The PRIMP shall include, but not be limited to, the following: paleontological monitoring, preparation of any collected specimens to the point of identification, curation of specimens to a museum or similar institution and preparation of a mitigation report documenting any findings.	
Summary of Impacts Related to Hazards		
There would be no impacts to public health and safety with respect to hazardous materials because the landfill expansion would comply with federal, state and local landfill regulations that currently govern landfill procedures.	No mitigation is required	No Impact.
Summary of Impacts Related to Public Services		
Impacts to public services (fire protection services and parks) will be less than significant.	No mitigation is required.	No Impact.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
Summary of Impacts Related to Biological Resources		
Implementation of the proposed project would impact 1.3 acres of coast live oak.	B-1 Prior to the removal of the 1.3 acres of coast live oak, IWMD shall prepare and submit a Mitigation Monitoring and Reporting Program (MMRP) to the CDFG for review and approval. In accordance with an approved MMRP, IWMD will replace the 1.3 acres of coast live oak woodland at a 1:1 ratio (or as otherwise approved by the CDFG). The location of coast live oak plantings on the landfill will be determined in consultation with CDFG and a qualified ecologist. However, if the ultimate location of these replacement oaks are within the disposal area of the landfill, the RWQCB-SA will need to approve the plan to ensure that the tree root system does not compromise landfill operations and/or closure (final cover) requirements.	Less than significant.
Implementation of the proposed project would impact 4.0 acres of CSS and 10.4 acres of cut/slope revegetation.	B-2 Prior to the removal of the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, IWMD shall prepare and submit a Coastal Sage Scrub Mitigation Plan (CSSMP), to the CDFG for review and approval. In accordance with an approved CSSMP, the IWMD will replace the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, which provide marginally suitable habitat for the California gnatcatcher, at a 1:1 ratio (or as otherwise approved by the CDFG). Guidelines for the CSSMP are: • The mitigation areas/sites shall have been evaluated and selected on the basis of their suitability for use as coastal sage scrub revegetation areas. The parameters evaluated shall include but not be limited to soil conditions, slope aspect, proximity to adjacent coastal sage scrub, level of difficulty of site preparation, and ownership status.	Less than significant.

TABLE 1-1
SUMMARY OF IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential Impact	Mitigation Measures	Level of Significance After Mitigation
	• The mitigation plan shall provide procedures to prepare the soils in the mitigation area, provide detailed seeding/planting mixtures, provide seeding/planting methods and provide any other procedures that will be used for successful revegetation. • Maintenance and monitoring goals shall be established.	

1.3.1.1 Alternative No. 1 – No Project Alternative

The No Project Alternative would include no action by the County of Orange. Under this Alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. The landfill would continue to operate at its existing permitted capacity with no increase in long term physical capacity or daily tonnage received. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 TPD of MSW under an MOU between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative, importation of waste into the Orange County disposal system will end in 2013 when landfilling at the Olinda Alpha Landfill terminates. Upon its closure, approximately 1,000 TPD of MSW, which is in excess of what could be accommodated at the Frank R. Bowerman (FRB) and Prima Deshecha Landfills, would have to be accommodated at landfills outside of Orange County. The projected excess TPD of MSW to be exported out of County is based on population projections for the system demand by 2021 (the horizon year for this EIR) (see Section 4.3.1.2).

Out-of-County landfills would have to be permitted to accept the excess tonnage from Orange County and may include El Sobrante Landfill in Riverside County, the Mid-Valley Landfill in San Bernardino County and/or a rail haul facility.

1.3.1.2 Alternative No. 2 – Two Landfill System in 2013 (Prima Deshecha Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at Prima Deshecha Landfill from 4,000 TPD to 5,000 TPD when Olinda Alpha Landfill closes in 2013.

- Permitted TPD at FRB Landfill remains at 8,500 TPD, when Olinda Alpha Landfill closes in 2013.

- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.

- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1 Thru R5).

This Alternative would include increasing the current daily permitted TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in the EIR horizon year 2021 based on forecasted population growth (see Section 4.3.1.2). The FRB Landfill's permitted TPD received would remain unchanged at 8,500 TPD as the permitted daily limit.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of the County would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. The Prima Deshecha Landfill 2001 General Development Plan remaining refuse capacity would remain unchanged at 77.6 MT (as of January 2002). However, the incremental increase of Prima Deshecha Landfill's in-flow waste stream would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years in landfill life at Prima Deshecha Landfill under this Alternative.

Under this Alternative, the number of truck trips to Prima Deshecha Landfill would increase although the duration of the trips would be reduced because the life of the landfill would be shortened.

Under this Alternative, the County's MOU with the Cities of San Juan Capistrano and San Clemente would need to be amended prior to 2013 to provide for the increase in annual average tonnage. Similarly, permits currently in place with the CIWMB and other regulatory agencies with jurisdictional oversight for Prima Deshecha Landfill would need to be amended.

1.3.1.3 Alternative No. 3 – Two Landfill System in 2013 (Frank R. Bowerman Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes in 2013.

- Permitted TPD at Prima Deshecha Landfill remains at 4,000 TPD when Olinda Alpha Landfill closes in 2013.

- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.

- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1 Thru R5).

This Alternative would include increasing the current permitted TPD at FRB Landfill from 8,500 to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in the EIR horizon year of 2021 based on forecasted population growth (see Section 4.3.1.2). The Prima Deshecha Landfill's permitted TPD would remain unchanged at 4,000 TPD.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of County would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of the FRB Landfill is 2022. This Alternative would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill just meets the horizon year goal of 2021 for this EIR. The accelerated closure date to 2021 results in a net reduction of one year of landfill life at the FRB Landfill based on the currently permitted closure date. Under this Alternative, the number of truck trips to FRB Landfill would increase although the duration of the trips would be reduced slightly because the life of the landfill would be shortened by one year.

Under this Alternative, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased daily tonnage. Similarly, permits currently in-place with the LEA and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended.

1.3.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Each of the alternatives would result in environmental impacts greater than would occur under the No Project Alternative (refer to Section 6.0). Therefore, the No Project Alternative is the environmentally superior alternative, although it would not meet project objectives as discussed earlier. Section 15126.6(e) of the CEQA Guidelines states that if the No Project Alternative is selected as the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives. Of the remaining alternatives, the proposed project is the environmentally superior alternative.

1.4 ISSUES TO BE RESOLVED

The following have been identified as unresolved issues related to the proposed expansion at Olinda Alpha Landfill:

1.4.1 OPERATION OF THE LANDFILL PAST 2013

The current MOU between the City of Brea and the County of Orange indicates that landfilling at Olinda Alpha Landfill will terminate in 2013. Under the proposed expansion, the landfill would continue to operate and would continue to accept waste to 2021. The proposed project will require that the County of Orange and the City approve changes to the existing MOU to reflect the shift of the landfill closure date from 2013 to 2021.

1.4.2 USE OF TONNER CANYON ROAD AS THE LANDFILL ACCESS ROUTE

The potential to use an extension of Tonner Canyon Road as an access route to Olinda Alpha Landfill was identified in a number of comments received on the Notice of Preparation (NOP) and is discussed briefly here. The Tonner Canyon Road extension is discussed in more detail

later in Section 2.3.3 (Tonner Canyon Road). As described in Section 1.1 (Description of the Proposed Project), an extension of Tonner Canyon Road is not proposed as part of the landfill expansion plan. Access to the landfill under the proposed expansion plan will continue to be via the existing Valencia Avenue. The Tonner Canyon extension as shown in the Orange County Transportation Authority Master Plan of Arterial Highways (MPAH) and the City of Brea Master Plan of Roadways (MPR) is proposed for deletion from the MPAH and the MPR as requested by the City. In 1994, the County of Orange completed the "Project Report and Preliminary Summary of Environmental Impacts, Landfill Access Road Alternatives, Olinda/Olinda Alpha Landfill Vertical Expansion Project" which concluded that Valencia Avenue is the environmentally superior and preferred alternative for access to the landfill. Improvements to Valencia Avenue constructed since 1997 provide the necessary capacity on Valencia Avenue to adequately serve the landfill. The County Board of Supervisors approval of the Tonner Canyon Planned Community in 2002 did not include an extension of Tonner Canyon Road. In summary, the extension of Tonner Canyon Road from the existing terminus east of State Route 57 east to the existing terminus of Valencia Avenue does not appear likely to be implemented in the foreseeable future, if ever. For these reasons, the proposed expansion project at Olinda Alpha Landfill does not include any project components or analysis related to extension of Tonner Canyon Road or the use of Tonner Canyon Road for access to the landfill through the life of this project.

SECTION 2.0
INTRODUCTION

SECTION 2.0
INTRODUCTION

2.1 PURPOSE OF THE EIR

2.1.1 AUTHORITY

This Environmental Impact Report (EIR) was prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, as amended (California Public Resources Code Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations Section 15000 et seq.). This EIR assesses the potential impacts associated with the proposed Regional Landfill Options for Orange County (RELOOC) Strategic Plan - Olinda Alpha Landfill Implementation Project (proposed project). The County of Orange is the Lead Agency for the proposed project pursuant to the CEQA.

As stated in Section 15121 of the CEQA Guidelines, an EIR is an informational document which will inform decision-makers, public agencies and the general public about the potential significant environmental effects of a proposed project. It also identifies possible ways to minimize the significant adverse effects of the project and addresses reasonable alternatives to the project. CEQA requires that an EIR contain, at a minimum, the following elements:

- Executive Summary
- Project Description
- Environmental Settings, Impacts and Mitigation Measures
- Alternatives to the Proposed Project
- Growth Inducing Impacts
- Cumulative Impacts
- Effects Not Found to be Significant
- List of Preparers and Persons Consulted

2.1.2 PREPARATION OF THE EIR

This EIR was prepared pursuant to Section 15161 of the CEQA Guidelines which states that a project EIR "…examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all the phases of the project including planning, construction, and operation." The RELOOC Strategic Plan - Olinda Alpha Landfill Implementation EIR analyzes the environmental consequences that could be anticipated to occur from the construction and operation of this proposed landfill expansion project.

2.1.3 INCORPORATION BY REFERENCE

Various technical studies, analyses and reports were used in the preparation of this EIR and are incorporated by reference in accordance with Section 15150 of the CEQA Guidelines. Information from these documents which have been incorporated by reference has been briefly summarized in the appropriate Section(s) of this EIR. The documents and other sources used in

preparation of this EIR are identified in Section 13.0 (References). In accordance with the CEQA Guidelines, Section 15150(b), the location of where the public may obtain or review these referenced documents is also identified in Section 13.0.

2.1.4 INTENDED USES OF THE EIR

The EIR process is specifically designed to facilitate the objective evaluation of the significance of direct, indirect and cumulative impacts, provide analysis of alternatives, identify mitigation measures for significant adverse impacts, and implementation methods for those mitigation measures. It should be noted that just because a particular issue is addressed in this EIR, it does not mean that a significant adverse impact occurs. In several cases, impacts are not significant and adverse, however, the analysis is included to demonstrate the process leading to that conclusion.

Because approval and implementation of the RELOOC Strategic Plan - Olinda Alpha Landfill Implementation Project would result in potentially significant adverse impacts on the environment, this EIR was prepared in conjunction with the project plan. This was done to identify the potential significant adverse impacts and to identify what measures could be incorporated into the project to minimize or eliminate these impacts.

Prior to the certification of the EIR, the Draft EIR will be circulated for a 45-day public review period. All interested persons and/or agencies wishing to comment on the information contained in the EIR must do so within the 45-day public review period.

The County of Orange is responsible for reviewing site plans for the RELOOC Strategic Plan - Olinda Alpha Landfill Implementation project for land use regulations and design guidelines which will outline development standards. Additionally, the County of Orange will be responsible for issuing any necessary County permits and project approvals for all project construction. The County of Orange Board of Supervisors (BOS) will be responsible for certification of the Final EIR.

2.1.5 AGENCIES HAVING JURISDICTION/POTENTIAL DISCRETIONARY ACTIONS

The principal agency having jurisdiction over the proposed project is the County of Orange because the project site is located in an unincorporated area of Orange County. However, the proposed project is also in the City of Brea's Sphere of Influence which will require renegotiation of the existing Memorandum of Understanding (MOU) between the City of Brea and the County of Orange to allow the disposal of municipal solid waste (MSW) over a longer period of time, as a result of the additional capacity that is provided under the proposed project.

In addition to the County of Orange and City of Brea, other public agencies that may also have oversight over the project or may be responsible for issuing subsequent permits necessary to implement the proposed project are identified in Table 2-1.

TABLE 2-1
LIST OF POTENTIAL RESPONSIBLE AGENCIES

Agency	Approval/Permit
Federal Agencies	
United States Environmental Protection Agency	New Source Performance Standards (NSPS) monitoring and reporting requirements. Hazardous Waste Generator Exclusion Program.
State Agencies	
California Integrated Waste Management Board	Concurrence on revision of the existing Solid Waste Facility Permit (SWFP).
Regional Agencies	
Regional Water Quality Control Board - Santa Ana Region	Storm Water Management Plans. Revision of the existing Waste Discharge Requirements (WDR). National Pollution Discharge Elimination System (NPDES) Permit.
South Coast Air Quality Management District	Permits to Construct Expanded Gas Control Systems. Permits to Operate Expanded Gas Control Systems.
County Agencies	
Local Enforcement Agency (Health Care Agency)	Revision of the existing SWFP.
County of Orange Board of Supervisors	Certification of the Final EIR.
Orange County Fire Authority	Fuel Modification Plan and Program Fire Break Roads.
County of Orange Resources and Development Management Department	Grading/Miscellaneous Permits.

2.1.6 AVAILABILITY OF THE EIR

Agencies, organizations and individuals wishing to comment on the information presented in this EIR may do so during the 45-day public review period. All written comments on the EIR will be addressed in the Responses to Comments Report. The Responses to Comments Report will be part of the Final EIR and will be presented to the BOS for their consideration of the EIR and the proposed project. Copies of the EIR and relevant technical studies are available for review during regular business hours at the following locations:

Integrated Waste Management Department 320 North Flower Street, Suite 400 Santa Ana	California State University, Fullerton Library, Document Section Fullerton
Orange County Public Library 31495 El Camino Real San Juan Capistrano	Orange County Public Library 14361 Yale Avenue Irvine
Orange County Public Library 33841 Niguel Road Dana Point	Orange County Public Library 242 Avenida Del Mar San Clemente
Orange County Public Library 1 Civic Center Circle Brea	Orange County Public Library 30341 Crown Valley Parkway Laguna Niguel
Orange County Public Library 4512 Sandburg Way Irvine	University of California, Irvine Main Library, Government Publications Microfilms Irvine

2.2 METHODOLOGY

Each environmental parameter discussed in Section 5.0 of the EIR is organized and analyzed as discussed below.

2.2.1 EXISTING CONDITIONS

This Section describes the existing environmental conditions in the vicinity of the proposed project, as they existed at the time the Notice of Preparation (NOP) was published. The environmental setting constitutes the baseline physical conditions against which the Lead Agency (the County of Orange) determines whether an impact is considered significant and adverse.

2.2.2 THRESHOLDS OF SIGNIFICANCE

Thresholds of significance which are the basis for determining project related potential impacts are presented in this Section of the EIR. These thresholds are derived from local (County of Orange), state and/or federal policies and programs that may apply; and other accepted standards determined to be appropriate by the Lead Agency (County of Orange) pursuant to Section 15064.7 of the CEQA Guidelines. This analysis is intended to be consistent with the Guidelines as revised following the decision in *Communities for a Better Environment v. California Resources Agency,* 103 Cal. App. 4th 98 (2002).

2.2.3 METHODOLOGY RELATED TO EACH ENVIRONMENTAL PARAMETER

The procedures and rules used to analyze impacts of the proposed project on each environmental parameter are presented in this Section of the EIR.

2.2.4 ENVIRONMENTAL IMPACT ANALYSIS

The environmental analysis for each environmental parameter for which the proposed project may or would result in potentially significant adverse impacts is contained in this Section of the EIR. These parameters were identified in the findings of the Initial Study (IS) which was included as part of the NOP. Environmental parameters not discussed in this Section are described in Section 3.0 (Effects Found Not To Be Significant).

2.2.5 MITIGATION MEASURES

If the analysis contained in the environmental impacts Section concludes that the proposed project will create significant adverse impacts on the environment, mitigation measures are identified in this Section to minimize or eliminate the significant adverse impacts.

2.2.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

This Section identifies unavoidable significant adverse impacts which cannot be mitigated or that remain significant even after mitigation is incorporated in the proposed project. If significant unavoidable adverse impacts are identified, it will be necessary for the County of Orange BOS to determine if the benefits from implementing the proposed project outweigh and override the unavoidable adverse effects created by the proposed project and to adopt a Statement of Overriding Considerations.

2.3 BACKGROUND

2.3.1 INITIAL STUDY AND NOTICE OF PREPARATION

As required by CEQA, an IS and NOP for the proposed project were prepared by the County of Orange. The IS indicated that the proposed project did have the potential for significant adverse impacts on the environment and an EIR required. A copy of the IS/NOP is included in Appendix A. The IS/NOP was released on January 13, 2004 for a 30-day public review period which concluded on February 11, 2004. The IS/NOP was distributed to the State Clearinghouse Office of Planning and Research, public agencies, interested parties, libraries and service providers. The distribution list for the IS/NOP is provided in Appendix B.

The County of Orange received eighteen written responses to the NOP. Copies of these comment letters are provided in Appendix C. Written comments received in response to the NOP previously issued on September 9, 2002 were also retained and incorporated into the Draft EIR if requested by the commenter. Table 2-2 summarizes the comment letters and indicates where in the IS and/or in the EIR each specific issue raised in these comment letters is located.

2.3.2 PUBLIC SCOPING AND CITIZEN CONCERNS

A public scoping meeting was held on January 22, 2004 to solicit input for consideration in this EIR. Thirty people attended the meeting at the City of Brea City Council Chambers, located at 1 Civic Center Circle. Following the presentation of the project by County staff, attendees expressed their concerns about the elements and potential impacts of the proposed project. Table 2-3 summarizes the written comments received during the scoping meeting. Table 2-4 summarizes the verbal comments received at the scoping meeting. Copies of the comment letters and verbal comments are provided in Appendix D. In addition, comments received during the previous scoping meeting that was held in the City of Brea on September 18, 2002 are also included in Table 2-5 and are also included in Appendix D.

This EIR was prepared based on the information provided in the IS and the issues expressed in the responses to the NOP and at the scoping meetings.

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
Governor's Office of Planning and Research State Clearinghouse	Confirmed the filing of the NOP and identified the review period.	Comment noted.
Hills for Everyone	Prepare a cumulative impact analysis in evaluating impacts of the proposed project.	Section 8.0 (Cumulative).
	Concerned with fragmentation of habitat and the creation of edge effects by the landfill in this region.	Section 5.12 (Biological Resources).
United States Department of the Interior, United States Fish and Wildlife Service	Provide description of the environment in the vicinity of the project, include aerial photograph with project site outlined.	Section 4.0 (Project Description).
	Provide a complete discussion of each alternative.	Section 6.0 (Alternatives to the Proposed Project).
	Include a complete discussion of the purpose and need, proposed project, including limits of development, grading and fuel modification.	Section 4.0 (Project Description).
	Quantitative and qualitative assessment of biological resources and habitat type should be included.	Section 5.12 (Biological Resources).
	Include a discussion of cumulative impacts to biological resources.	Section 8.0 (Cumulative).
	Mitigation measures to avoid biological resources impacts.	Section 5.12 (Biological Resources).
	Include analysis on wildlife movement and measures to avoid impacts.	Section 5.12 (Biological Resources).
	Include potential impacts to wetlands and jurisdictional waters of the United States.	IS Environmental Analysis Checklist, page 12.
Transportation Corridor Agencies	NOP figures had some inaccuracies, please verify that the maps have been corrected.	Section 4.0 (Project Description).
City of Brea	EIR should have a comprehensive analysis of traffic impacts associate with the project.	Section 5.5 (Transportation and Circulation).
	On going effects of landfill operation to air quality should be analyzed.	Section 5.6 (Air Quality).
	Discussion of aesthetic impacts and mitigation measures.	Section 5.8 (Aesthetics).
	Noise analysis related to landfill operations.	Section 5.7 (Noise).
	Discussion of potential impacts to hydrology, drainage and water quality as they may impact nearby residents.	Section 5.3 (Hydrogeology and Water Quality).
	Discussion of health impacts to nearby residents.	Sections 5.6 and 5.10 (Air Quality and Hazards).
	Analyze impacts to wildlife movement and provide mitigation as appropriate.	Section 5.12 (Biological Resources).
Orange County Fire Authority	Fueling on-site requires UST/AST permits and disclosure from OCFA-Hazardous Materials Service Section.	Section 5.10 (Hazards).
	Question (g) in the IS Checklist (page 17) should be identified as less than significant instead of no impact.	Section 3.0 (Effects Found Not to be Significant).

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
	Fire Station 34 in Placentia handles calls from the Olinda landfill.	Section 5.11 (Public Services).
	Police responds are handled by OC sheriffs.	Section 5.11 (Public Services).
City of Fullerton, Development Services Department	Include an alternative that incorporates diversion of waste which would not need any landfill expansions.	Section 5.1.1.5 (Relevant Plans and Policies).
Aera Energy, LLC	Consider the full range of impacts (aesthetics, noise, traffic, safety, air quality, etc.)	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
Wildlife Corridor Conservation Authority	Include waste reduction as an integral project component and establish mitigation funds for land acquisition/preservation.	Section 5.1.1.5 (Relevant Plans and Policies).
	Include mitigation funds for land acquisition/preservation.	Section 11.0 (Inventory of Mitigation Measures).
	Clarify the impacts to recreational services and other regional parks issues.	Section 5.11 (Public Services).
	Include a pre and post project aesthetics analyses from public viewing areas.	Section 5.8 (Aesthetics).
	Analyze impacts to wildlife movement in regarding to dust, noise and light emissions that could potentially disturb animal behavior.	Section 5.12 (Biological Resources).
Steven C. Vargas (resident)	What is the total acreage available or accessible to the people of Brea once it is closed?	Not an environmental issue under CEQA.
	What is the value of the land?	Not an environmental issue under CEQA.
	What are the impacts of not turning over the landfill property in 2013?	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	What were the landfill dimensions prior to the 1994 MOU?	Not an environmental issue under CEQA.
	As a result of the 1994 MOU, what was the landfill elevation agreed to, how much capacity?	Appendix E (Memorandum of Understanding).
	What is the new elevation if the proposed project is implemented?	Section 4.0 (Project Description).
	What are the visual impacts of this project?	Section 5.8 (Aesthetics).
	How much revenue does the City of Brea receive per year from the landfill operations?	Not an environmental issue under CEQA.
	Is there a restriction of where the money is spent?	Not an environmental issue under CEQA.
	What fee increase (per ton) would the County need to purchase open space or pay for a sports park? What would be the corresponding increase to Brea residents?	Not an environmental issue under CEQA.
	What are the traffic counts going to the landfill?	Section 5.5 (Transportation and Circulation).

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
	The access route to the landfill were restricted in 1997 to remove truck traffic from Lambert. How does this impact hauling routes, noise and pollution to residents on Imperial HWY, Kramer and Valencia Rd?	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	Is the County current on planning projection for the next 50 years of landfill operations?	Section 4.0 (Project Description).
	Has the County located new sites for future landfill operations in Orange County?	Section 6.6.2.2 (Off-site Alternative: New Landfill in Gypsum Canyon).
	Board of Supervisors are attempting to postpone a decision regarding the location of a new landfill, what are the projected cost associated with land acquisition?	This is an important environmental issue, but it is outside the scope of this current EIR.
	Where can the public get information regarding meetings between County officials and IWMD Board Members regarding the privatization of landfill operations?	Not an environmental issue under CEQA.
	What is the feasibility of building an access road off Tonner Canyon for direct access to the landfill?	Section 2.3.3 (Tonner Canyon Road).
	Tonner Canyon is an abandoned oil property in need of remediation, who is responsible for this remediation if an access road is built?	Section 2.3.3 (Tonner Canyon Road).
	How does the cost of building an access road compare to paying increased gate fees for local road improvements and soundwalls?	Section 2.3.3 (Tonner Canyon Road).
	Local Council member is employed, and his family owns a major LA trash hauler company that hauls trash to Olinda. Has the County looked into this to determine if a conflict of interest exists?	Not an environmental issue under CEQA.
County of Orange, Health Care Agency	The existing soil stockpiles at Olinda Linda will be depleted (therefore the site will be dependent on imported soil) by 2013.	Section 4.0 (Project Description).
	Discussion of the proposed increased tonnage for 36 days should not be included since the IWMD withdrew the application of Olinda Alpha.	Sections 4.0 and 5.5 (Project Description and Transportation and Circulation).
	Consider including a brief discussion of the SWFP revision process currently underway.	Not an environmental issue under CEQA for this project.
	In order to maintain control of lateral and vertical migration of landfill gas, it is likely that additional flare(s) will need to be installed.	Sections 4.0 and 5.6 (Project Description and Air Quality).
	Consider analyzing the potential of subsurface off-site migration of landfill gas.	Section 5.10 (Hazards).
	Include discussion of radioactive waste and the fact that fee booths at Olinda Alpha are equipped with radiation sensors.	Section 5.10 (Hazards).

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
	Mention that the landfill has a fire hydrant located near the flare station and wharf valves.	Section 5.10 (Hazards).
California Department of Toxic Substances Control	Identify whether current or historic uses have resulted in any release of hazardous materials.	Section 5.10 (Hazards).
	Identify known or potential contaminated sites within the project area.	Section 5.10 (Hazards).
	Include the mechanism to initiate any required investigation and .or remediation of any contaminated site.	Section 5.10 (Hazards).
	If during construction, soil or groundwater is contaminated, suspend construction and appropriate Health and Safety procedures need to be followed.	Section 5.10 (Hazards).
UNOCAL	Include impacts of truck traffic on Imperial Highway and Valencia Avenue.	Section 5.5 (Transportation and Circulation).
	Consider using an alternative route such as Tonner Canyon Road.	Section 2.3.3 (Tonner Canyon Road).
Erik and Tina Johnson (residents)	Concerns with traffic danger, truck operating hours and proper signage for trucks that are prohibited from Lambert.	Section 5.5 (Transportation and Circulation).
	Concerns with noise related to truck traffic and generating station at the landfill.	Section 5.7 (Noise).
	Concerns with pollution and odors.	Section 5.6 (Air Quality).
California Department of Fish and Game	Include a complete assessment of the flora and fauna within and the adjacent area with emphasis upon identifying endangered, threatened, and locally unique species.	Section 5.12 (Biological Resources).
	A discussion of direct, indirect and cumulative impacts expected to affect biological resources.	Sections 5.12 and 8.0 (Biological Resources and Cumulative Impacts).
	A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated.	Section 6.0 (Alternatives to the Proposed Project).
	Mitigation measures for adverse impacts related to biological resources.	Section 5.12 (Biological Resources).
	A California Endangered Species Act (CESA) must be obtained if the project has the potential to result in “take” of species of plants or animals listed under CESA.	Section 5.12 (Biological Resources).
	Strongly discourages development in wetland and riparian habitats.	IS Environmental Analysis Checklist, page 12.
City of Fullerton, Development Services Department	Request that the IWMD continue to work with the City of Fullerton to support diversion efforts in accordance with AB 939.	Not an environmental issue under CEQA for this project.
	An alternative that includes diversion measures should be considered.	Section 6.0 (Alternatives to the Proposed Project).

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
California Integrated Waste Management Board	Describe in detail the excavation plans for the proposed landfill expansions of the subject facilities.	Not an environmental issue under CEQA for this project.
	What is the proposed acreage for the landfill footprint and proposed project height?	Section 4.0 (Project Description).
	What is the proposed average and peak daily tonnage of waste materials to be permitted on a daily basis?	Section 4.0 (Project Description).
	What are the types and numbers of vehicles that will access the landfill facilities on a daily basis?	Section 4.0 & 5.5 (Project Description & Transportation and Circulation).
	What are the proposed hours and days of operation?	Section 4.0 (Project Description).
	What are the types of wastes to be disposed at the landfill?	Section 4.0 (Project Description).
	What project design or operations of the facility to prevent related impacts to litter, odor, noise, glare, vectors, vehicle queuing, drainage, and health and safety?	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	What special circumstances provisions will be required for handling, processing transport and storage of special wastes, if any?	Section 5.10 (Hazards).
	Will the highest vista of the landfill be at or above any existing ridgelines or in direct line of sight from a scenic viewpoint?	Section 5.8 (Aesthetics).
	Include significant effects and mitigation measures.	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	Include alternatives for the proposed project.	Section 6.0 (Alternatives to the Proposed Project).
	Description of salvaging operations.	Not an environmental issue under CEQA for this project.
	Describe the design and operational features relating to household hazardous wastes.	Section 5.10 (Hazards)
	If composting is part of the proposed project, the EIR should contain a complete description.	Section 4.0 (Project Description).
	Identify any areas of prime agricultural or Williamson Act contract lands that would be taken by the proposed project.	IS Environmental Analysis Checklist, page 4.
	CIWMB have identified potential impacts to land use, aesthetics, water quality, air quality, traffic, biology, noise and health and safety.	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	Cumulative impacts.	Section 8.0 (Cumulative Impacts).
	Mitigation Reporting and Monitoring Program (MRMP) must be submitted at the time local certification of the EIR.	Refer to Final EIR.
	How will the magnitudes and maximum ground acceleration affect proposed slopes stabilities?	Section 5.2 (Geology and Soils).

TABLE 2-2
SUMMARY OF COMMENTS IN RESPONSE TO THE NOP

Respondent	Summary of Comments	Where Comment is Addressed in the EIR
	Title 27, CCR, Section 21190-Postclosure Land Uses may apply to the proposed project.	Section 11.0 (Inventory of Mitigation Measures).
	Title 14, CCR, Section 17407.5. Hazardous, Liquid and Special Wastes may apply to the proposed project.	Section 5.10 (Hazards).

TABLE 2-3
SUMMARY OF WRITTEN COMMENTS AND QUESTIONS - JANUARY 22, 2004
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
Sami Abunadi	Will it be safe to eat fruits from the trees in Olinda Ranch?	Not an environmental issue under CEQA for this project.
	How much trash smell and particulates am I going to breathe?	Section 5.6 (Air Quality).
	Can you direct traffic through Tonner Canyon?	Section 2.3.3 (Tonner Canyon Road).
	Can you change truck hours till after 9:00 am?	Not an environmental issue under CEQA for this Project.
Roger A. Hoanpoa	Would like to see traffic routed to Tonner Canyon Road.	Section 2.3.3 (Tonner Canyon Road).
	Noise and pollution is becoming intolerable.	Sections 5.6 and 5.7 (Air Quality and Noise).
Unknown member of the audience	Look at the landfill's impact on bird habitat.	Section 5.12 (Biological Resources).
	Odor should be studied in the EIR.	Section 5.6 (Air Quality).
	Wildlife corridor should be studied in the EIR.	Section 5.12 (Biological Resources).
Unknown member of the audience	Air pollution should be analyzed in the EIR	Section 5.6 (Air Quality).
	Landslide possibility due to the height of the landfill.	Section 5.2 (Geology and Soils).
	What type of moving equipment is on the landfill, and what is their relationship to pollution.	Section 5.6 (Air Quality).
	Wildlife corridors should be studied in the EIR.	Section 5.12 (Biological Resources).
	Impacts that can not be mitigated should have some compensation for the damages.	Section 11.0 (Inventory of Mitigation Measures).
Unknown member of the audience	Ask that air quality test be done due to large amount of black dust particles.	Section 5.6 (Air Quality).
	Use Tonner Canyon as the truck route, which would solve the problem related to noise, vibration, toxic particles and road safety.	Section 2.3.3 (Tonner Canyon Road).
David Smith	Re-route the trash truck to Tonner Canyon.	Section 2.3.3 (Tonner Canyon Road).
Robert Lawton	Would like the green waste site closed.	Not an environmental issue under CEQA for this project.

TABLE 2-3
SUMMARY OF WRITTEN COMMENTS AND QUESTIONS - JANUARY 22, 2004
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
	Re-route the trash truck to Tonner Canyon.	Section 2.3.3 (Tonner Canyon Road).
Eric Bettecheim	Re-route the trash truck to Tonner Canyon.	Section 2.3.3 (Tonner Canyon Road).
	Landscape the lower facing slopes of the landfill.	Section 5.8 (Aesthetics).
Dr. Majed Muhtaseb	Concerns with safety related traffic.	Section 5.5 (Transportation and Circulation).
	Concerns with odors and noise.	Sections 5.6 and 5.7 (Air Quality and Noise)
	No entity should gain economic gain at the expense of the residents of Brea.	Not an environmental issue under CEQA for this project.
Unknown member of the audience	Concerns with truck traffic.	Section 5.5 (Transportation and Circulation).
	Concerns with odors that pervade the community.	Section 5.6 (Air Quality).

TABLE 2-4
SUMMARY OF VERBAL COMMENTS AND QUESTIONS - JANUARY 22, 2004
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
Joyce Larson	County needed to expand landfill capacity and then started in import trash. The County betrayed us before and how can we believe this time?	Not an environmental issue under CEQA for this project.
Warren Collier	The power plants at the landfill do make excessive noise, request a noise impact analysis.	Section 5.7 (Noise).
	Was told that sound walls were to be put up to reduce noise from power plants, but nothing has been done.	Not an environmental issue under CEQA for this Project.
	If there is a landfill expansion, sound barriers should be used around the facility.	Section 5.7 (Noise).
	Would like traffic studied and would like traffic re-route through Tonner Canyon.	Section 5.5 and 2.3.3 (Transportation and Circulation and Tonner Canyon Road).
Tina Johnson	Concerned with noise impacts on children growing up in Olinda Ranch.	Section 5.7 (Noise).
	Concerned with traffic impacts on children growing up in Olinda Ranch.	Section 5.5 (Transportation and Circulation).
	Concerned with pollution impacts on children growing up in Olinda Ranch.	Section 5.6 (Air Quality).
	Concerned with aesthetics and how much higher the landfill will be.	Section 5.8 (Aesthetics).

TABLE 2-4
SUMMARY OF VERBAL COMMENTS AND QUESTIONS - JANUARY 22, 2004
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
Phi Tonioka	Concerned with noise along main road that leads to Olinda Alpha.	Section 5.7 (Noise).
	Concerned with exhaust and the vibration of these trucks.	Section 5.6 and 5.7 (Air Quality and Noise).
	Truck traffic is another concern, suggest using Tonner Canyon.	Section 2.3.3 (Tonner Canyon Road).
	Concerned with children growing up close to a landfill.	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
Keith Fullington	Air quality is his main concern.	Section 5.6 (Air Quality).
	Concerned with the safety of children due to the traffic on community roads.	Section 5.5 (Transportation and Circulation).
	EIR should address traffic impacts on Lambert and Carbon Canyon Road.	Section 5.5 (Transportation and Circulation).
	How many trips to and from the landfill are there?	Section 5.5 (Transportation and Circulation).
	Suggest making an off-ramp from the 57 just for trash trucks so it would not impact the wildlife.	Section 2.3.3 (Tonner Canyon Road).
Unknown	Are there more questions in the EIR than in the Checklist?	Section 2.0 (Introduction).
	Asked if one question in the Checklist was going to be changed from "No Impact" since it was incorrect.	Appendix A (Initial Study/Environmental Checklist and NOP).
Unknown	What levels are used regarding the potential significant impacts, less than significant and is there a scoring system used in the Checklist?	Appendix A (Initial Study/Environmental Checklist and NOP).
Unknown	It would make more sense if traffic was re-routed to Tonner Canyon.	Section 2.3.3 (Tonner Canyon Road).
Unknown	Asked about the life expectancy and pollution of the power plants.	Section 5.6 (Air Quality).
Unknown	When was the designated road chosen to the landfill?	Not an environmental issue under CEQA for this Project.
Unknown	How is the EIR going to address water quality in the landfill situation?	Section 5.3 (Hydrogeology and Water Quality).
Unknown	What happens to all the chemicals in the groundwater and will the plastic lining protect it from leakage?	Section 5.3 (Hydrogeology and Water Quality).
Unknown	Concerned with pollution from trucks.	Section 5.6 (Air Quality).
Unknown	Are there people checking and testing the water, soil, air and counting trucks.	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
Unknown	How will particulates be exposed to Olinda Ranch?	Section 5.6 (Air Quality).
Unknown	Can you direct traffic through Tonner Canyon?	Section 2.3.3 (Tonner Canyon Road).
Unknown	Concerned with the height of the expansion.	Section 5.8 (Aesthetics).

TABLE 2-4
SUMMARY OF VERBAL COMMENTS AND QUESTIONS - JANUARY 22, 2004
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
Unknown	When will the solutions be addressed after the money for the extension comes through?	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
Unknown	If the City does not approve the extension of the landfill, what is done at that point?	Section 6.3 (Alternative 1-No Project Alternative).
Unknown	What are the economic impacts if the project does not go through?	Not an environmental issue under CEQA.
Unknown	Residents want to be reflected in the data. Resident offers his backyard for data.	Not a requirement under CEQA.
Unknown	Valencia and Sandpiper is an empty lot for a good set up.	Not a requirement under CEQA.
Unknown	Economic impacts of families living in the area due to illness from the landfill.	Not an environmental issue under CEQA.
Unknown	Impact on home values?	Not an environmental issue under CEQA.
Unknown	Resident was told by homeowner association that the access road to the landfill was going to be moved.	Not an environmental issue under CEQA.
Unknown	If it were to go to the No Project, how far would they have to go for trash disposal and the cost to trash disposal	Section 6.0 (Alternatives to the Proposed Project). Cost is not an environmental issue under CEQA.

TABLE 2-5
SUMMARY OF VERBAL COMMENTS AND QUESTIONS - SEPTEMBER 18, 2002
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
Phi Tanioka	Concerned with negative consequences from transportation of waste.	Section 5.5 (Transportation and Circulation).
	Concerned with vibration and air quality related to truck traffic.	Section 5.6 and 5.7 (Air Quality and Noise).
	Use another access road.	Section 2.3.3 (Tonner Canyon Road).
Dianne Taylor	Truck traffic is really bad.	Section 5.5 (Transportation and Circulation).
	Noise, vibration and air quality is unacceptable.	Section 5.6 and 5.7 (Air Quality and Noise).
	Use Tonner Canyon as an alternative access.	Section 2.3.3 (Tonner Canyon Road).
Norm Wit	How many tons are being imported into the County landfill?	Section 4.0 (Project Description).
	Why is the cessation of imported materials not being addressed?	Section 6.6.1 (Early Cessation of MSW Importation from Outside the County).
Chris Rimer	How do you explain that there is no increase in daily tonnage yet we have more growth which means more trash?	Section 4.0 (Project Description).
Steve Vargas	Issues of concern in Brea include traffic along Imperial Highway.	Section 5.5 (Transportation and Circulation).

TABLE 2-5
SUMMARY OF VERBAL COMMENTS AND QUESTIONS - SEPTEMBER 18, 2002
SCOPING MEETING

Comment	Response to Comments	Where Comment is addressed in the EIR
	Concerned with noise and the vibration related to trucks.	Section 5.7 (Noise).
	Concerned with particulates and the hazards to my neighborhood.	Section 5.6 (Air Quality).
	How many trucks pass the landfill gates daily?	Section 5.5 (Transportation and Circulation).
	When did the expansion come to be?	Section 4.0 (Project Description).
	What is the acreage of the landfill in 2013 and 2021?	Section 4.0 (Project Description).
	Please clarify the dimensions of the regional park.	Appendix E (MOU).
	Concerned with the protection of the groundwater.	Section 5.3 and 5.4 (Hydrogeology and Water Quality and Surface Water Hydrology).
	What is the cost for the County to extend this landfill from 2013 to 2021?	Not an environmental issue under CEQA for this Project.
	Does the County anticipate having mitigations?	Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance).
	Does the County anticipate having tipping and gate fess?	Not an environmental issue under CEQA for this Project.
Claire Schlotterbeck	Concerned with particulate matter.	Section 5.6 (Air Quality).
	Concerned with the damage the landfill expansion will cause on the Puente-Chino Hills wildlife corridor.	Section 5.12 (Biological Resources).
Melody Schlotterbeck	Would like to see a tipping fee program that would fund the preservation of native habitats.	Not an environmental issue under CEQA for this Project.
	Concerned with traffic and suggests that the evaluation is looked at closely.	Section 5.4 (Transportation and Circulation).

2.3.3 TONNER CANYON ROAD

As discussed briefly earlier in Section 1.4.2 (Use of Tonner Canyon Road as the Landfill Access Route), the potential to use an extension of Tonner Canyon Road as an access route to Olinda Alpha Landfill was identified in a number of comments received on the NOP. The following Sections briefly describe the history of Tonner Canyon Road, its inclusion in transportation planning documents and various environmental analyses which have been conducted regarding this potential road extension. The Tonner Canyon Road extension is included in the Master Plan of Arterial Highways (MPAH) and the City of Brea General Plan Circulation Element. As discussed below, the potential extension of Tonner Canyon Road has been analyzed in the EIR for the Tonner Hills Planned Community (PC, 2002) and twice for the Olinda/Olinda Alpha Access Road (1994 and 1997). A brief summary of the environmental analyses in these documents for the potential extension of Tonner Canyon Road is also provided in this Section.

2.3.3.1 Orange County Transportation Authority Master Plan of Arterial Highways

The Orange County Transportation Authority (OCTA) is responsible for the MPAH in Orange County. The MPAH identifies existing and planned arterial roads throughout the County, based on existing and planned land uses and needed circulation system components to support those land uses. Tonner Canyon Road/Valencia Avenue is shown on the MPAH (12/11/00) as a four lane, divided primary arterial between State Route 57 (SR 57) and Imperial Highway. The MPAH distinguishes the segments of this road which are existing from those that are proposed. The proposed segment of Tonner Canyon Road/Valencia Avenue extends from the existing terminus of Tonner Canyon Road east to the existing northern terminus of Valencia Avenue.

The MPAH is a planning document and does not provide funding or implementation of the MPAH circulation system. Funding and implementation of the MPAH improvements are the responsibility of the individual jurisdictions. At this time, there is no proponent, no funding source and no identified project for the extension of Tonner Canyon Road as shown on the MPAH.

The City of Brea has previously formally requested that the OCTA analyze the potential deletion of the segment of Tonner Canyon Road from the existing terminus of Tonner Canyon Road east to the existing northern terminus of Valencia Avenue from the MPAH.

2.3.3.2 City of Brea General Plan Circulation Element

The City of Brea adopted an updated General Plan, including an updated Circulation Element, on August 19, 2003 (available from the City of Brea). That Circulation Element includes the City's Master Plan of Roadways (MPR, Figure CD-8 in the Circulation Element) which shows Tonner Canyon Road/Valencia Avenue as a primary arterial from SR 57 southeast to City boundary, just south of Imperial Highway. This designation is consistent with the MPAH except that the City's MPR includes a short segment of Valencia Avenue south of Imperial Highway as a primary arterial, which is not included on the MPAH. Figure CD-8 in the Circulation Element further notes that "The Valencia Avenue extension between the entrance to the Olinda Alpha Landfill and SR 57 will be deleted following parallel changes to the OCTA MPAH."

The text of the Circulation Element identifies specific changes that are accommodated in the MPR. That text indicates the City's intent to "Eliminate Tonner/Valencia Avenue (north of Lambert Road) as a Proposed Primary Arterial. Land Use Policy north of Lambert Road does not support the MPAH alignment, nor do planned densities require a roadway of this size." (General Plan, page 2-49).

2.3.3.3 1994 Evaluation of Landfill Access Road Alternatives

In 1994, the County of Orange completed the "Project Report and Preliminary Summary of Environmental Impacts, Landfill Access Road Alternatives, Olinda/Olinda Alpha Landfill Vertical Expansion Project." That report evaluated four access alternatives to Olinda Alpha Landfill, two of which included a Western Access Road from the existing terminus of Tonner Canyon Road east to the landfill, on a more southern alignment than the conceptual alignment

shown on the MPAH for this segment of Tonner Canyon Road. That study concluded that existing Valencia Avenue was the preferred access to the landfill, based on physical and environmental constraints and costs. The most substantial of the physical and environmental constraints which differentiated the Western Access Road and Valencia Avenue alternatives and which were greater for the Western Access Road were flood risk; biological resources (habitats and wildlife corridor); aesthetics (impacts to one more view than the Valencia Avenue alternative); and traffic (2005 and buildout levels of service).

2.3.3.4 1997 Evaluation of Olinda Alpha Access Road Alternatives

In April 1997, the County of Orange completed the "Final Environmental Impact Report, Olinda/Olinda Alpha Access Road." That EIR evaluated access road alternatives including Valencia Avenue (two lane undivided and four lane undivided) and a Western Access Road. The Final EIR addressed four alignments for a Western Access Road through Tonner Canyon, one of which was determined superior to the others and was analyzed as a primary alternative in the EIR. The other three were evaluated as alternatives to the primary Western Access Road. As documented in the EIR, the four Western Access alignments would have required the construction of an approximate two-mile long road in undisturbed areas of Tonner Canyon. The environmental analysis concluded that all the Western Access Road alignments would result in unavoidable significant adverse impacts to biological resources, because all the alignments would result in a road that would adversely affect the use of Tonner Canyon as an important wildlife movement corridor. In addition, the construction cost of the primary Western Access Road alternative was estimated to be over five times the estimated cost of the Valencia Avenue - Four Lane Road Alternative. Based on this and other environmental considerations, the BOS found that the Valencia Avenue - Four Lane Road was the Environmentally Superior Alternative. That Alternative was also selected by the BOS as the Preferred Alternative.

On August 5, 1997 the County BOS approved landfill access improvements, the upgrading and widening of Valencia Avenue, as required by the County's MOU with the City of Brea. Valencia Avenue has since been widened from two lanes to a four-lane divided highway from Birch Street/Rose Drive north to Lambert Road/Carbon Canyon Road, and from two lanes to a four-lane undivided roadway from Lambert/Carbon Canyon north to the Sandpiper Street entrance to Olinda Ranch, consistent with the MOU and the 1997 EIR which identified the Valencia Avenue - Four Lane Road as the preferred access route to Olinda Alpha Landfill.

2.3.3.5 Tonner Hills Planned Community (PC) Final EIR

This EIR evaluated the potential impacts of this proposed PC**.** The Tonner Hills PC was approved by the Orange County BOS on November 19, 2002. The PC consists of 789.8 acres that include 795 residential units on 180 acres, Open Space with continued and new oil production activities on 559.7 acres, Open Space/Public Use area on 21.5 acres, existing oil facilities - Tonner Tank Farm and Main Oil Operations on 16.3 acres, and Local Park Land on 14.6 acres.

As part of the original proposal, the Tonner Canyon PC was proposed to include an approximate two mile extension of Tonner Canyon Road, from the road's current terminus just east of SR 57

east to the existing northern terminus of Valencia Avenue. The proposed extension of Tonner Canyon Road as part of this project resulted in detailed and specific concerns raised by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). Specifically, the USFWS stated the following in its comment letter on the Draft EIR for the proposed Tonner Canyon PC:

> "Tonner Canyon provides water and cover for a variety of wildlife species which utilize both the canyon and the surrounding upland habitat as a movement corridor. This major east-west wildlife corridor has been well documented as a corridor of regional importance that supports wildlife movement throughout the Chino/Puente Hills, from west of the 57 Freeway northeast to Los Angeles and San Bernardino Counties. The Tonner Hills property provides habitat and a wildlife movement corridor for a wide variety of mammal species, including rabbit, raccoon, skunk, gray fox, coyote, bobcat, mule deer and mountain lion. The proposed development would directly impact the corridor by removing and fragmenting habitat. The constricted corridor through the property would then be subject to a suite of indirect effects from the development, including artificial night lighting, increased human activity, and uncontrolled pets.
>
> Of greatest concern is the proposed extension of Tonner Hills Road. The bridge at Tonner Canyon is the only underpass available for wildlife movement under the 57 Freeway and is considered a choke point (Haas and Crooks 1999). Because wildlife is restricted to just this one route, the proposed extension of Tonner Canyon Road will substantially compromise this unique and functional corridor. Not only would wildlife movement be severely restricted, but the road would increase wildlife mortality due to roadkill. Therefore, we strongly recommend that the proposed extension be deleted from the proposed project." (June 24, 2002 letter from USFWS to County of Orange Planning & Development Services Department regarding the Draft Tonner Hills PC EIR, pages 4 and 5).

CDFG stated the following in its comment letter on the Draft EIR:

> "In summary, the proposed extension of Tonner Hills Road directly through the wildlife corridor would further reduce sensitive species, reduce sensitive habitats, impact regional wildlife movement, increase wildlife mortality over time, and increase indirect effects. For these reasons, the Department recommends that the Environmentally Superior Alternative not include the Tonner Hills Road. In light of the direct, indirect, and cumulative regional impacts of the road, we do not recommend the construction of Tonner Hills Road under any project scenario." (June 24, 2002 Letter from CDFG to County of Orange Planning & Development Services Department regarding the Draft Tonner Hills PC EIR, pages 5 and 6).

As noted, both USFWS and CDFG concluded that the extension of Tonner Canyon Road would divide and fragment a regionally important wildlife movement corridor. During the BOS's consideration and subsequent approval of the Tonner Hills PC, in response to comments received on the Draft EIR, the proposed extension of Tonner Canyon Road was eliminated as an element of the Tonner Hills PC. As approved by the BOS, the Tonner Hills PC will include a gated,

private internal road system accessed from existing Tonner Canyon Road to the west, existing Kraemer Boulevard to the south and Valencia Avenue at Santa Fe Road to the east. Tonner Canyon Road would not extend east as far as Valencia Avenue and would not be available as an alternative access route to the landfill.

2.3.3.6 Summary

As described in Section 1.1 (Description of the Proposed Project), the Tonner Canyon Road extension is not proposed as part of the Olinda Alpha Landfill expansion plan. Access to the landfill under the proposed expansion plan will continue to be via Valencia Avenue.

As described above, the Tonner Canyon extension as shown in the MPAH and the City's MPR is proposed for deletion from the MPAH and the MPR as requested by the City of Brea. Two previous studies related to access to the landfill have concluded that Valencia Avenue is the environmentally superior and preferred alternative for access to the landfill. Improvements to Valencia Avenue constructed since 1997 provide the necessary capacity and cross section on Valencia Avenue to adequately serve the landfill. The County BOS's approval of the Tonner Canyon PC did not include the extension of Tonner Canyon Road.

In summary, the extension of Tonner Canyon Road from the existing terminus east of SR 57 east to the existing terminus of Valencia Avenue does not appear likely to be implemented in the foreseeable future, if ever. For these reasons, the current proposed expansion project at Olinda Alpha Landfill does not include any project components or analysis related to the extension of Tonner Canyon Road or the use of Tonner Canyon Road for access to the landfill through the life of this project.

SECTION 3.0
EFFECTS FOUND NOT TO BE SIGNIFICANT

SECTION 3.0
EFFECTS FOUND NOT TO BE SIGNIFICANT

3.1 OVERVIEW

The analysis of the proposed project determined there are a number of environmental parameters that are not expected to incur significant adverse impacts resulting from implementation of the proposed project. This Section summarizes those potential adverse impacts related to the proposed project that were determined in the Initial Study (IS) to be below a level of significance or which could be mitigated to below a level of significance based on mitigation measures. For detailed information regarding this analysis for each environmental parameter, refer to Appendix A (Initial Study). The environmental analysis for each environmental parameter for which the proposed project may or would result in potentially significant adverse impacts is provided in Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance After Mitigation) of the EIR.

3.2 LAND USE AND PLANNING IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed vertical and horizontal expansion of the Olinda Alpha Landfill would not extend beyond the property boundary of the site and, therefore, would not result in the disruption or division of the physical arrangement of an established community. No mitigation is required.

The vertical and horizontal expansion of Olinda Alpha Landfill would not result in development outside the existing landfill boundary. Olinda Alpha Landfill is not in a designated Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) area. No mitigation is required.

3.3 AGRICULTURE IMPACTS FOUND NOT TO BE SIGNIFICANT

There are no existing agricultural preserves on the landfill property and no preserves will be impacted under the proposed project. Therefore, the proposed project will not result in impacts related to the conversion of farmlands listed as Prime, Unique or Farmland of Statewide Importance to non-agricultural uses. No mitigation is required.

The proposed project would not result in the cancellation of any Williamson Act contracts or conflict with any existing zoning for agricultural uses. No mitigation is required.

3.4 POPULATION IMPACTS FOUND NOT TO BE SIGNIFICANT

None of the improvements under the proposed project would entail new residences or extending any major infrastructure (i.e., sewer or water lines, road, etc.) that could support additional development beyond the existing landfill property boundary. Employment associated with landfill operations will be drawn from existing on-site employment. No substantial new employment will be generated by the proposed project that could potentially contribute to additional demand for housing or services in the surrounding area. No mitigation is required.

The proposed project will not result in the removal or demolition of any existing housing. The proposed project would not entail the displacement of a substantial number of people or residences because no housing currently exists on-site or is proposed. No mitigation is required.

3.5 GEOLOGY AND SOILS IMPACTS FOUND NOT TO BE SIGNIFICANT

Some of the soils underlying the Olinda Alpha Landfill site and the horizontal expansion area have a moderate to high shrink-swell potential. Although considered to be expansive soils, the soils at the site would not create a substantial risk to life or property. No mitigation is required.

The vertical and horizontal expansion of Olinda Alpha Landfill does not propose the use of septic tanks. No mitigation is required.

3.6 HYDROLOGY AND WATER QUALITY IMPACTS FOUND NOT TO BE SIGNIFICANT

Olinda Alpha Landfill is approved under the Waste Discharge Requirements (WDRs) issued by the Regional Water Quality Control Board – Santa Ana Region (RWQCB-SA) and is designed to comply with water quality standards and waste discharge requirements. Semi-annual water quality testing at the landfill is conducted for volatile organic compounds (VOC), minerals, total dissolved solids (TDS), potential of hydrogen (pH), electrical conductivity (EC), nitrates and metals. Groundwater is extracted, treated and reused on-site. Any modification of the existing landfill design will require coordination with the Landfill Section of the RWQCB-SA to revise the existing National Pollutant Discharge Elimination System (NPDES) permit and WDRs for Olinda Alpha Landfill in accordance with federal and state requirements for the protection of water quality. No significant adverse impacts are anticipated.

The proposed project does not include any components that would result in groundwater extraction. The horizontal and vertical expansions and associated drainage patterns will channel run-off downstream to the existing on-site detention basins. The reduction in recharge at the horizontal and vertical expansion areas is not anticipated to substantially reduce recharge in the regional groundwater basin. Moreover, the proposed project would not result in significant adverse impacts related to groundwater depletion that would contribute to a net deficit in aquifer volume or a lowering of a local groundwater table.

The proposed project would not substantially alter the existing drainage pattern of the site or area. Under the project, the landfill will continue to operate as a solid waste landfill to approximately 2021. The existing storm water control system consisting of a network of drainage channels, berms, interceptor ditches and sedimentation basins will be extended, as necessary, to control any additional run-off and erosion associated with the proposed project. The existing concrete-lined sedimentation basins are sufficiently sized to accommodate storm water drainage associated with existing and future landfill operations. Collected silt is cleaned out of the sedimentation basins at the end of the rainy season.

The continued operation and expansion of Olinda Alpha Landfill will result in an increase in excavation and grading, potentially causing increases in erosion and run-off. Vertical and

horizontal expansion of Olinda Alpha Landfill will modify the surface hydrology and change stormwater run-off rates on this site. The change in stormwater run-off is not expected to be substantially different from the existing condition and is not anticipated to result in flooding on or off-site. The capacity of the major on-site stormwater control facilities required for the permitted landfill operation do not need to be modified for the expansion project. Off-site discharge will be controlled to only release pre-development condition flows during a storm event. The proposed project will not impact the capacity of existing or planned stormwater drainage systems off-site.

The proposed project would result in the approximately 115-foot vertical and 33-acre horizontal expansion at Olinda Alpha Landfill. The landfill expansion must be designed, operated and monitored to preclude any significant adverse impacts to groundwater resources or water quality. In addition, the vertical and horizontal expansion must be approved under WDRs issued by the RWQCB-SA.

The proposed project does not include the development of housing or structures that would be located in a 100-year flood hazard area.

The proposed project is not anticipated to result in any impacts related to flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami or mudflow.

Although the proposed project will not have significant adverse impacts associated with hydrology and water quality, Sections 5.3 (Hydrogeology and Water Quality) and 5.4 (Surface Water Hydrology) are included in this EIR to provide more details regarding the environmental setting, impacts and mitigation related to hydrology and water quality that would result from implementation of the proposed project. Technical studies related to surface hydrology and water quality are discussed in those Sections.

3.7 TRANSPORTATION AND CIRCULATION IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project is outside the defined airspace of any airport and would not result in changes in air traffic patterns or air traffic levels because the proposed expansion will not generate demand for air passenger or cargo trips. No mitigation is required.

The current access roads used by waste disposal trucks are designed to local jurisdictions' standards and are suitable for this type of use. The proposed project does not include road improvements or the use of vehicles not compatible with public and private access roads serving the landfill. Therefore, expansion of Olinda Alpha Landfill will not result in impacts related to safety hazards from design features or incompatible uses and no mitigation is required.

Emergency vehicles can use the existing private and public roads if necessary to respond to fire, medical or police emergencies. Consistent with the California Vehicle Code and local restrictions, trucks using public roads to access the landfill do not block emergency vehicles and do not block access to adjacent uses. At the landfill, trucks do not queue off the landfill property and, therefore, do not block emergency access in the area. On the landfill property, truck

queuing is managed to ensure that emergency vehicles can access the site, if necessary. No mitigation is required.

Parking for employees and vehicles waiting for inspection or to deposit loads is currently provided on the Olinda Alpha Landfill property. In the event that additional parking is temporarily needed as a result of the proposed vertical and horizontal expansion, it also would be provided on the landfill property. No off-site parking will be required so the proposed project will not result in any impacts related to inadequate parking capacity. No mitigation is required.

Trucks transporting municipal solid waste (MSW) to Olinda Alpha Landfill, including the areas for the proposed expansion, would operate on public roads consistent with laws and regulations controlling vehicle traffic, similar to existing conditions associated with trucks currently accessing the landfill. Alternative modes, including rail, bus, transit, bicycling, carpooling and vanpooling, would not be adversely affected by these truck operations on public roads and no mitigation is required.

Under the proposed project, existing traffic levels to and from Olinda Alpha Landfill would continue for eight additional years, from the current closure date in 2013 to the proposed closure date in 2021. The potential for traffic impacts under the proposed project is discussed in detail in Section 5.5 (Transportation and Circulation).

3.8 AIR QUALITY IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project would not result in an obstruction to the implementation of the 2003 Air Quality Management Plan as overseen by the South Coast Air Quality Management District (AQMD). No mitigation is required.

3.9 NOISE IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project is not located within two miles of an existing public airport and is not within an adopted airport land use plan. Therefore, the proposed project will not result in exposure of people in this area to excessive aviation-related noise levels and no mitigation is required.

3.10 BIOLOGICAL RESOURCES IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project would not impact wetlands or other watercourses subject to regulatory control because none are located on-site. No mitigation is required.

The proposed project is not expected to impact wildlife movement, migration patterns or wildlife corridors. No disturbance along the ridgeline east of the horizontal expansion area is proposed. However, landfill operations may generate dust, noise or light emissions that could potentially disturb wildlife behavior, including possible shifts in the use of the eastern ridgeline by wildlife. The majority of wildlife movement through and near the landfill occurs after dark. Because operations at the landfill cease at dark, no impacts to wildlife dispersal, migration or wildlife corridors will occur and no mitigation is required.

The proposed project would not impact locally designated species. The County of Orange has no officially adopted heritage tree ordinance or policy. Therefore, the proposed project would not result in impacts to locally designated species and no mitigation is required.

Olinda Alpha Landfill is not within an approved NCCP/HCP Reserve System and, therefore, would not impact any NCCP/HCP areas. No mitigation is required.

Section 5.12 (Biological Resources) in this EIR provides discussion regarding the environmental setting, impacts and mitigation related to biological resources that would potentially be impacted by the proposed project.

3.11 LIGHT, GLARE AND AESTHETICS IMPACTS FOUND NOT TO BE SIGNIFICANT

Potential light and glare impacts associated with the proposed project would be the same as existing impacts associated with the permitted landfill. Sources of light at this landfill, including lighting for access roads, parking areas, buildings and security, would not change appreciably under the proposed expansion. Therefore, there would be no impacts related to light and glare associated with the expansion at Olinda Alpha Landfill and no mitigation is required.

Section 5.8 (Aesthetics) in this EIR provides discussion regarding the environmental setting, impacts and mitigation related to aesthetics that would potentially be impacted by the proposed project.

3.12 CULTURAL AND SCIENTIFIC RESOURCES IMPACTS FOUND NOT TO BE SIGNIFICANT

No historic resources have been documented on the Olinda Alpha Landfill property. Therefore, no historic resources are expected to be impacted by the proposed expansion. No mitigation is required.

The proposed project would occur in some areas previously disturbed by landfill operations. No impacts to known archaeological resources would occur. The majority of the proposed expansion area has been surveyed and there are no known archaeological sites within the existing landfill property boundary. No mitigation is required.

During previous landfill operations, rare paleontological specimens have been found. The IWMD provides archaeological/paleontological monitoring services during construction to recover any paleontological resources or specimens that may be discovered in the future. These resources are preserved in accordance with the County of Orange Standard Conditions of Approval that require paleontological monitoring during construction. Potential adverse impacts on paleontological resources will be considered less than significant with the continuation of archaeological/paleontological monitoring services during construction.

The proposed project would occur in some areas previously disturbed by landfill operations. No known human remains would be disturbed by the proposed project. No mitigation is required.

Although the proposed project will not have significant adverse impacts associated with cultural and scientific resources, Section 5.8 (Cultural and Scientific Resources) is included in this EIR to provide more details regarding the environmental setting, impacts and mitigation related to these resources that would result from implementation of the proposed project.

3.13 RECREATION IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project will not affect the local demand for neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. No mitigation is required.

The proposed project does not entail the construction of additional recreational facilities either on or off-site at Olinda Alpha Landfill. Therefore, the proposed project will not affect existing recreation facilities in the project area. No mitigation is required.

Section 5.11 (Public Services) in this EIR provides discussion regarding the planned post-closure use of the existing landfill which would result in the conversion of the landfill property to a passive use regional park. The proposed project will result in the continued operation of the landfill from 2013 to 2021 which will delay the use of the site for recreational use until after 2021.

3.14 MINERAL RESOURCES IMPACTS FOUND NOT TO BE SIGNIFICANT

No known mineral resources are presently or likely to be available on the Olinda Alpha Landfill property. Therefore, the proposed project will not result in impacts related to known mineral resources of possible state or regional value. No mitigation is required.

3.15 HAZARDS IMPACTS FOUND NOT TO BE SIGNIFICANT

The existing landfill design and facilities, including LFG collection and groundwater monitoring facilities, are required for the landfill to operate in a safe and sanitary manner. In addition, there are no existing or proposed schools within one-quarter mile of Olinda Alpha Landfill and no hazardous wastes will be disposed of in this landfill under the proposed project. The proposed project will not result in impacts related to hazardous emissions. No mitigation is required. Although the proposed project will not have significant adverse impacts associated with LFG, Section 5.10 (Hazards) was included in this EIR to provide a more detailed discussion regarding the potential for increase in LFG surface emissions into the atmosphere and subsurface migration under the proposed project.

The Olinda Alpha Landfill property is not listed as a hazardous materials site. The landfill accepts only Class III MSW and implements a hazardous waste exclusion program. No mitigation is required.

The proposed project is not located near an airport and is not affected by any airport land use plan. In addition, there are no private airstrips in the vicinity of the landfill property. Therefore, the proposed project will not result in adverse impacts related to aviation safety hazards for people residing or working in the project area. No mitigation is required.

The designated emergency routes from Olinda Alpha Landfill are through the City of Brea and will not change with the implementation of the proposed project. The proposed project will not affect emergency plans in the area and no mitigation is required.

There is a remote possibility of fire at Olinda Alpha Landfill from combustible refuse, vegetation or litter being ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles. However, this potential risk is addressed in the design and daily operations of this landfill. Continued landfilling under the proposed project is not anticipated to have a significant adverse impact on the occurrence of wildland fires in the area.

The landfill may be subject to surface fires started by burning waste material deposited on the working landfill face. Should this occur, the fire would be limited to the materials deposited prior to the daily application of cover materials, as fire will not generally propagate through cover soil. The Orange County Fire Authority has procedures for the prevention, control and management of fires at waste disposal sites. There are numerous fire control and prevention practices and fire fighting provisions currently in place at Olinda Alpha Landfill. The landfill has a 100,000-gallon storage tank for potable water dedicated to fire protection and a fire hydrant is located near the LFG flaring system. Two water trucks are available on the landfill property for fire fighting purposes. Fire extinguishers are required and are provided on all heavy equipment at the landfill. Internal combustion engines have required OCFA approved spark arrestors. In addition, fire extinguishers are located within 50 feet of the aboveground liquid tanks.

Safety and health hazards such as fires or explosions could occur if LFG containing methane or toxic gases is permitted to migrate into nearby buildings. Further, site engineering staff routinely monitor on-site buildings with an Organic Vapor Analyzer (OVA) for methane. The existing LFG control and monitoring system at Olinda Alpha Landfill would reduce LFG migration and associated potential impacts associated with the proposed project to below a level of significance. No mitigation is required.

The proposed project does not include the development of new or retrofitted stormwater control BMPs. No mitigation is required.

Section 5.10 (Hazards) discusses impacts as they relate to hazardous emissions, hazardous material sites, airport/airstrip location, emergency response plans or emergency evacuation plans, fire, and new or retrofitted storm water control Best Management Practices (BMPs).

3.16 PUBLIC SERVICES IMPACTS FOUND NOT TO BE SIGNIFICANT

The existing police services in the area would be adequate to meet the demand for police protection services under the proposed project. Therefore, the proposed project will not result in adverse impacts related to police services and no mitigation is required.

The proposed project will not adversely impact schools because no population increase is associated with the expansion plan. No mitigation is required.

The proposed project will require some permit processing by the County of Orange. However, the proposed project is not anticipated to adversely affect the County's overall ability to provide permitting services Countywide. The proposed project will not result in an increase in the number of employees at the landfill or other changes which would result in the need for other new or altered government facilities or services such as libraries or jails. Therefore, the proposed project will not result in adverse impacts related to other governmental services. No mitigation is required.

Implementation of the proposed project will not result in a demand for increased public services.

3.17 UTILITIES AND SERVICE SYSTEMS IMPACTS FOUND NOT TO BE SIGNIFICANT

The proposed project would not result in the construction of new or expanded water or wastewater treatment facilities. In addition, the project would not exceed wastewater treatment requirements. No mitigation is required.

As previously discussed in Section 3.6, the project would not result in the need for the off-site construction of new or expanded stormwater drainage facilities. With the development of the proposed project, the existing landfill stormwater collection system that consists of a series of drainage channels, berms, interceptor ditches and sedimentation basins would be improved for the expansion areas as appropriate. This would occur in areas already disturbed by landfill operations and would not result in additional environmental impacts. No mitigation is required.

The proposed project would extend the use period of this landfill. Therefore, the proposed project will result in an increase in the total amount of water needed over time for offices, earthwork, dust control, on-site road construction and other on-site improvements. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of water currently used daily at the landfill. The existing water facilities and supplies are anticipated to be adequate to continue providing water to the landfill over the extended use period of Olinda Alpha Landfill under this proposed project. Therefore, the proposed project will not result in significant adverse impacts related to water treatment and distribution facilities. No mitigation is required.

The proposed project will increase the use period of the landfill and will result in an increase in the total amount of sewage generated over the life of the landfill. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of sewage currently generated daily at Olinda Alpha Landfill. The existing wastewater facilities are anticipated to be adequate to accommodate the additional sewage generated at Olinda Alpha Landfill over the extended use period of the landfill under the proposed project. Therefore, the proposed project will not result in significant adverse impacts related to sewer or septic systems. No mitigation is required.

The proposed project will extend the use period of Olinda Alpha Landfill and will provide additional capacity for MSW. Therefore, the proposed project will not result in adverse impacts to MSW disposal. No mitigation is required.

Implementation of the proposed project will not result in a demand for additional utilities and service systems.

SECTION 4.0
PROJECT DESCRIPTION

SECTION 4.0
PROJECT DESCRIPTION

4.1 PROJECT LOCATION

The project site is within the existing Olinda Alpha Landfill property at 1942 North Valencia Avenue in unincorporated Orange County, near the City of Brea. Figure 4.1-1 shows the location of Olinda Alpha Landfill which is generally bounded by Lambert Road/Carbon Canyon Road to the south and Valencia Avenue to the southwest. Olinda Alpha Landfill is located on the following assessor's parcels: 308-031-3, 7, 8, 9, 14, 15, 17, 22, 30, 31 and 308-021-3, 4, 12, 14.

4.2 ENVIRONMENTAL SETTING

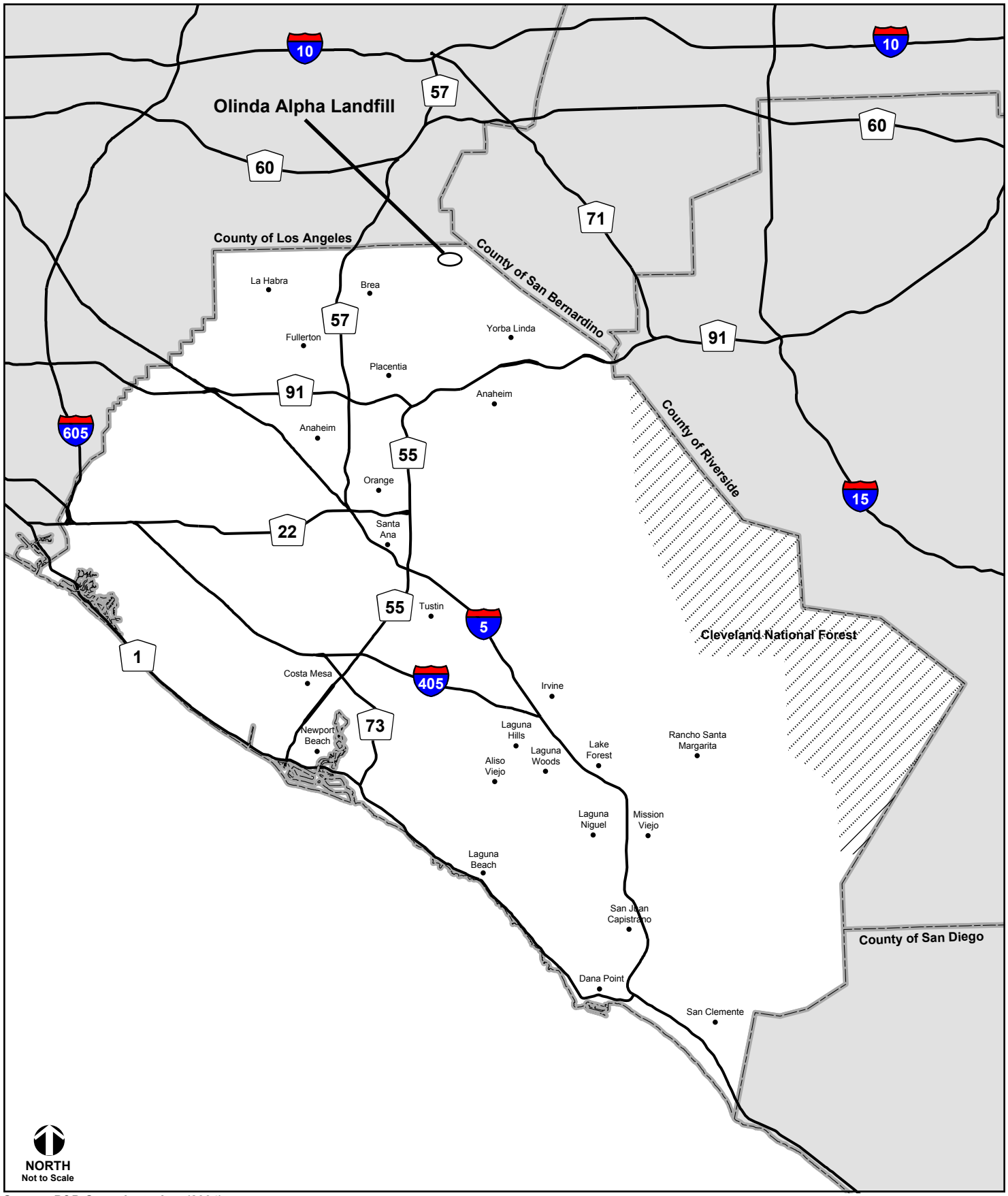
Olinda Alpha Landfill comprises 565 acres with approximately 420 acres currently permitted for refuse disposal. The approximate 33-acre area proposed for horizontal expansion is on a northeast hilly area on the existing Olinda Alpha Landfill property. The landfill is in an unincorporated area of Orange County with a land use designation of 4(LS) Public Facilities (Landfill Site). The landfill is also within the Sphere of Influence of the City of Brea and is designated in the City's General Plan as a Public Facility which allows for the use of this site for municipal solid waste (MSW) disposal. The proposed project is generally consistent with the City's existing General Plan land use designation for the site because the proposed expansion would occur entirely within the existing landfill boundary and would be an extension of the existing MSW disposal activities at this facility.

4.3 HISTORY AND EVOLUTION OF THE PROPOSED PROJECT

4.3.1 REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY

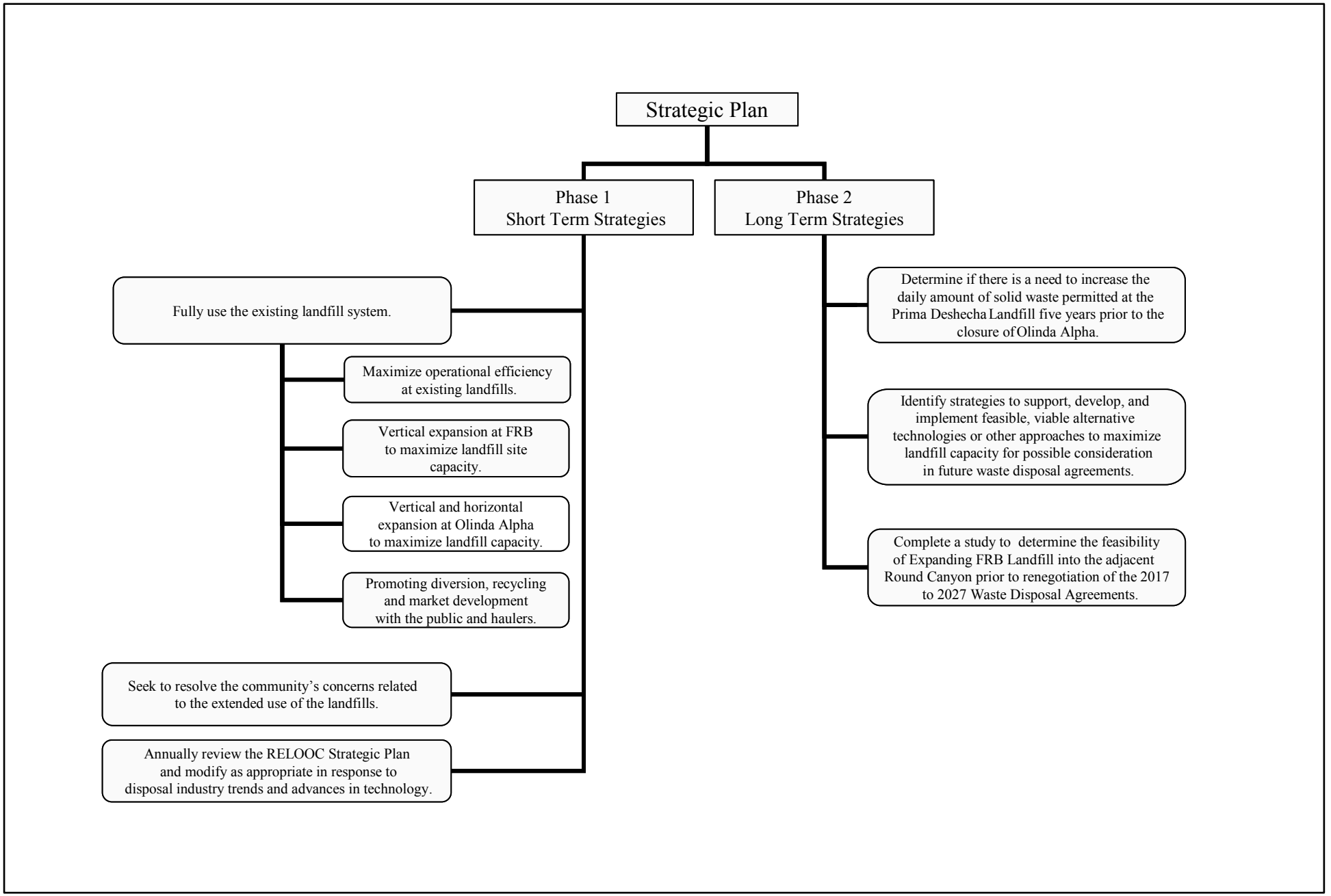
4.3.1.1 Strategic Planning

Strategic planning for MSW needs in Orange County is the responsibility of the County of Orange Integrated Waste Management Department (IWMD). IWMD's mission is "…to meet the solid waste disposal needs of Orange County through efficient operations, sound environmental practices, strategic planning, innovation and technology." The Regional Landfill Options for Orange County (RELOOC) is a short and long term strategic planning project initiated by IWMD in 1998 to address existing disposal system capabilities and future needs, and to develop viable short and long term solid waste disposal options for the County. Following completion of the planning and feasibility phase of RELOOC in 2002, the Orange County Board of Supervisors (BOS) concurred on recommendations to implement a phased approach to RELOOC and directed IWMD to evaluate those RELOOC strategies subject to the California Environmental Quality Act (CEQA). The RELOOC Strategic Plan provides a framework for solid waste management over the next 40 years in the most cost-effective manner, as shown in Figure 4.3-1. The RELOOC Strategic Plan includes a two-phased approach to accomplishing this goal as described below.



Source: P&D Consultants, Inc. (2004).

Figure 4.1-1
Regional Location Map



Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

Figure 4.3-1
RELOOC Strategic Plan Structure Overview

Phase I (short term) strategies include fully using the existing landfill system capacity in Orange County by:

- Maximizing operational efficiency at the three existing landfills.
- Expanding the existing Frank R. Bowerman (FRB) and Olinda Alpha Landfills.
- Promoting diversion, recycling and market development with the public and waste haulers.
- Seeking to resolve community concerns related to the extended use of the three existing landfills.
- Annually reviewing the RELOOC Strategic Plan and modifying it as appropriate in response to disposal industry trends and advances in technology.

Phase II (long term) strategies consist of a series of studies which will:

- Determine if there is a need to increase the daily amount of solid waste permitted at the Prima Deshecha Landfill five years prior to the closure of Olinda Alpha Landfill.
- Identify strategies to support, develop and implement feasible, viable alternative technologies or other approaches to maximize landfill capacity for possible consideration in future waste disposal agreements.
- Complete a study to determine the feasibility of expanding FRB Landfill into adjacent Round Canyon prior to re-negotiation of the 2017 to 2027 Waste Disposal Agreements (WDAs).

The purpose of this Environmental Impact Report (EIR) is to analyze potential impacts of and provide environmental documentation for the implementation of the RELOOC Strategic Plan component to expand Olinda Alpha Landfill, proposed as a Phase I strategy in the Strategic Plan. A detailed discussion of the proposed project based on parameters developed pursuant to the Strategic Plan is provided later in Section 4.5 (Project Description).

The only other Phase I strategy component requiring CEQA analysis is the expansion of FRB Landfill, which will be addressed in a separate EIR when the expansion plan for that site is better defined. A major landslide that occurred at FRB Landfill in early 2002 has required extensive geotechnical investigation, landslide remediation design, biological resource evaluation and coordination/permitting with resource agencies in developing a remediation design for full development of the site. It is anticipated that the CEQA and resource agency approval processes for the FRB Landfill will be lengthy. Because the Olinda Alpha Landfill and FRB Landfill components are independent of each other, a separate EIR will be prepared for the FRB Landfill expansion component of RELOOC Phase I once the full extent of the landslide remediation needs and its effect on the current Master Plan for that landfill are known. To reduce further delays in implementing the overall RELOOC Phase I strategy, the implementation of the Olinda Alpha Landfill expansion is being proposed now.

The Phase II strategies are considered studies and are not subject to CEQA requirements. The Phase II strategies are long term RELOOC program components and, if determined to be feasible as a result of future studies, may be selected for analysis in accordance with CEQA requirements at a later date during the RELOOC 40-year planning time frame.

4.3.1.2 Tonnage Projections for RELOOC

As part of the RELOOC planning and evaluation process, tonnage projections were developed for the RELOOC Feasibility Study (report dated December 2001) which support the total daily tonnage requirements assumed in this EIR for the proposed expansion at Olinda Alpha Landfill. In developing the system configurations for each option analyzed for the RELOOC Feasibility Study time period, a capacity analysis was performed to determine remaining disposal capacity at the three existing Orange County landfills. January 1, 1999 was used as the basis for evaluation of remaining capacity at the existing landfills since the latest topographic maps available for the landfill properties at the beginning of the RELOOC study were October 1998.

Using the remaining capacity as of January 1, 1999, for the existing landfills, a system demand computer model was developed by the RELOOC consultant team to project future tonnages and disposal demand for each of the options evaluated in the RELOOC Feasibility Study. The projected tonnage was based on population projections provided by IWMD, which uses the Center for Demographic Research at California State University, Fullerton (CSUF) statistics for its database. Historical and current tonnage information was also provided by IWMD. Assumptions made for the demand model were:

- All waste is first routed to the Orange County landfill system within limits of daily permits (as applicable for each option) and total capacity constraints until waste cannot be accommodated by the system.
- Projected tonnage disposed was based on projected changes in population and assumes no additional diversion achieved after 1998. Although cities may increase diversion to try to achieve the state's 50 percent mandate, it was conservatively assumed for the RELOOC Feasibility Study that a majority of diversion had been achieved by 1998. Therefore, no increases in diversion were projected beyond the January 1, 1999 baseline for the tonnage estimates.
- Population projections through 2020 were from the Center for Demographic Research at CSUF. Growth rates for years after 2020 were assumed to be equal to the growth rates for the year 2020.
- Importation continues at tonnage levels as of 1/1/99 until 2015 based on the County's existing policy, except for options which have exportation occurring with the Olinda Alpha Landfill closing in 2013, which requires that importation ceases when exportation begins in 2013.
- All County landfills operate 307 days per year.

These assumptions were used in the RELOOC demand model for six initial and five final (R1 through R5) options evaluated for the RELOOC Feasibility Study. The demand model output is available at IWMD headquarters and a summary of the model results for the final five options is provided in the RELOOC Feasibility Study report (Table 3).

Based on these assumptions, the RELOOC demand model projected annual disposal tonnage for each City and unincorporated area in Orange County from 1999 to 2039; and out-of-county import was projected annually through 2013 (if Olinda Alpha Landfill closes in 2013) or 2015 (if Olinda Alpha Landfill does not close in 2015). The demand model projected total system

demand for each year from 1999 to 2039. The model results show the total system demand projected for the year 2021 (the horizon year for this EIR for the proposed expansion at Olinda Alpha Landfill) is 4,062,000 tons. Assuming that the County landfills each operate 307 days per year, the total system daily tonnage requirement is forecast to be approximately 13,500 (rounded) tons per day (TPD) in 2021.

Assuming Olinda Alpha Landfill closes in 2013, as currently planned, with the maximum daily permitted tonnage at the FRB Landfill at 8,500 TPD and at the Prima Deshecha Landfill at 4,000 TPD, the total daily maximum permitted capacity in 2021 would be 12,500. This permitted daily system capacity is approximately 1,000 TPD (13,500 – 12,500 = 1,000 TPD) short of the daily tonnage demand projected in 2021. For the analysis of the proposed project and the alternatives to the proposed project for the Olinda Alpha Landfill expansion, this 1,000 TPD shortfall was assumed.

Refer to Section 6.0 for additional discussion of the No Project Alternative and Alternatives to the proposed project which are based on the above assumptions.

4.3.1.3 RELOOC Planning Process

The RELOOC planning process included a Steering Committee to provide policy guidance for the strategic planning process. The Committee was developed in consultation with the County of Orange Waste Management Commission. Membership in the Steering Committee consisted of representatives from the:

- Orange County community at-large.
- City Managers Solid Waste Working Group (SWWG).
- Landfill Host Cities (i.e., Brea, Irvine, San Juan Capistrano and San Clemente).
- Waste Management Commission.
- League of California Cities (Orange County Division).
- IWMD.
- County of Orange (County Executive Office).

The RELOOC Steering Committee directed the Consultant Team (consisting of landfill engineers, environmental experts and other individuals under contract with IWMD) to evaluate a number of strategic planning options that would meet the short and long term RELOOC goals. Key tasks assigned to the Consultant Team were:

- Identification of available options.
- Capacity analysis.
- Demand analysis.
- Economic analysis.
- Environmental impacts analysis.
- Evaluation (or goal achievement) matrix of options.
- Recommended Strategic Plan.

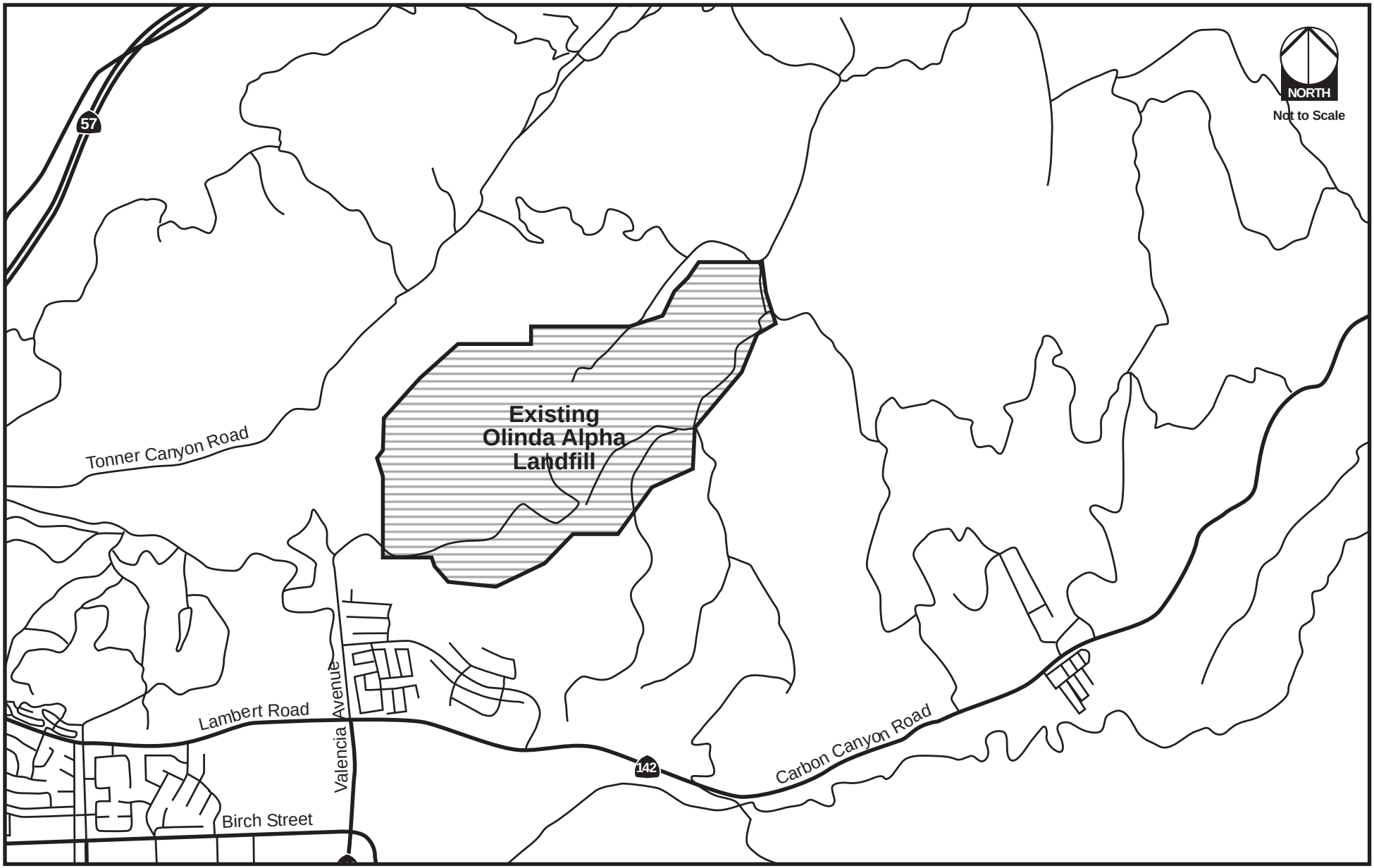
The RELOOC planning process involved extensive community and government agency outreach which was an important element in the evaluation and selection of available options. In the ranking of options, community acceptance was one of five criteria used and was evaluated using a Community Involvement Program (CIP) developed specifically for RELOOC. The CIP and preliminary findings of the RELOOC Feasibility Study Report (FSR) were presented to the Orange County City Managers Association's SWWG. As an outcome of input received from the SWWG and concurrence by the RELOOC Steering Committee, a phased approach to RELOOC developed. The phased approach to RELOOC was presented in a series of meetings and briefings to community groups, City Councils, Chambers of Commerce and the community at large, primarily within the landfill host cities affected by the phased approach. These meetings were conducted between August 23, 2001 and October 18, 2001. Based on recommendations from the community, the SWWG and subsequent action by the RELOOC Steering Committee, a phased approach for the RELOOC Strategic Plan, as previously discussed, was selected by the County BOS for CEQA analysis in May 2002.

In September 2002, a Notice of Preparation (NOP) for EIR 588 was circulated for public review that identified the RELOOC Phase I strategies. That NOP described proposed vertical and horizontal expansions of Olinda Alpha and FRB Landfills. Based on preliminary information on the complex geological conditions at FRB Landfill available at that time, scoping meetings were held in September 2002 to receive public comments on the NOP for EIR 588. Since then, extensive work has occurred at the FRB Landfill to develop a landslide remediation design and, as previously discussed, the approval process for that project is anticipated to be lengthy. To not further delay the implementation of the Olinda Alpha Landfill expansion component of RELOOC Phase I, this EIR 588 is being prepared separately from an EIR to be prepared at a future date for the FRB Landfill expansion component of RELOOC Phase I. Each of these landfill expansion projects is independent of, does not alter the need for, or impacts the other projects.

4.4 CURRENT SITE STATUS

4.4.1 OPERATIONS

Olinda Alpha Landfill opened in 1960. The landfill serves northern Orange County and also receives MSW from Los Angeles, San Bernardino and Riverside Counties. Access to the landfill is via Valencia Avenue as shown in Figure 4.4-1. Operations as performed under the current landfill operating permits and as described here will remain the same for the proposed expansion. The landfill is open Monday through Saturday from 6:00 A.M. to 7:00 A.M. for transfer trucks only and 7:00 A.M. to 4:00 P.M. for all commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is limited to Orange County residents. Only MSW is accepted at the landfill, although tires are accepted for removal by a recycling contractor. No special wastes are accepted at the landfill. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted at this landfill.



Source: Bryan A. Stirrat & Associates (2004).

Figure 4.4-1
Olinda Alpha Landfill Location Map

Access to Olinda Alpha Landfill would remain unchanged under the proposed expansion, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions.

Importation of MSW from Los Angeles, San Bernardino and Riverside Counties will cease in 2015 if the landfill closure date is extended as proposed. At about that time, Olinda Alpha Landfill will need to begin importing cover material if the landfill closure date is extended. It is anticipated that the truck trip reduction that occurs with the cessation of MSW importation at Olinda Alpha Landfill will offset the increase in truck trips required for the transport of cover material. This is based on IWMD records which indicate that an average of approximately 100 trucks per day enters the site carrying imported waste. IWMD estimates their annual daily cover requirements (assuming a 5:1 refuse-to-soil ratio) at approximately 480,000 cy per year or approximately 1,565 cy per day (based on 307 operational days per year). Dirt hauling trucks will average approximately 16 cubic yards of soil per trip. Therefore, it is anticipated that approximately 98 dirt hauling trips per day (1,565 cy/day ÷ 16 cy/trip = 97.8) would occur over the 307 operational days per year to accommodate the landfill needs. The 98 soil truck trips are about equivalent to the 100 refuse import truck trips into the site.

Olinda Alpha Landfill is a deep canyon, cut and cover facility where the majority of MSW is brought to the site by commercial haulers. To determine the tipping fees, trucks are weighed by scales before entering the facility and are then directed to a designated area of the landfill for waste disposal. IWMD heavy equipment operators use compactors, bulldozers and large earthmovers to push and compact waste for ultimate burial and daily covering with soil or an approved alternative cover material.

Upon acceptance of waste for disposal at the scale house, the fee collector directs the haulers to the working face of the landfill. Signs are posted along the on-site access road to guide customers to the unloading areas. Commercial vehicles are generally directed to an unloading area which is separate from that used by private vehicles.

The working face for the commercial refuse trucks is approximately 200 feet wide, which is sufficient to accommodate unloading of waste during an operating day. This unloading area is generally maintained at the toe of the working face so that wastes can be immediately spread and compacted. Small private vehicles are directed to a separate unloading area located away from the commercial vehicle unloading area. Waste unloaded in the area designated for private vehicles is deposited directly onto the deck area. This unloading area varies in size throughout the day depending on the number of private vehicles using the site. Periodically, throughout the day, refuse disposed in this area is pushed to the working face.

Once customers have disposed of their refuse at one of the unloading areas (e.g., commercial or public), a bulldozer pushes the waste to the working face. The refuse is then spread over the working face in about two-foot thick layers. The working face is sloped to 3:1 or 4:1 (horizontal to vertical) to achieve maximum compaction. A compactor or bulldozer then makes repeated passes over the working face to thoroughly compact the refuse. All refuse is spread and

compacted in this manner to eliminate voids in the daily refuse cells to inhibit vector propagation and maximize capacity.

At Olinda Alpha Landfill, the canyon fill methodology is used for refuse placement. Figure 4.4-2 presents a typical landfill operation. Under this methodology refuse is typically placed in lifts up to 20-feet high. Each lift is made up of numerous cells and generally consists of 19-feet of refuse topped with one foot of compacted soil cover. No waste is left uncovered at the end of the working day. Daily refuse cells are built in this manner repeatedly across the landfill, up to the desired grades.

Olinda Alpha Landfill complies with all federal, state and local requirements for operation of a Class III Sanitary landfill. Site staff conduct daily inspections to ensure that the site is in compliance with all the permit conditions imposed by regulatory agencies having jurisdiction on landfills. These permitted conditions include specific procedures involving fire, leachate, dust, vector, bird, noise and odor control. Following is a brief description on how these items are controlled as part of ongoing operations at the Olinda Alpha Landfill.

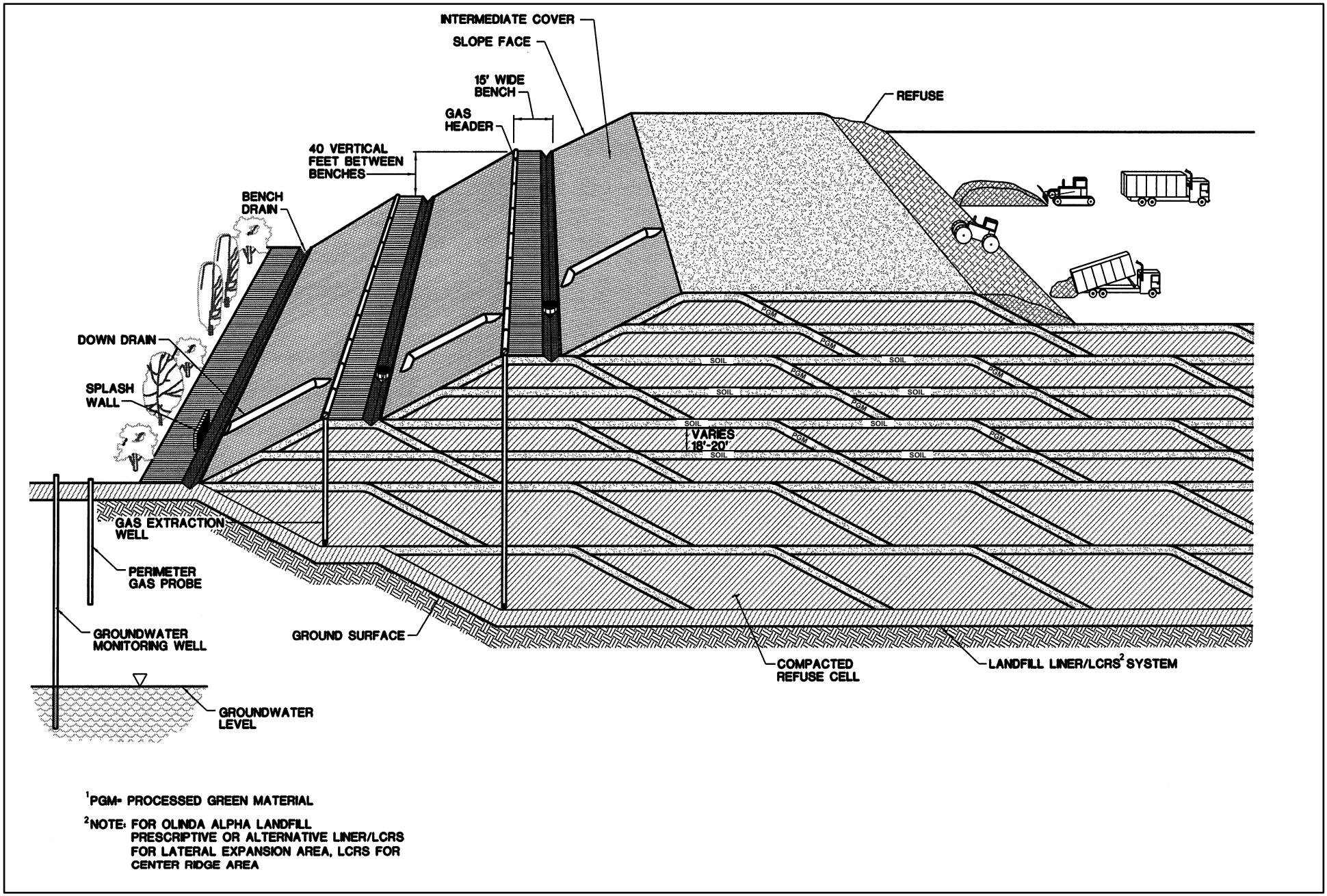
4.4.1.1 Fire Control

A potable water 100,000-gallon storage tank, an 8-inch diameter dedicated fire protection line with fire hydrant near the flaring system, fire sprinklers in all buildings and two water trucks are available at the site at all times for fire-fighting purposes. In the future, IWMD plans to install a fire protection pump that will provide 1,500 gallons per minute (gpm) fire flow at adequate residual pressure as required by the Orange County Fire Authority (OCFA). In addition, all County vehicles at the landfill are equipped with portable fire extinguishers for suppression of minor fires. Fire extinguishers are required on all heavy equipment. Internal combustion engines are required to have OCFA approved spark arrestors. Flammable debris is removed from heavy equipment on a daily basis. A fire extinguisher is also located within 50 feet of each aboveground, flammable liquid tank.

Any fires are immediately reported to the OCFA. Permits to dispense and store flammable and combustible liquids are obtained from the OCFA. Internal access roads on the landfill property are cleared of grass and brush 20 feet on each side of the road. Compacted daily cover limits the oxygen available for combustion within the refuse prism. Daily cover also creates individual cells that will confine a fire to a relatively small area. In the event a fire does start, fires are extinguished immediately and are covered with earth which is stockpiled on-site.

4.4.1.2 Leachate Control

Leachate is liquid which passes through a landfill, coming in contact with disposed wastes and possibly absorbing contaminants. To minimize leachate generation, IWMD maintains proper grading on the landfill decks to ensure positive drainage and to eliminate ponding, provides adequate daily and interim cover on refuse fills to minimize any run-off infiltration, and installs and maintains adequate drainage and erosion controls (interim and permanent) around active and completed areas. Routine inspections are conducted and any suspected seeps are investigated and mitigated. The center ridge area is equipped with a leachate collection system further described in



Source: Bryan A. Stirrat & Associates (2004).

Figure 4.4-2
Typical Landfill Operations

Section 4.5.3.1. The leachate collected is hauled off-site for proper disposal.

4.4.1.3 Dust Control

The Olinda Alpha Landfill dust control program consists of asphalt-paving of the main internal haul roads; watering and proper maintenance of haul roads; water spraying of soil stockpiles; applying water or planting temporary vegetation on intermediate soil cover; and planting and maintaining a vegetative cover on completed fill and excavation slopes. Fugitive dust control measures are implemented in compliance with a site-specific South Coast Air Quality Management District (SCAQMD) Rule 403 compliance plan which is reviewed and updated on an annual basis.

4.4.1.4 Vector and Bird Control

Refuse compaction and daily cover effectively prevent the propagation of vectors (i.e., insects, rodents) on-site. The Orange County Vector Control District has been monitoring for insect and rodent infestation at County operated landfills for several years. To date, no nuisance or health-related problems have been found. Cracker shells and whistles are used to control sea gulls.

4.4.1.5 Noise Control

Site operations are conducted in compliance with California Occupational Safety and Health Administration (Cal-OSHA) regulations. Noise levels of on-site equipment are controlled by installation and proper maintenance of mufflers on all motorized vehicles. Site personnel are provided with earplugs to reduce impacts from continued exposure to on-site noise levels.

4.4.1.6 Odor Control

Odors from refuse are primarily controlled by the operation of a comprehensive landfill gas (LFG) collection and control system. Odors are further controlled by the daily application of a minimum of six inches of soil cover and/or alternative daily covers (ADC) placed over the refuse. Intermediate cover is applied as soon as possible on areas required per Title 27. In addition, the active working face is contained to as small an area as practicable to help control odors from the waste disposal operation.

4.4.1.7 Litter Control

The primary cause for litter around the landfill is wind, which at times carries refuse (primarily plastic bags and paper) away from the tipping area and from vehicles transporting wastes to the site. Litter is collected weekly from outside the perimeter of the landfill site and along the main access route (Valencia Avenue) leading to the landfill. Additional help in collecting litter from outside the landfill perimeter is available from work crews assigned to work under the jurisdiction of the Maintenance Crew Supervisor at the landfill. Crews assigned to pick up litter are either inmates or laborers from the work release program.

Litter on the inside perimeter of the landfill is collected on an as-needed basis. The Site Supervisor and Maintenance Crew Supervisor coordinate litter pick up on the landfill property. Portable fencing is used around the periphery of the active disposal area to help contain litter within the site. During severe Santa Ana wind conditions, a vacuum truck that vacuums the bulk litter from the fences is rented and used. A contract for this equipment is being pursued to assure that the vacuum truck is available as needed. All vehicles entering the landfill are required to have covered loads so as to reduce flying litter along the roads leading to the landfill.

4.4.2 REGULATORY CONTROLS

Landfill operation in California are highly regulated and monitored by federal, state and local agencies. As the owner and operator of the Olinda Alpha Landfill, the County of Orange must comply with the applicable California Code of Regulations (CCR) (primarily Title 27) and the Code of Federal Regulations, Title 40 (CFR), Parts 257 and 258 (Subtitle D). Olinda Alpha Landfill is a Class III landfill permitted for the disposal of non-hazardous MSW. State law requires that landfills operate under the various regulatory requirements of the California Integrated Waste Management Board (CIWMB) that exercises its authority through the approval of Solid Waste Facilities Permits (SWFPs) issued by a Local Enforcement Agency (LEA). The LEA for Olinda Alpha Landfill is the County of Orange Health Care Agency, Environmental Health.

The Regional Water Quality Control Board-Santa Ana Region (RWQCB-SA) regulates landfill operations and designs to ensure protection of surface water and groundwater. The RWQCB-SA exercises its authority through issuance of Waste Discharge Requirements (WDR) and National Pollutant Discharge Elimination (NPDES) permits. The SCAQMD regulates landfill operations related to LFG emissions, subsurface LFG migration and fugitive dust control for Orange County landfills. Environmental monitoring of air, LFG and groundwater is conducted at all Orange County landfills to detect LFG migration or groundwater contamination.

Although the CIWMB has primary oversight and regulatory responsibilities for Olinda Alpha Landfill and has designated the County of Orange Environmental Health Care Agency, Environmental Health as its LEA, Olinda Alpha Landfill is also required to comply with other laws enforced by agencies at the federal, state and local regulatory levels. These agencies include the United States Environmental Protection Agency (USEPA), United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), OCFA and the Orange County Resources and Development Management Department (RDMD). Continued adherence to all applicable laws and regulations for continuing landfilling under the proposed project would be required as part of project approval and operating conditions.

4.4.3 CAPACITY OF OLINDA ALPHA LANDFILL

A variety of factors are used to determine landfill capacity including total air space, refuse volume, liner volume, refuse-to-soil ratio and other factors. Based on these factors, IWMD's records show that the current permitted remaining refuse capacity for Olinda Alpha Landfill was 23.9 million tons as of June 30, 2003.

The SWFP permitted daily tonnage limit for Olinda Alpha Landfill is 8,000 tons per day (TPD) of MSW. However, a Memorandum of Understanding (MOU) between the County and the City of Brea limits daily MSW disposal to an annual average of 7,000 TPD.

A number of landfill agreements and permits currently are in place with Orange County cities, waste haulers and regulatory agencies responsible for oversight of the County's landfills. In addition to those regulatory agency permits and city agreement described above, the County also has ten-year WDAs with contract cities that are subject to negotiation for renewal by June 2004. Franchised haulers and Districts also have WDA's that are subject to negotiation. The negotiations for renewal will need to be extended because the future County landfill system will not have been defined by June 2004. Approval of the Olinda Alpha Landfill expansion is a key component of the future system definition required for negotiation of WDAs for an additional ten-year period.

4.4.4 EXISTING WASTE DIVERSION PROGRAMS

In 2003, Olinda Alpha Landfill received approximately 41 percent of all the waste disposed at the three landfill system operated by the IWMD. Waste diversion activities at Olinda Alpha Landfill include a salvage program which recovers metals, large appliances and other reusable items; a tire recycling program; and a green waste reuse program that uses processed green material for erosion control on landfill slopes or as ADC on working face.

The most significant waste diversion that occurs within the County landfill system is that approximately 75 percent of the County's waste stream is processed at Material Recovery Facilities (MRFs) by the franchised waste haulers in the County. MRFs remove all possible recyclables prior to landfilling the residual waste. With this assistance, the CIWMB currently places the overall waste diversion rate for the County of Orange at approximately 42 percent of the total waste stream.

4.5 PROJECT DESCRIPTION

4.5.1 PURPOSE OF THE PROJECT

The RELOOC effort is a long range strategic planning program initiated by IWMD. The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long term solid waste disposal options for the County. As part of that endeavor, the County is considering a number of short term improvements to existing MSW landfills operated by IWMD. The proposed project includes an expansion of the existing Olinda Alpha Landfill to help meet the County's short term solid waste disposal needs.

This EIR analyzes the potential environmental impacts associated with the continued operation of Olinda Alpha Landfill from 2013 to the estimated horizon year 2021. The potential environmental impacts associated with the current Olinda Alpha Landfill operations through 2013 were analyzed in the Final EIR for the North Orange County Landfill and Alternatives Technology Study (NOCLATS), which was certified by the BOS in 1992.

The landfill will continue to accept no more than a maximum daily permitted tonnage of 8,000 TPD and an annual average daily tonnage of 7,000 TPD. In addition, the landfill will continue to accept an average of approximately 3,000 to 4,000 TPD of exempt commodities which include dirt, asphalt and green waste.

4.5.2 PROJECT MODIFICATIONS

The proposed project includes both a vertical and a horizontal expansion of Olinda Alpha Landfill within the existing landfill property. No change in the landfill property boundary is proposed. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (AMSL) to a maximum of 1,415 feet AMSL, or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications on the northeast part of the existing landfill property. This modification would expand the existing refuse footprint an estimated 33 acres within the existing property boundary of Olinda Alpha Landfill. The extent of the lateral (horizontal) expansion will be determined after additional geotechnical field data is obtained and detailed slope stability analysis is conducted prior to construction. Parts of the proposed horizontal expansion would be in areas that have already been disturbed by landfill operations. Figure 4.5-1 shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 4.5-2 shows the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project. The expanded landfill would ultimately accommodate disposal of an additional 25.7 million cubic yards or 14.2 million tons (MT) of MSW assuming a 5:1 refuse-to-soil ratio (which IWMD has field verified) and 1,333 lb/cy refuse density. This additional capacity would extend the life of the Olinda Alpha Landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, approved landfill elevations and existing disposal technologies. The proposed project would not result in any increase to either the maximum daily permitted tonnage or the annual average daily tonnage limits for this landfill.

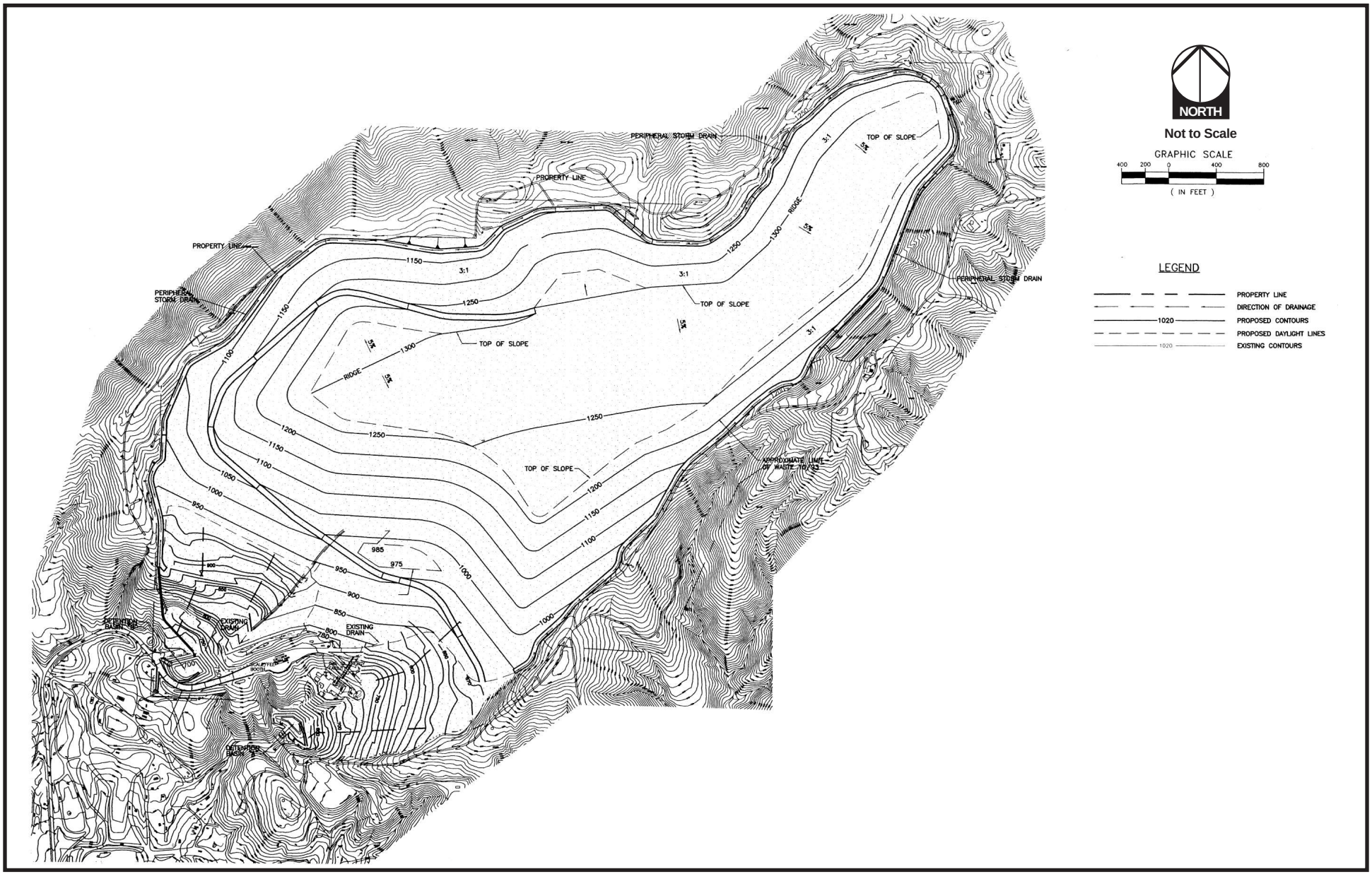
4.5.3 ENVIRONMENTAL PROTECTION ELEMENTS

The design for landfill operations includes a number of environmental protection elements which respond to applicable local, state and federal regulations. These elements include compliance with surface and groundwater monitoring and protection requirements, and air and LFG monitoring and protection requirements. These controls are described in the following sections.

4.5.3.1 Groundwater Protection Systems

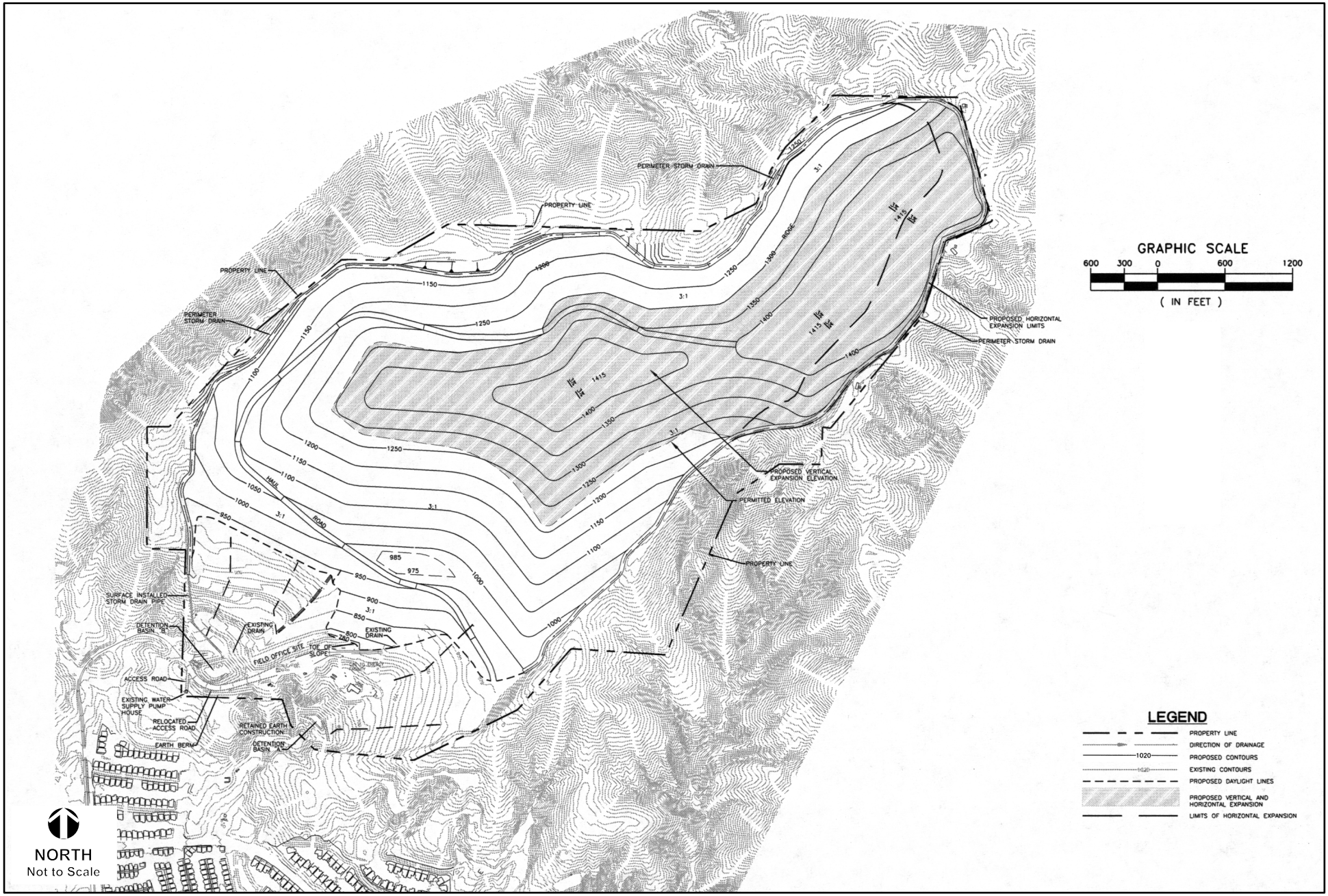
Leachate is liquid which passes through a landfill, coming in contact with disposed wastes and possibly absorbing contaminants. The sources of moisture in a landfill may include rainfall which infiltrates the surface cover, moisture in the refuse, and perched groundwater in contact with the bottom of an unlined landfill.

Landfill regulations minimize the production of leachate by reducing the potential for infiltration. Infiltration reduction is accomplished by prohibiting disposal of liquid wastes in the landfill, effective drainage management which diverts surface water flows away from the landfill, placement of a leachate collection system at the bottom of the landfill, and placement of daily,



Source: Bryan A. Stirrat & Associates (2004).

Figure 4.5-1
Final Grading Plan (Permitted - 1996)



Source: Bryan A. Stirrat & Associates (2004).

Figure 4.5-2
Olinda Alpha Landfill Proposed Horizontal and Vertical Expansion

intermediate and final cover. Figure 4.5-3 presents typical drainage and leachate controls for a landfill.

Drainage improvements for the Olinda Alpha Landfill include perimeter storm drain channels around the fill areas (see perimeter storm drain shown on Figure 4.5-2), down drains on the slopes and desilting basins. Final storm drain improvements are designed to accommodate flows from a 24-hour, 100-year storm event. Two detention/desilting basins have been constructed at Olinda Alpha Landfill to meet stormwater detention requirements for ultimate development of this landfill.

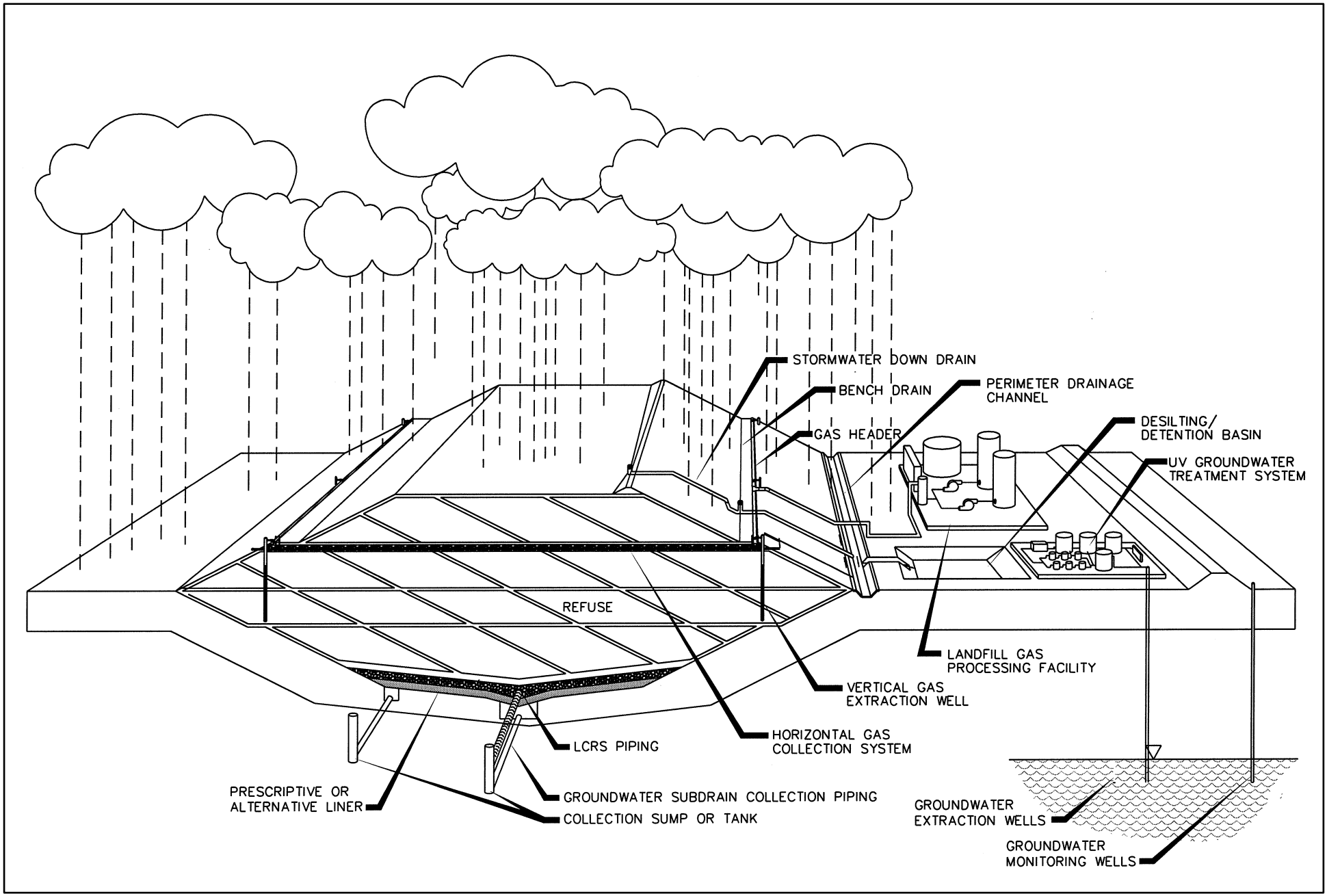
Olinda Alpha Landfill was not initially constructed with a liner or leachate collection and removal system (LCRS), because landfill operations at this landfill were initiated before the 1984 adoption of the CCR Title 23, Chapter 15 (now Title 27) which established standards for leachate control. However, an LCRS was installed as part of the excavation of the center ridge and previous vertical expansion of the landfill. The LCRS includes approximately 4,300 feet of high density polyethylene (HDPE) lined trenches, backfilled with drainage gravel where a perforated four-inch HDPE pipe is embedded, and wrapped in geotextile. The LCRS terminates at the southern end of the center ridge excavated area into a HDPE-lined leachate sump. When leachate in the sump reaches a certain level, a submersible pump in the sump automatically pumps the leachate into an above ground 10,000-gallon storage tank installed within a secondary containment structure. This water is currently and will continue to be hauled and disposed off-site until IWMD evaluates and selects a cost-effective disposal alternative that is approved by the exempt commodities.

The existing groundwater monitoring and control/treatment system at Olinda Alpha Landfill was constructed as a condition of the Waste Discharge Requirements issued by the RWQCB-SA. The system consists of 16 groundwater monitoring wells, 15 groundwater extraction wells and an UV/ozone treatment system. The extraction wells are located at the toe of the Olinda and Olinda Alpha canyons and are part of a Corrective Action System (CAS) to treat landfill impacted groundwater. Some of the groundwater monitoring wells are used to determine the effectiveness of the CAS at this landfill.

In accordance with Title 27, new areas to be landfilled will be underlain by a liner or an alternative to the prescriptive liner and an LCRS. For the development of the estimated 33-acre horizontal expansion, a liner or alternative will be designed which meets the requirements of 27 CCR, Section 20330 and would be approved by the RWQCB-SA.

4.5.3.2 Air Quality Protection Systems

LFG in the fill area is currently collected by an active LFG extraction system of horizontal collection piping and vertical wells. The LFG is piped to the existing flare station and a gas-to-energy plant. As the landfill continues to receive refuse, the system will be expanded through the installation of both horizontal collection piping and vertical wells connected to the existing flare station and gas-to-energy plant.



Source: Bryan A. Stirrat & Associates (2004).

Figure 4.5-3
Typical Landfill Drainage and Leachate Controls

Collected LFG will continue to be converted to electricity with additional flares installed as back-up as capacity requirements dictate. Some minor grading of the area may be necessary to create pads for additional flares and piping. Additional headers and extraction wells would be required to transport LFG from newly developed areas to the existing flare station.

As LFG flows through the LFG collection system, it cools and moisture condenses, resulting in a liquid called condensate. Condensate is separated from the LFG and is currently collected in tanks and then injected into the flares where it is thermally destroyed.

The IWMD has provided for energy recovery as an alternative to continued flaring of LFG at Olinda Alpha Landfill. A gas-to-energy plant has been designed, built and is currently being operated by GSF under a lease with the County. At closure, the site will still require a flare station and/or a LFG utilization facility until LFG is no longer produced by the landfilled waste.

4.5.4 PROJECT PHASING

The proposed expansion of Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill property at once. Operations in the vertical and lateral expansion areas would continue as before with the incremental development of waste cells across the deck in 20-foot lifts from south to north and west to east as further described in Section 4.4.1. The lateral expansion would occur before the vertical expansion, prior to reaching the existing permitted elevation of 1,300 feet AMSL. As filling operations approach the lateral expansion area elevations, the lateral expansion areas would be lined and refuse filling would continue across the deck.

On-site soil to be used for daily cover, road construction and other related uses is available at the Olinda Alpha Landfill through 2015. The site currently accepts dirt as an exempt commodity and continues to stockpile soil on-site for future cover use. When on-site soil for cover is depleted at Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to occur in 2015 and is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015 (see further discussion in Section 4.4.1). Fill and cover techniques at the landfill under the expansions would be similar to the methods currently employed. Waste would be deposited, compacted and covered daily using appropriate landfilling methods.

The final cover system for the entire landfill site will be constructed in accordance with regulatory requirements and an approved Final Closure Plan. The current final cover design for the deck and slope areas of the landfill is planned to consist of a two-foot foundation layer comprised of random soils and a minimum one-foot low-permeability layer of compacted fine grained soils, which will yield a permeability of 1×10^{-6} cubic meters per second (cm/sec) or less. The vegetative layer depth would vary for the deck and slopes for landscaping purposes. The deck would have a two-foot thick vegetative layer and the vegetative layer on the slope areas would vary from two to five feet in thickness.

The final cover design for the deck and slope areas for any lined portion of the landfill expansion would meet Title 27 requirements. The final cover for the entire site will meet or exceed

regulatory requirements at the time of closure of the site. The final cover design for the site will be determined in the Final Closure Plan which would be developed two years prior to closure. A cover design to support a passive use regional park use, which is the currently planned post-closure use, will be developed as part of the Final Closure Plan. At that time, the IWMD will evaluate new technologies that may support this type of end use.

4.5.5 WASTE COMPOSITION

The waste composition at Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Wastes received at the Olinda Alpha Landfill consist of non-hazardous residential, commercial and industrial solid waste and are classified by 27 CCR as Class III wastes. Typical residential non-hazardous waste includes household refuse, tree and lawn clippings, leaves and brush, scrap lumber and metal, appliances, furniture, wood chips, plastic containers, newspapers, cardboard and glass containers. Commercial and industrial waste typically includes food wastes, paper, corrugated cardboard, plastic, rubber, glass, mixtures of concrete, asphalt, wood, steel, brick and block. Inert wastes such as asphalt and concrete are received at Olinda Alpha Landfill and are used for the construction of a wet weather deck area and for maintenance of the internal roads on the landfill property. Autoclaved (sterilized) medical wastes are also accepted for disposal at the Olinda Alpha Landfill. The autoclaved medical waste is combined with the other Class III wastes at the working face.

The IWMD hazardous waste screening program includes monitoring refuse loads for hazardous wastes by an inspector as each load is unloaded at the working face. The site's load check program also involves the random selection of commercial refuse vehicles at the scale house, which are then directed to a designated area for waste load inspection. This load check program involves spreading refuse from the load out in the designated area and visually inspecting for hazardous materials. Vehicles identified as carrying prohibited wastes (i.e., hazardous materials, liquid wastes and other non Class III wastes) are rejected. Hazardous wastes that are segregated from the wastes through the load check program or are found at the working face are placed in a temporary hazardous storage area. This area is specifically designed for hazardous material storage with secondary containment to provide a safe, convenient location for storing wastes discovered through the hazardous waste screening programs. On-site haul roads are provided to access this area. Waste oils and lubricants generated by on-site equipment maintenance activities are stored in the equipment maintenance area. These waste oils as well as other unacceptable wastes are stored on-site for a maximum of 90 days. These wastes may be removed earlier if a sufficient quantity has been collected to make a hazardous waste pick-up cost effective. In no instance are hazardous wastes stored on-site for more than 90 days.

Salvaging operations are conducted at Olinda Alpha Landfill in compliance with requirements of local, state and federal agencies. The County currently contracts with a private company to recycle/recover materials. The agreement includes a scope of work identifying the items that can be salvaged at the landfill. Salvaged materials include all types of metals, white goods (e.g., refrigerators, washers), mattresses, wood and other salvageable items. The materials are stored in separate roll-off containers or stockpiled on the ground in a storage area. The storage of salvaged materials is limited to a duration that will not result in health or fire problems. The storage containers are emptied or removed as needed. Salvaged materials are kept away from

disposal operations.

4.5.6 OTHER PROJECT FEATURES

The proposed project may require that additional landfill operations, support and maintenance buildings and structures be constructed at Olinda Alpha Landfill and may include additional LFG control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Existing employees would continue to perform landfill operations including administration, landfill cover operations and other landfill related operations. The number of pieces of and types of equipment used at Olinda Alpha Landfill are also proposed to remain unchanged. The daily operating schedule at Olinda Alpha Landfill would remain unchanged after implementation of the proposed project.

The existing surface water drainage systems, LFG collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate the proposed expansion of Olinda Alpha Landfill.

4.5.7 DISCRETIONARY APPROVALS

The principal agency having jurisdiction over the proposed project is the County of Orange because the project site is located in an unincorporated area of Orange County. However, the proposed project is also in the City of Brea's Sphere of Influence which will require renegotiation of the existing Memorandum of Understanding (MOU) between the City of Brea and the County of Orange to allow the disposal of MSW over a longer period of time, as a result of the additional capacity that is provided under the proposed project.

In addition to the County of Orange and City of Brea, other public agencies that may also have oversight over the project or may be responsible for issuing subsequent permits necessary to implement the proposed project are identified in Table 4-1.

4.6 PROJECT OBJECTIVES

The objectives for the proposed expansion of Olinda Alpha Landfill were derived from the RELOOC study goals and objectives and the RELOOC planning process. To better understand the project objectives, it is important to know how the expansion of Olinda Alpha Landfill fits in the County's strategic planning for solid waste disposal and management. As discussed earlier in this Section, the RELOOC Strategic Plan involves short and long term phases. One of RELOOC's stated objectives is:

> "To have a feasible balanced and flexible 40-year plan that addresses the County's solid waste disposal needs approved and ready for implementation by the year 2004 (when negotiations begin for the next term of the Waste Disposal Agreements)."

TABLE 4-1
LIST OF POTENTIAL RESPONSIBLE AGENCIES

Agency	Approval/Permit
Federal Agencies	
United States Environmental Protection Agency	New Source Performance Standards (NSPS) monitoring and reporting requirements. Hazardous Waste Generator Exclusion Program.
State Agencies	
California Integrated Waste Management Board	Revision of the existing Solid Waste Facility Permit (SWFP).
Regional Agencies	
Regional Water Quality Control Board - Santa Ana Region	Storm Water Management Plans. Revision of the existing Waste Discharge Requirements (WDR). National Pollution Discharge Elimination System (NPDES) Permit.
South Coast Air Quality Management District	Permits to Construct Expanded Gas Control Systems. Permits to Operate Expanded Gas Control Systems.
County Agencies	
Local Enforcement Agency (Health Care Agency)	Revision of the existing SWFP.
County of Orange Board of Supervisors	Certification of the Final EIR.
Orange County Fire Authority	Fuel Modification Plan and Program Fire Break Roads.
County of Orange Resources and Development Management Department	Grading/Miscellaneous Permits.

Therefore, the proposed expansion of Olinda Alpha Landfill would accomplish both broad County objectives as they relate to County-wide solid waste management and specific objectives relating to Olinda Alpha Landfill as these are integrally related. One of the Phase 1 Strategies of RELOOC is the vertical and horizontal expansion at Olinda Alpha Landfill. The WDAs with the cities in Orange County, franchised haulers and Districts are based on systemwide capacity of landfills in Orange County including Olinda Alpha Landfill.

The project objectives for the proposed expansion at Olinda Alpha Landfill are:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.

- Ensure that the County's near term waste disposal needs are met.

- Maximize capacity of the existing Olinda Alpha Landfill.

- Maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees

- Maintain efficient, cost effective and high quality IWMD operations.

- Minimize adverse environmental impacts associated with solid waste disposal.

4.7 RELATED PROJECTS

4.7.1 WASTE CHARACTERIZATION STUDY

In addition to the RELOOC Strategic Plan, the IWMD is conducting a Waste Characterization Study (WCS) to identify type, quantity and recycling potential of self-haul waste entering Orange County landfills, the jurisdiction of origin. This study will allow IWMD to better understand wastes currently deposited at the three landfills and to potentially identify further opportunities for recycling rather than disposal as waste at landfills. Should the WCS identify these types of recycling opportunities, it is anticipated that these opportunities would be implemented at the three existing landfills, including Olinda Alpha Landfill. Although increased recycling would be expected to beneficially reduce the total waste deposited in Orange County landfills, it is not expected to substantially reduce the need for increased landfill capacity as proposed in the RELOOC Strategic Plan or under the Olinda Alpha Landfill proposed expansion. The WCS is described in more detail in the following Section.

4.7.1.1 Waste Characterization Study of Three Active Landfills

The IWMD'S WCS targets the residential and commercial self-haul waste generator sector entering the three Orange County landfills (Olinda Alpha, FRB and Prima Deshecha) for two time periods: during spring/summer 2003 and winter 2003/04. The self-haul waste stream includes businesses such as landscaping, demolition, construction, roofing and clean-up companies as well as residents cleaning out garages, homes or yards. Commercial roll-off box (ROB) waste is also included in the scope of the study.

The information in the WCS will be used by the County, local jurisdictions, facility operators and solid waste haulers to:

1. Identify the material types and subtypes and quantities of waste in the self-haul waste stream to determine what materials have the potential to be recycled.

2. Measure the effectiveness of current waste diversion programs and practices.

3. Plan future waste diversion programs.

4. Design future waste management facilities.

5. Determine waste disposal fee structures.

Generally, the study will include, but not be limited to, the following elements:

- Random waste sampling of all residential and commercial self-haul vehicles and ROB waste with the exception of transfer and route collection trucks.

- Characterization of waste by hand-sorting and weighing representative samples of incoming waste, or in the case of larger homogenous loads, by visual observation.

- Close coordination of the selected consultant firm conducting the study with the staff at the three existing landfills to minimize disruption to existing landfill operations and customers.

4.7.2 THIRD FLARE

The IWMD is proposing to upgrade the existing Olinda Alpha Landfill gas flaring system with the addition of one new LFG fired flare (Flare No. 3), plus ancillary equipment to supplement the two existing flares. The third flare will have the same dimensions as and be located adjacent to the existing flares. The addition of this third flare will enable IWMD to meet the demands of increased capacity and subsequent increases in landfill gas production. The proposed flare will offer 100% redundancy for those instances when the LFG-to-energy plant is out of service (i.e. for maintenance purposes). The permit for the proposed new flare will not limit operating hours.

It is proposed that the new flare be 12 feet in diameter and 48 feet high, and have appropriate appurtenances to provide additional capacity of 4,200 standard cubic feet per minute of LFG with 45 to 50 percent methane content. It will be equipped with an automatic air/temperature control system to maintain proper combustion temperature. The flare will be equipped with a condensate injection system, utilized for destruction of condensate in the flare unit.

Addition of the third flare would require the IWMD to obtain a modification to the SCAQMD permit for the existing LFG Flaring Facility. As documented by SCAQMD Rules 1401 and 212 calculations, the new flare would not result in human risks to any sensitive receptors located near the Olinda Alpha Landfill property boundary. The proposed third flare project would not result in any adverse impacts to the environment.

SECTION 5.0
EXISTING CONDITIONS, IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE

SECTION 5.0
EXISTING CONDITIONS, IMPACTS, MITIGATION MEASURES AND LEVEL OF SIGNIFICANCE AFTER MITIGATION

This Section documents the environmental analysis for those environmental parameters for which the proposed project may or would result in potentially significant adverse impacts. These parameters were identified in the Initial Study (IS) which was included as part of the Notice of Preparation (NOP). Environmental parameters not included in this Section were discussed in Section 3.0 (Effects Found Not To Be Significant).

5.1 LAND USE AND PLANNING

This Section describes the existing land uses in the project area, potential environmental impacts, recommended mitigation measures to help reduce or avoid identified land use impacts and the level of significance of adverse impacts after mitigation. The assessment of land use impacts is based primarily on General Plans supplemented by zoning maps and other planning documents from the County of Orange and the City of Brea.

5.1.1 EXISTING CONDITIONS

5.1.1.1 Regional Setting

Olinda Alpha Landfill is located in the northern part of the County of Orange. Much of northern Orange County is developed as residential, commercial and industrial uses. Areas of north Orange County containing unimproved, developable land are primarily located in the Puente Hills. Many of these areas are undergoing rapid urbanization from vacant land and petroleum extraction operations to residential and commercial uses. Large open space and undeveloped areas in this part of north Orange County include Chino Hills State Park, Carbon Canyon Regional Park and privately-held land.

5.1.1.2 Local Setting

Olinda Alpha Landfill is located at 1942 North Valencia Avenue in the Tonner Canyon area of the Chino Hills in an unincorporated area of Orange County. It is located just north of the City of Brea's corporate boundary near the Orange/Los Angeles County jurisdictional boundary. The landfill is located in the City of Brea's Sphere of Influence (SOI). The landfill property covers 565 acres with approximately 420 acres currently permitted for refuse disposal. The site was established as a landfill in 1960 and has operated continuously since then. The landfill is currently planned for closure in 2013 with its ultimate planned use proposed as a regional park.

5.1.1.3 Surrounding Land Uses

Oil production facilities are located to the south and southwest of Olinda Alpha Landfill, while vacant and open space are found to the west, northwest and north extending to the County of Los Angeles corporate boundary. Land to the north and northwest of the landfill property in the County of Los Angeles is open space owned by the City of Industry Urban Development

Agency. The Firestone Boy Scout Reservation and Chino Hills State Park form the landfill's northeastern, eastern and southeastern boundaries. Land uses associated with various residential subdivisions are existing or planned south of the landfill in the vicinity of Lambert Road and Valencia Avenue including the Olinda Ranch and Tonner Hills Specific Plan, respectively. Figure 5.1-1 shows the location of existing and planned land uses surrounding the Olinda Alpha Landfill property.

5.1.1.4 Existing Land Uses

The landfill includes two fee booths and four scales, a fenced mechanic area, administration building, lunch room (for the fee booth attendants), small storage areas, a waste to energy building, flare stations, tire acceptance area and water tanks. The landfill also contains improved and unimproved access roads that are used by waste haulers and landfill staff.

5.1.1.5 Relevant Plans and Policies

Olinda Alpha Landfill is in the SOI for the City of Brea. A SOI is identified as a possible future annexation area for a city as regulated by the Local Agency Formation Commission (LAFCO). Establishment of this boundary is necessary to determine which governmental agencies can provide services in the most efficient way to a property in any given area and the orderly incorporation of areas to cities. This Section discusses the relevant General Plan land use designations and policies concerning Olinda Alpha Landfill for the County of Orange and City of Brea. In addition, other relevant plans and policies which currently or in the future may govern this facility are discussed.

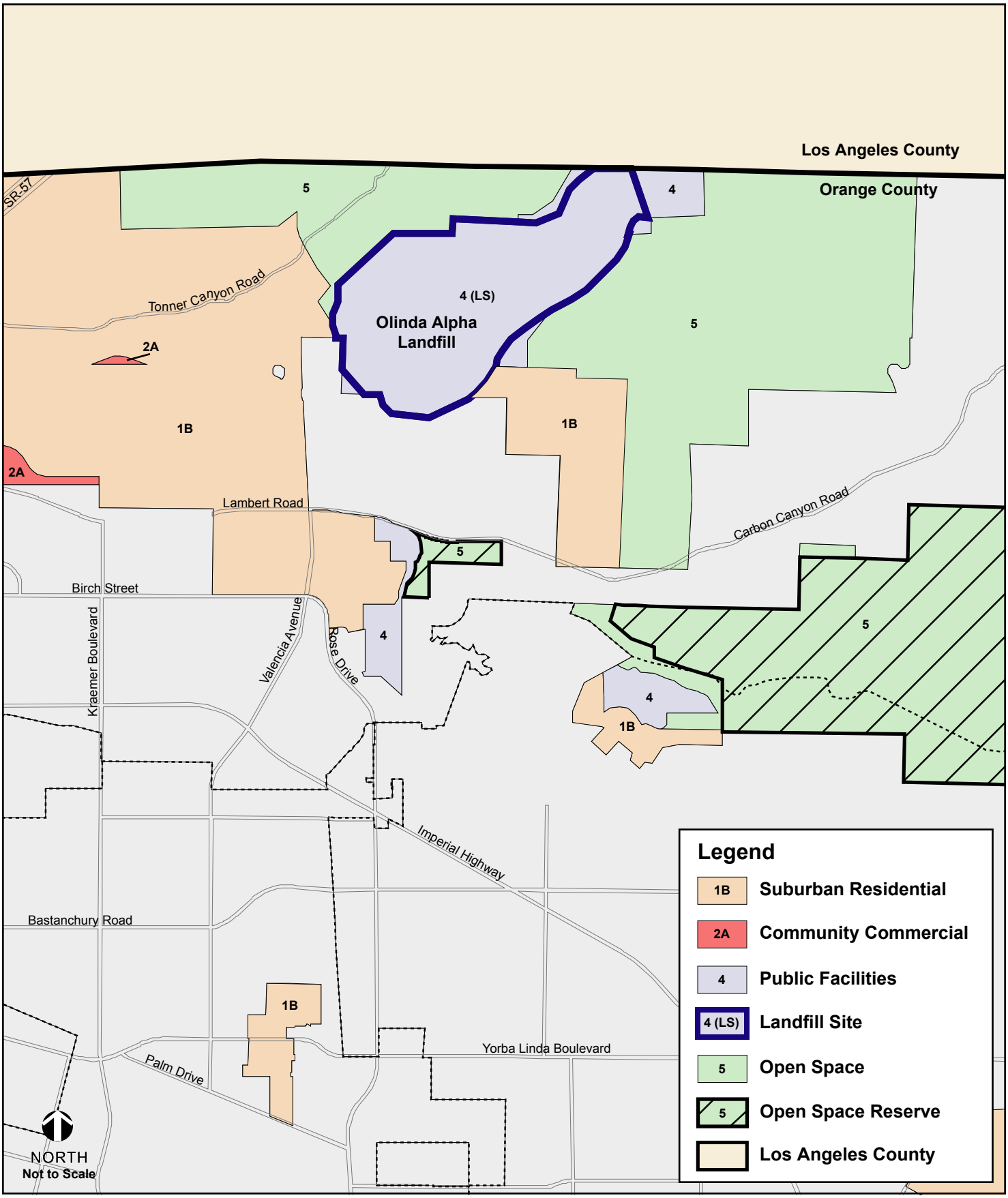
Overview of General Plans and Zoning

General Plans

Section 65302 of the California Government Code requires that all cities and counties adopt General Plans (GPs) containing seven mandatory elements: Land Use, Circulation, Housing, Conservation, Open Space, Noise and Safety. The GP is the basic planning document that provides a blueprint for growth and development.

Zoning

Zoning is essentially the division of a county or city into districts and the application of different regulations in each district. Zoning regulations are generally divided into two classes: (1) those that regulate the height or bulk of buildings within certain designated districts (i.e., structure and architectural design); and (2) those that prescribe the use of the building. Zoning Ordinances (ZOs) developed by a county or city must be consistent with the GP.



Source: County of Orange (2000).

Figure 5.1-1
Orange County Land Use Designations

County of Orange General Plan and Zoning Designations

The County of Orange has adopted each of the previously mentioned GP Elements, and also Public Services and Facilities, Resources, Recreation and Growth Management Elements (General Plan 1999). Olinda Alpha Landfill is designated Public Facilities (4) in the County of Orange GP. This designation allows for use of the site for solid waste disposal. The Solid Waste Facility-Landfill Site (LS) Overlay is also applied to the land use designation of Olinda Alpha Landfill in the County of Orange GP. The Overlay indicates that the current and near term use of the land is limited to landfill operations, including materials recovery and recycling facilities (MRFs), and associated uses such as borrow site areas, buffer area and access roads, until the landfill has been closed. The landfill's zoning designation is General Agriculture (A1) and contains a Public Facilities overlay. There are no site development regulations for landfill facilities regulated by zoning. Site development is regulated by the County of Orange and the Local Enforcement Agency (LEA) for the California Integrated Waste Management Board (CIWMB).

GP land use designations surrounding the Olinda Alpha Landfill property include Open Space (5) to the northwest and east and Suburban Residential (1B) to the southeast, south and west. The Open Space (5) designation provides for limited land uses that do not require a commitment of significant urban infrastructure. Compatible uses include land containing non-renewable and renewable resource areas, prime agricultural soils and water resources. MRFs are also permitted if the design of the facility does not adversely impact its open space surroundings, or if the facility is operated in conjunction with other refuse-oriented facilities (i.e., landfills). A number of additional uses are permitted including research and development, educational uses and other similar uses that do not require significant urban infrastructure.

Suburban Residential (1B) permits a wide range of housing types, from estates on large lots to attached dwelling units (e.g., townhomes, condominiums and clustered arrangements). This designation also permits the greatest flexibility for residential development. Building density and standards for this designation permit the construction of 0.5 to 18 dwelling units per acre.

County of Orange Source Reduction and Recycling Element

The County's Source Reduction and Recycling Element (SRRE) was developed to identify specific program alternatives to achieve compliance with the California Integrated Waste Management Act of 1989. Possible program alternatives include the establishment of MRFs in which waste materials are sorted and processed for sale to end users. A more detailed discussion of the SRRE and other state-mandated regulations is provided later in this Section.

City of Brea General Plan (GP) and Zoning Designations

The current City of Brea GP was adopted by the City Council on August 19, 2003. The City of Brea GP establishes a comprehensive long term vision for Brea to guide planning decisions and physical development over a 20-year period. The GP covers both the City's corporate boundaries and its SOI. Olinda Alpha Landfill is designated in the City of Brea's General Plan as a Public Facility, which allows for use of the site for municipal waste disposal. The City of

Brea GP states that the long range goal of the City is to designate the landfill property for open space when landfilling operations are terminated. The GP also states that the County's intent is to provide urban-natural and wilderness areas, and to provide active and passive recreational opportunities.

The City's GP identifies areas immediately surrounding Olinda Alpha Landfill in its SOI as buffer zones. Buffer zones are identified for areas requiring landscape treatment to enhance the compatibility of non-residential uses, such as industrial uses and Olinda Alpha Landfill, from adjacent and nearby existing and future residential developments. This land use category is also applied in areas that are subject to potentially excessive noise impacts such as the currently undeveloped areas along the freeway corridors.

Carbon Canyon Specific Plan

The Carbon Canyon Specific Plan (CCSP) encompasses 1,758 acres south of Olinda Alpha Landfill. The CCSP generally extends southwest from Rose Drive and Birch Street and northeast along Carbon Canyon Road to the City's corporate boundary with the County of San Bernardino. The CCSP provides the City with a comprehensive set of plans, regulations and criteria, conditions and programs for providing orderly development of the Carbon Canyon area. Permitted land uses in the CCSP include single and multiple family residential, neighborhood and recreational commercial, and open space.

Olinda Alpha Memorandum of Understanding

An existing Memorandum of Understanding (MOU) between the County of Orange and the City of Brea regarding Olinda Alpha Landfill (executed in March 1992 and subsequent amendments) addresses issues related to the existing and future landfill, circulation and recreational facilities at Olinda Alpha Landfill under the Orange County and City of Brea GPs. The MOU sets forth the permitted tonnage, operational guidelines and closure conditions for the landfill.

County of Los Angeles General Plan

The County of Los Angeles GP was adopted by the Los Angeles County Board of Supervisors (BOS) in 1988. Parts of the GP, including the Land Use Element, have been subsequently revised. The County is currently preparing a comprehensive GP update with adoption anticipated in 2005. Although Olinda Alpha Landfill is located in Orange County, it is less than one mile from the Los Angeles County boundary. The Los Angeles GP designates areas in Los Angeles County north of Olinda Alpha Landfill as Open Space. Areas designated Open Space include both public and private lands committed to long term open space use and lands intended to be used in a manner compatible with open space objectives. A variety of uses are permitted under the Open Space designation including the extraction of mineral resources and certain forms of commercial recreation.

California Integrated Waste Management Board

The California Integrated Waste Management Act of 1989, (IWMA, AB 939, Sher, Chapter 1095, Statutes of 1989 as amended) enacted through passage of Assembly Bill (AB) 939 and accompanying legislation AB 2707, established a requirement for each county and its cities to implement integrated waste management strategies to divert 50 percent of solid waste from landfills by 2000. Discussion of the requirements of these laws and their applicability to the County of Orange is provided in the following Sections.

Countywide Integrated Waste Management Plan

Counties are required to prepare and submit to the CIWMB an Integrated Waste Management Plan (IWMP) which includes all Source Reduction and Recycling Elements (SRREs), all Household Hazardous Waste Elements (HHWEs), a County-wide Siting Element (CSEs), all Non-Disposal Facility Elements (NDFEs), all applicable Regional SRREs, HHWEs and an applicable Regional Siting Element if regional agencies have been formed.

The County IWMP summarizes waste management issues facing the respective cities. It also provides an overview of the actions that will be taken to meet Public Resources Code (PRC) Section 41780 requirements. County IWMPs and any amendments are approved by the County and by a majority of the cities within that County. If cities fail to act on the County IWMP or amendments within 90 days of receipt, then failure to act is deemed to have been approved as submitted. County IWMPs are required to be updated every five years, if necessary. The County of Orange's IWMP was updated in 2001 and was approved by the CIWMB in September 2003. Goals and policies that are relevant to the IWMP include:

- The County and its cities will operate an environmentally sound solid waste management system that protects public health and safety, protects natural resources and uses the best available technology to accommodate the needs of the County.

- The County and its cities will operate a cost-effective integrated waste management system that emphasizes source reduction as its first priority, followed by recycling and composting. The system will be adequately financed to meet operational and maintenance needs.

- The County will provide facilities conveniently located throughout the County that will accept, process and safely dispose household hazardous waste (HHW). The County and its cities will, to the greatest extent possible, facilitate a decrease in the production, consumption, use and disposal of HHW and promote the use of County facilities for HHW requiring disposal.

Source Reduction and Recycling Element

The IWMA requires each California city and county to prepare, adopt and submit to the CIWMB an SRRE that demonstrates how the jurisdiction will meet the IWMA's mandated diversion goals of 50 percent on and after January 1, 2000. Each jurisdiction's SRRE must include specific components, as defined in PRC Sections 41003 and 41303. In addition, the SRRE must

include a program for management of solid waste generated within the jurisdiction that is consistent with the following hierarchy: (1) source reduction, (2) recycling and composting and (3) environmentally safe transformation and land disposal. Included in this hierarchy is the requirement to emphasize and maximize the use of all feasible source reduction, recycling and composting options to reduce the amount of solid waste that must be disposed of by transformation and land disposal (PRC Sections 40051, 41002 and 41302). Currently, there is a County-wide diversion average rate of 42 percent. According to the CIWMB's jurisdiction profile for Orange County, the County's SRRE was approved in 1995. The following SRRE goals and objectives are relevant to the proposed project at Olinda Alpha Landfill:

- Maximize the use of all feasible source reduction, recycling and composting options to reduce the amount of solid waste that must be disposed of by transformation and land disposal.

- Develop and implement programs for source reduction, recycling, composting and special wastes that promote responsible solid waste management on the part of the County unincorporated area residents and businesses.

Household Hazardous Waste Element

Each city and county is required to prepare, adopt and submit to the CIWMB a HHWE which identifies a program for the safe collection, recycling, treatment and disposal of hazardous wastes generated by households. The regulations clarify and provide guidance to local jurisdictions as they prepare their HHWEs. The HHWE specifies how HHW generated by households within the jurisdiction must be collected, treated and disposed. The HHWE is addressed in two Articles of Title 14, Chapter 9, of the California Code of Regulations (CCR): 6.3 (Household Hazardous Waste Element) and 7.0 (Procedures for Preparing and Revising City and County Source Reduction and Recycling Elements, and Household Hazardous Waste Elements). Article 6.3 specifies the means by which each jurisdiction is required to prepare and implement a HHWE. This Article outlines objectives that include plans to source reduce and safely collect, recycle, treat, and dispose of household hazardous wastes generated within the jurisdiction and provides a specific time frame for achieving these objectives. According to the CIWMB's jurisdiction profile for Orange County, the County's HHWE was approved in 1995.

Countywide Siting Element

Counties are required to prepare a CSE that describes areas that may be used for developing new disposal facilities. The CSE also provides an estimate of the total permitted disposal capacity needed for a 15-year period if counties determine that their existing disposal capacity will be exhausted within 15 years or if additional capacity is desired.

Proposed regulations have been prepared to clarify and provide guidance to counties who will be preparing their CSEs. The CSE is addressed in Chapter 9, Article 6.5 of Title 14, Natural Resources Division 7, CIWMB which specifies requirements for goals, policies, criteria, location, GP consistency, strategies for disposal when disposal sites are not available and an implementation schedule. According to the CIWMB's jurisdiction profile for Orange County,

the County's CSE was approved in 1996. The following CSE goals and objectives are relevant to the proposed project at Olinda Alpha Landfill:

- The County will minimize the amount of waste requiring disposal through source reduction, recycling and composting.

- The County will provide adequate long term landfill disposal capacity for wastes that will need to be landfilled after maximizing source reduction, recycling and composting.

- The County will operate an environmentally sound solid waste management system that protects public health and safety, protects natural resources and uses the best available technology to accommodate the needs of the County.

- The County will have at all times a minimum of 15 years of available disposal capacity. This disposal capacity will be preferably located within the County to minimize transportation costs. If subsequent studies indicate that no suitable sites can be identified in the County for future landfills, the County will establish agreements with public or private facilities outside the County.

- The County will ensure that new or expanded disposal facilities will at all times be in compliance with applicable federal, state and local statutes, permits, minimum operating standards and monitoring requirements. This includes, but is not limited to, the requirements of the CIWMB, regional water quality control boards, the LEA, local air pollution control districts, local jurisdictions, and all utilities or agencies that either have jurisdiction over the installation of improvements or provide services to disposal facilities.

Non-Disposal Facility Element

Each city and county is required to prepare, adopt and submit to the CIWMB, an NDFE which includes a description of new facilities and expansion of existing facilities, and all solid waste facility expansions (except disposal and transformation facilities) that recover for reuse at least five percent of the total volume of material received by the facility. A non-disposal facility (NDF) is defined as any solid waste facility required to obtain a state solid waste facility permit from the Solid Waste LEA with concurrence from the CIWMB except a disposal facility or a transformation facility. Based on this definition, NDFs include transfer stations, MRFs and composting facilities. The NDFE must also be consistent with the implementation of a local jurisdiction's SRRE. Each jurisdiction must also describe transfer stations located within and outside the jurisdiction which recover less than five percent of the material received.

Proposed regulations have been prepared that require the identification of NDFs in each jurisdiction. Each jurisdiction must prepare a NDFE that identifies all existing, expansion of existing and proposed solid waste facilities (except disposal facilities and transformation facilities) located within and outside the jurisdiction that they use or will use, and which recover for reuse and recycling at least five percent of the total volume of material received by the facility. According to the CIWMB's jurisdiction profile for Orange County, the County's NDFE was approved in 1995.

5.1.2 THRESHOLDS OF SIGNIFICANCE

Land use impacts would be considered significant and adverse if the proposed project would result in one or more of the following conditions:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the GP, Specific Plan, Local Coastal Program or ZO) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with adjacent, existing or planned land uses.

5.1.3 METHODOLOGY RELATED TO LAND USE AND PLANNING

The proposed project was compared to the County of Orange and City of Brea GP Land Use Elements for consistency with land use designations and regulations. In addition, the proposed project was also compared to the zoning designations in both jurisdictions.

5.1.4 POTENTIAL IMPACTS

There are no established communities on the landfill property including the proposed expansion area. Therefore, the proposed project would not physically divide an established community.

The proposed project is in an area designated for Public Facilities (4) in the County of Orange GP. This designation allows for use of the site for solid waste disposal. The Solid Waste Facility-Landfill (LS) Site Overlay is also applied to the land use designation of Olinda Alpha Landfill in the County of Orange GP. The proposed expansion footprint is entirely contained within the existing landfill property boundaries. The landfill's zoning designation is General Agriculture (A1) and contains a Public Facilities overlay. There are no site development regulations for landfill facilities regulated by zoning. Site development is regulated by the County of Orange and the LEA. Implementation of the proposed project will not conflict with the County of Orange GP land use designations or zoning for the landfill property.

Implementation of the proposed project would conflict with the existing MOU between the County of Orange and the City of Brea regarding Olinda Alpha Landfill. The MOU addresses issues related to the existing and future landfill, circulation and recreational facilities anticipated under the Orange County and City of Brea GPs for the landfill property. The MOU sets forth the permitted tonnage, operational guidelines and closure conditions for the landfill. The existing MOU identifies the landfill closure date as 2013. Under the proposed project, closure would be extended to approximately 2021 based on increased operational efficiencies, current population projections and existing disposal technologies. Therefore, the MOU would require modification to show this later closure date under the proposed project.

City of Brea GP designations cannot be imposed on property outside the City limits and owned by the County of Orange. The proposed project does not create any inconsistencies with the City of

Brea GP. Olinda Alpha Landfill is designated in the City of Brea GP as a Public Facility, which allows for use of the site for municipal waste disposal. The proposed landfill expansion footprint is entirely contained within the existing landfill property. Therefore, there would be no impacts to adjacent, existing or planned land uses in the City of Brea.

5.1.5 MITIGATION MEASURES

LU-1 Prior to acquiring revised landfill permits and finalization of design plans for the project, the County of Orange and the City of Brea will renegotiate the details of the MOU to allow the disposal of MSW over a longer period of time. Under the proposed project, closure would be extended to approximately 2021 based on increasing the site's air space capacity and increased operational efficiencies, current population projections and existing disposal technologies.

5.1.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of mitigation measure LU-1 will ensure consistency with the MOU between the County of Orange and the City of Brea. The impacts of the proposed project related to the MOU after implementation of mitigation measure LU-1 would be less than significant.

5.2 GEOLOGY AND SOILS

This Section summarizes information obtained from reports prepared for various projects related to operations and on going landfilling at the Olinda Alpha Landfill. These reports were obtained from IWMD. All technical reports and relevant material used in the preparation of this Section are listed in Section 13.0 (References).

5.2.1 EXISTING CONDITIONS

The Olinda Alpha Landfill is in the southern foothills of the central Puente Hills, in the northernmost part of Orange County. These hills form a west-northwest trending arc that separates the San Gabriel and La Habra Valleys and are characterized by west-northwest trending, moderately steep and high longitudinal ridges that are dissected by narrow, V-shaped intervening canyons. Ridge tops attain maximum elevations of about 1,800 feet above mean sea level (AMSL), rising approximately 1,000 feet above the adjacent floor of the La Habra Valley.

The Olinda Alpha Landfill was originally two separate landfills in adjacent southwest-draining canyons between Tonner and Carbon Canyons in the southern foothills of the central Puente/Chino Hills. A southwest trending ridge separating the two Canyons has been excavated and filled with refuse, thereby creating a single landfill. To the southeast of the landfill site, a ridge that rises to a maximum elevation of 1,443 feet AMSL separates the Olinda Alpha Landfill from the currently undeveloped canyons that are tributary to Carbon Creek. To the west, a ridge that rises to a maximum elevation of 1,138 feet AMSL separates the landfill from Tonner Canyon. The lowest elevations on the site are found along its southwest boundary where the mouth of Olinda Alpha Canyon is at an elevation of approximately 625 feet AMSL.

In the area of the Olinda Alpha Landfill, the stratigraphic section is dominated by upper Miocene sediments of the Puente Formation, which locally reach a thickness of 13,400 feet. According to Yerkes et al. (1965), the sediments now exposed in those hills accumulated in a deep, fault-bound marine trough. Massive sandstones and thick sequences of shales and siltstones suggest steady accumulation of sediment in deep water, punctuated by turbidity currents that accumulated graded sandstone beds. Lenses of conglomerate become more abundant in the upper members of the Puente Formation, suggesting the growth of submarine fans from nearby structural highs.

The marine Puente Formation was divided by Schoellhamer et al. (1954) and Durham and Yerkes (1964) into four members, which from oldest to youngest are the La Vida, Soquel, Yorba and Sycamore Canyon Members. The La Vida Member has an average stratigraphic thickness of 3,800 feet and consists of laminated to platy micaceous siltstones, interbedded with minor feldspathic sandstones, limestones and tuffs. The Soquel Member ranges in stratigraphic thickness from 500 to 3,000 feet and consists of massive to thickly bedded, concretionary, feldspathic sandstones that are interbedded with laminated silty shales. The Yorba Member has an average stratigraphic thickness of 3,000 feet and consists of platy to thinly bedded, light pinkish gray, diatomaceous and sandy siltstones interbedded with minor sandstone and pebble conglomerate beds. The Sycamore Canyon Member of the Puente Formation has an average regional stratigraphic thickness of 1,650 feet and consists of interbedded micaceous siltstone and

coarse grained sandstones that contain as much as 30 percent interbedded conglomerates. In unfaulted sequences, the four members generally have gradational or interfingering contacts with one another, and can, therefore, exhibit considerable variations in thickness.

During the last two million years, the Puente Hills have been uplifted along the northwest trending Whittier Fault into a large antiform. Superimposed over this regional antiform are numerous minor anticlinal and synclinal folds, and a number of faults subparallel to the Whittier Fault. According to Yerkes et al. (1965), the Whittier Fault Zone can be traced for a distance of about 25 miles along the south slopes of the Puente Hills, from the Santa Ana River on the southeast to Whittier Narrows on the northwest.

South of the Whittier Fault are the La Habra and Yorba Linda Basins. Together, these Basins form a gently downwarped trough, or syncline, bound by the Puente Hills to the north and the Coyote Hills to the south (Turnbull and Wiebe, 1986). The Miocene Puente Formation is present beneath these basins at considerable depths with up to 6,000 feet of the marine sandstone and siltstones of the Pliocene Fernando Formation, approximately 1,500 feet of the marine sands of the early Pleistocene San Pedro Formation, and as much as 1,200 feet of continental clay, silt, sand and gravel of the mid to late Pleistocene La Habra Formation overlying it. Holocene erosion has stripped away some of the overlying materials and exposed older units along the edges of these Basins and has left a veneer of alluvium that overlaps the older sediments.

5.2.1.1 Site Geology

The Olinda Alpha Landfill occupies two southwest draining canyons and the intervening ridge between them. These canyons intersect a sequence of friable sandstones and interbedded silty shales of the Puente Formation, which are gently folded and locally cut by faults. Throughout the central area of the landfill property, beds typically dip between 15 and 25 degrees to the southwest. Near the southwest corner of the landfill property, three faults juxtapose different structural blocks. Two of the faults are branches of the Whittier Fault, and in the vicinity of these faults, bedding orientation changes abruptly, dipping 50 to 75 degrees to the north. Near the northeast end of Olinda Alpha Canyon, the sedimentary sequence is folded into a major antiform, which results in a shallow (15-25 degree) northeasterly dip.

5.2.1.2 Site Stratigraphy

Limited exposures of the Yorba and Sycamore Canyon Members of the Puente Formation are in fault contact with the Soquel Member in the southwest part of the landfill property.

<u>Soquel Member</u>

Distribution

All areas north of the northern branch of the Whittier Fault in the area of the Olinda Alpha Landfill property are underlain by the Soquel Member of the Puente Formation.

Lithology

Within the Olinda Alpha Landfill property, the Soquel Member of the Puente Formation consists of massive to thickly bedded, friable to slightly cemented, fine to medium-grained, pale yellow brown, feldspathic silty sandstone that is interbedded with laminated, stiff, light gray, silty shales and clayey siltstones. The proportion of sandstone to shale, as well as the thickness of homogeneous lithologic sequences vary substantially with stratigraphic position. In general, boreholes excavated within the lower stratigraphic intervals on the landfill property have an average sandstone to shale ratio of about 50:50 and a maximum thickness of individual homogeneous lithologic packages of about 15 feet for sandstone and 20 feet for shale. In contrast, those boreholes excavated within stratigraphically higher intervals on the landfill property have average sandstone to shale ratios of about 70:30, with homogeneous sandstone lenses reaching thicknesses of as much as 50 feet and shale lenses reaching only about eight feet in maximum thickness (GeoLogic Associates (GLA), 1994).

Engineering Properties

The Soquel Member sandstones exposed on the landfill property are characteristically massive to thickly bedded and fine- to medium-grained. They are friable to slightly cemented and can be excavated with conventional earthmoving equipment. On the basis of the observed surface and subsurface conditions, it is anticipated that a substantial volume of oversize fragments (i.e. cemented sandstone concretions) would be generated during excavation on the site.

Grain size analyses on three core samples and one bulk sample had sand to silt/clay ratios between 85:15 and 60:40. In addition, the sandstones have an average laboratory determined dry density of 102.9 ± 7 pounds per cubic foot (pcf, from an average of 37 analyses) and an average laboratory determined moisture content of 12% ± 6% (from an average of 43 analyses).

Given their granular nature and the intermediate permeability of the stockpiled soil derived from them, the Soquel sandstones are not expected to yield soils with permeability characteristics suitable for use as low permeability liner or cover. In addition, the presence of a significant quantity of silt and clay in the sandstones would be expected to reduce the permeability of the soils derived from them to levels below that which would be suitable for use as drainage media.

Soquel Member shales are laminated, stiff, friable and fissile. Grain size analyses on four core samples and ten bulk surface samples had sand to silt/clay ratios between 5:95 and 25:75.

The Soquel shales have an average laboratory determined dry density of 101 ± 10 pcf (from an average of 27 analyses) and an average laboratory determined moisture content of 19% ± 7% (from an average of 39 analyses). Atterberg limits were determined on 10 samples, with liquid limits ranging between 32 and 61, plastic limits between 15 and 28, and plasticity index between 15 and 33.

Laboratory determined permeabilities are sensitive to the method followed in sample preparation. During previous testing for this site, samples that were pre-wetted and mechanically disaggregated by gentle crushing prior to remolding have measured permeabilities between

1.8E-08 and 1.2E-07 centimeters per second (cm/sec, samples SS-11-1 through SS-13-1). In contrast, samples that were sieved to remove particles larger than four millimeters (mm), but were otherwise unprocessed, had reported permeabilities as high as 6.7E-06 cm/sec (samples SS-14-1 through SS-17-1). Samples SS-18-1 through SS-20-1 included thin interbedded sandstones and had comparatively higher permeabilities. These results indicate that Soquel shale materials could produce a low permeability soil product suitable for use in liner and cover systems only if carefully screened, processed and mechanically disaggregated prior to use.

Landslide Debris

Distribution

Two extensive landslide complexes were mapped in Olinda and Olinda Alpha Canyons prior to development of the landfill (Morton and Miller, 1981 [CDMG and OCEMA]). Parts of the headscarp of the Olinda landslide complex that remained after development of the landfill experienced movement during borrow excavation operations (GLA, 1997).

Lithology

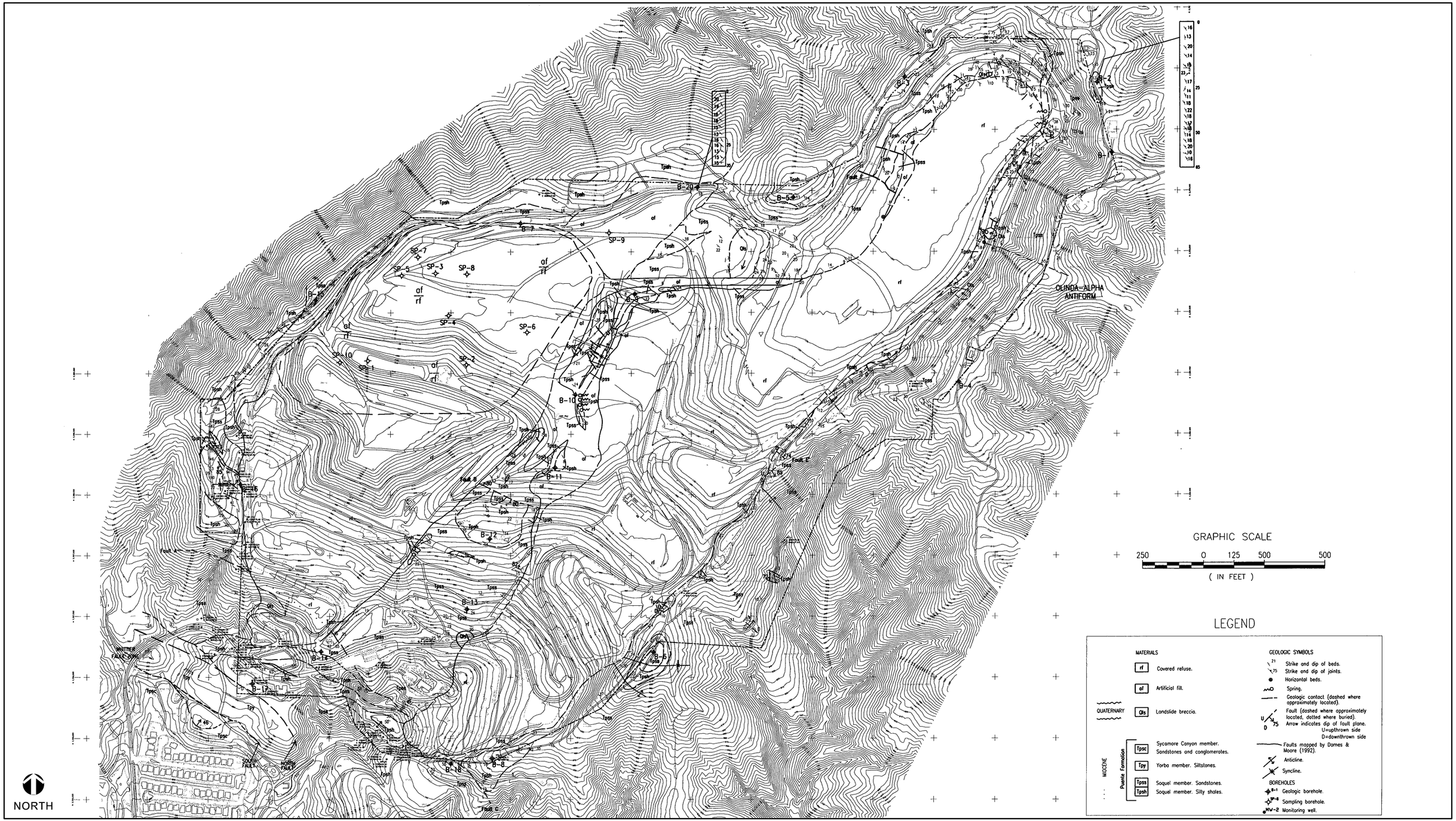
Landslide deposits typically consist of sandy breccias in which the coarse fragments consist of slightly indurated Soquel sandstones and shales. Where sliding is incipient, the sandstones and shales are fractured but not homogenized, and individual fragments in the landslide breccia can be several feet in diameter. In larger landslides that have moved long distances, many of the fragments have disaggregated to form a sandy silt matrix.

Engineering Properties

Landslide debris is easy to excavate and yields sandy soils that are considered suitable for use as general purpose fill. Because new landslides are generally removed or remediated quickly, they are used as daily cover as they occur. Therefore, they were not evaluated for other landfill construction uses.

5.2.1.3 Structural Geology

Structurally, the Olinda Alpha Landfill property and its immediate surroundings can be divided into five blocks with distinctive structural attitudes as shown on Figure 5.2-1. Block 1, located to the southwest of the landfill, is bound on the north by the south main strand of the Whittier Fault. Block 2 is bound by the two main strands of the Whittier Fault. The poorly exposed, light colored silstones that form Block 2 are tentatively assigned to the Yorba Member of the Puente Formation, and are characterized by such intense, small scale deformation that Gath et al. (1992) interpreted the whole block as a pop up wedge formed by differential movement along the main strands of the Whittier Fault. Block 3 is bound by the north strand of the Whittier Fault and by Fault A, and is characterized by consistently steep northerly dips (50 to 75 degrees) on the sandstones and silty shales of the Soquel member of the Puente Formation. Block 4 is bound by Fault A to the south and forms the south flank of an antiform whose axis is exposed near the northeast corner of the Olinda Alpha parcel (hereafter referred to as the Olinda Alpha antiform).



Source: GeoLogic Associates (2004).

Figure 5.2-1
Site Geology

This block is formed by Soquel sandstones and silty shales with generally shallow (15 to 25 degrees) southwesterly dips, overprinted by low amplitude folds. Block 5 forms the north flank of the Olinda Alpha antiform, and is characterized by shallow (15 to 25 degree) east-northeasterly dips on Soquel sandstones and silty shales.

5.2.1.4 Recent Slope Stability History

In 1994, The Earth Technology Corporation, in cooperation with GLA, prepared a slope stability report titled "Stability Analysis Report, Master Grading Plans," which analyzed the conceptual design for the vertical expansion of the Olinda Alpha Landfill to elevation 1,300 feet AMSL. As a part of this expansion, the ridge (Center Ridge) between the Olinda and Olinda Alpha Landfills was to be excavated so that the two separate landfills could be merged into one.

The combined landfill was then to be raised to design grades up to approximately 1,300 feet AMSL. As presented in the original design report, the excavated Center Ridge was originally proposed to be lined, and as a result, substantial interim stabilization was recommended. Prior to excavation of the Center Ridge, however, a liner exemption was granted by the RWQCB-SA (as further discussed in Section 5.3.4) and, as a result, the nature and extent of the interim buttressing requirements were reduced. During construction of the Center Ridge, a number of relatively small and non-critical landslides occurred within the temporary back-cuts of the Center Ridge excavation. These failures typically occurred along claystone beds and were mitigated by flattening the excavation or constructing relatively small stabilizing buttresses.

These interim construction failures allowed for additional back-calculation of the shear strength of claystone beds within the Puente Formation on the site. In the end, the more recently back-calculated strength parameters were in strong agreement with the shear strength values used by Earth Tech/GLA in the 1994 Slope Stability Report (i.e., phi = 11 degrees and cohesion = 50 psf), providing an additional level of confidence in the nature of these critical materials.

The excavation of the Center Ridge Area was completed in late 2000, and refuse has subsequently been placed in this area.

5.2.2 THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines indicate that a project will have significant effect on the environment related to geology, seismicity, soils and groundwater if it will "…expose people or structures to major geologic hazards… ."

For this EIR, the Olinda Alpha Landfill expansion plan was determined to have a significant effect on the environment related to geology, seismicity and soils if a project impact met the language of the CEQA Guidelines or was not able to be designed to existing seismic standards for a landfill. Appropriate designs and construction practices can avoid or substantially reduce potentially significant adverse effects of the project.

Title 27 of the California Code of Regulations (CCR) sets rules and guidelines for the design, construction, management, closure and post closure maintenance of all Class III municipal solid waste landfills. These rules are enforced by the California Integrated Waste Management Board, its local enforcement agency (LEA) and the California State Water Quality Control Board.

Specific matters of geological importance for the proposed landfill expansion concern the static and dynamic stability of proposed bedrock cut slopes and refuse fill slopes. For design purposes, the static factor of safety against slope and landfill element failure is 1.5 (forces acting against failure versus forces acting to cause failure).

Dynamic stability concerns the performance of slopes during seismic events. In the current standard of practice, a horizontal seismic coefficient of 0.15 is applied during stability analyses. If the factor of safety against slope failure involving landfill environmental components is not equal to or greater than 1.5, then a more rigorous method of stability analysis must be employed. The more rigorous dynamic stability analysis consists of calculating the amount of displacement that is expected to occur as a result of seismic forces acting on the site. The seismic forces are calculated either deterministically or probabilistically and the amount of displacement of the slope or landfill liner system can be calculated. The Santa Ana Regional Water Quality Control Board requires all systems be designed to withstand the Maximum Credible Earthquake (MCE) event with liner or slope displacements equal to or less than acceptable distances.

5.2.3 METHODOLOGY RELATED TO GEOLOGY AND SOILS

5.2.3.1 General

The methodology for the geology, seismicity and soils analysis was based on compilation and review of existing readily available reports; and review of aerial photographs, geologic mapping, geologic logging of exploratory trenches, test pits, boreholes, soil and bedrock sampling and geotechnical analyses, monitoring well construction, groundwater sampling and chemical analyses, aquifer testing, and slope stability analyses of subgrade, interim refuse fill and final landfill slopes. These geotechnical studies were undertaken to establish the design parameters for the landfill which meet current regulatory requirements. The reports used to prepare this section included site specific geologic, geotechnical and hydrogeologic information collected by consultants for the IWMD; regional geologic data compiled by the California Division of Mines and Geology (now California Geological Survey (CGS)) and the United States Geological Survey (USGS); and published reports from the United States Soil Conservation Service (SCS) and the California Department of Water Resources.

The information presented here regarding impacts and potential mitigation measures for the development of landfill areas is based on-site specific data and or conservative estimates or interpretations where required. Engineering analyses of proposed cut and fill slopes and final landfill slopes were performed using engineering data obtained during previous landfill development investigations. The technical references for this data collection and analyses are provided in Section 13.0 **(**References).

5.2.3.2 Slope Stability of the Proposed Expansion

The slope stability of the proposed lateral/vertical expansion of the Olinda Alpha Landfill has been analyzed by GLA and found to be acceptable; that is, all factors-of-safety were greater than 1.5 and seismic displacements were found to be within acceptable limits.

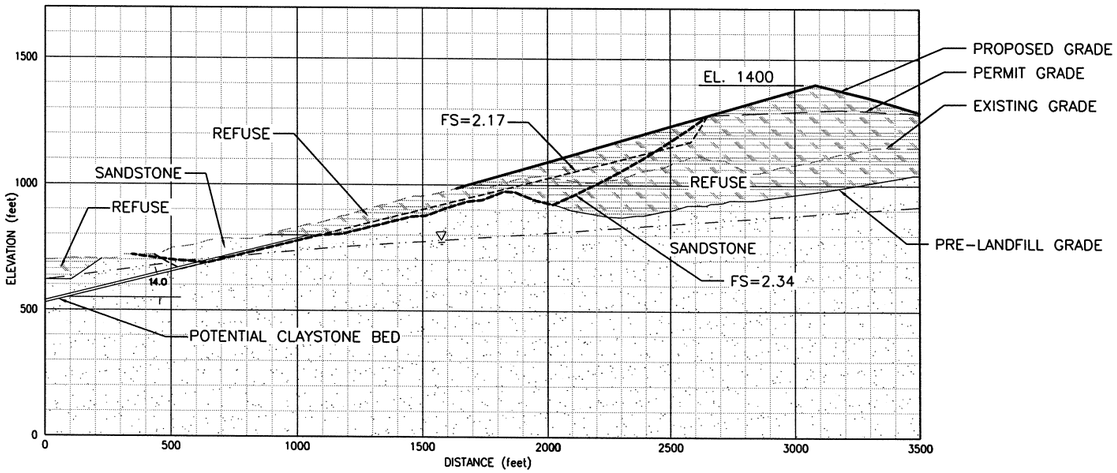
Because of the complex topography and the strong influence of the claystone beds on slope stability of the site, GLA used the three-dimensional (3-D) CLARA-W slope stability computer program (O. Hungr Geotechnical Research, 2003) to evaluate the proposed lateral/vertical expansion. Table 5.2-1 presents material properties used in this stability evaluation. These parameters were based on laboratory analyses, back-calculation, and experience with similar materials. Since the claystone beds at the site are critical to slope stability, the parameters used for this material were the same as were used by Earth Tech/GLA in the 1994 report titled, "Stability Analysis Report, Master Grading Plans" (i.e., slightly lower than were back-calculated from more recent construction slope failures).

TABLE 5.2-1
MATERIAL PROPERTIES

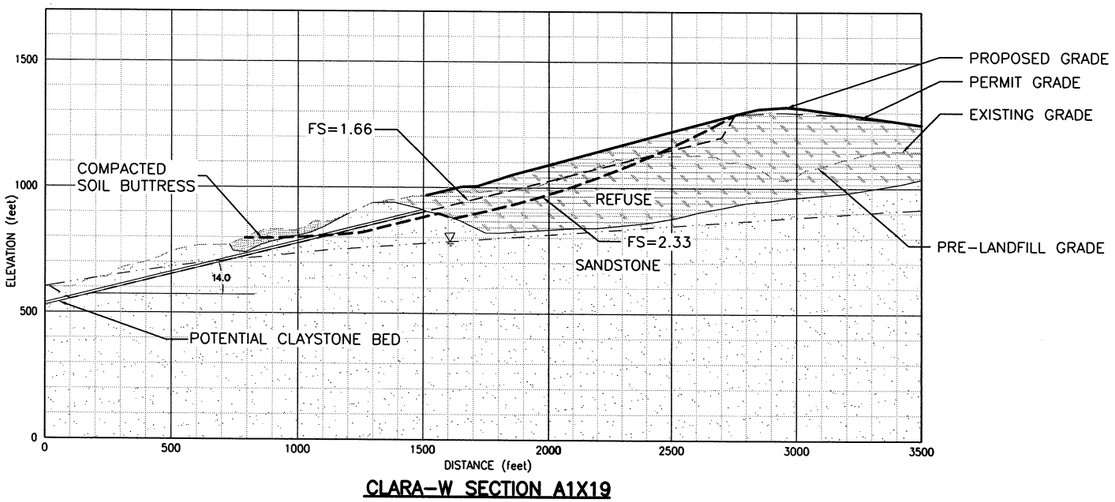
Material	**Unit Weight** (pcf)	**Friction Angle** (deg.)	**Cohesion** (psf)
Refuse Fill	72	33	100
Compacted Buttress Soil	120	28.5	500
Sandstone	130	34	400
Claystone	125	11	50

Since the claystone is interbedded with sandstone at the site, accurately determining the stratigraphy for a given slope is not practical. As a result, numerous 3-D slope stability runs were performed assuming a range of worst-case claystone geometrics, including the assumption of claystone beds dipping from 10 to 14 degrees out of slope. Since claystone beds dipping steeper than 14 degrees would not generally be exposed in topographically lower slopes, they are expected to be more stable, and were not analyzed.

Based on slope orientation and site stratigraphy, 3-D slope stability analyses were performed at two critical areas: the highest, southern facing slope for the vertical expansion and the northeastern facing natural slope abutting the proposed lateral expansion at the northeastern portion of the site (see Figures 5.2-2 to 5.2-4). These figures show plan and section views of potential failure surfaces in these two critical areas. The multiple, parallel lines represent the cross sections used in the 3-D stability analysis. The bold lines near the center of these parallel lines represent the center of the most critical potential failure surfaces, and it is along these lines that the displayed cross sections were shown. For the south-facing slope, Figure 5.2-2 shows potential failure surfaces that would "daylight" at the Permit Grade, while Figure 5.2-3 shows potential failure surfaces that would "daylight" at the higher, Proposed Grade. The Permit Grade is well below the adjacent natural topographic ridge in the northeast portion of the site; accordingly, 3-D stability analyses were only conducted for the higher Proposed Grade, as shown in Figure 5.2-4.

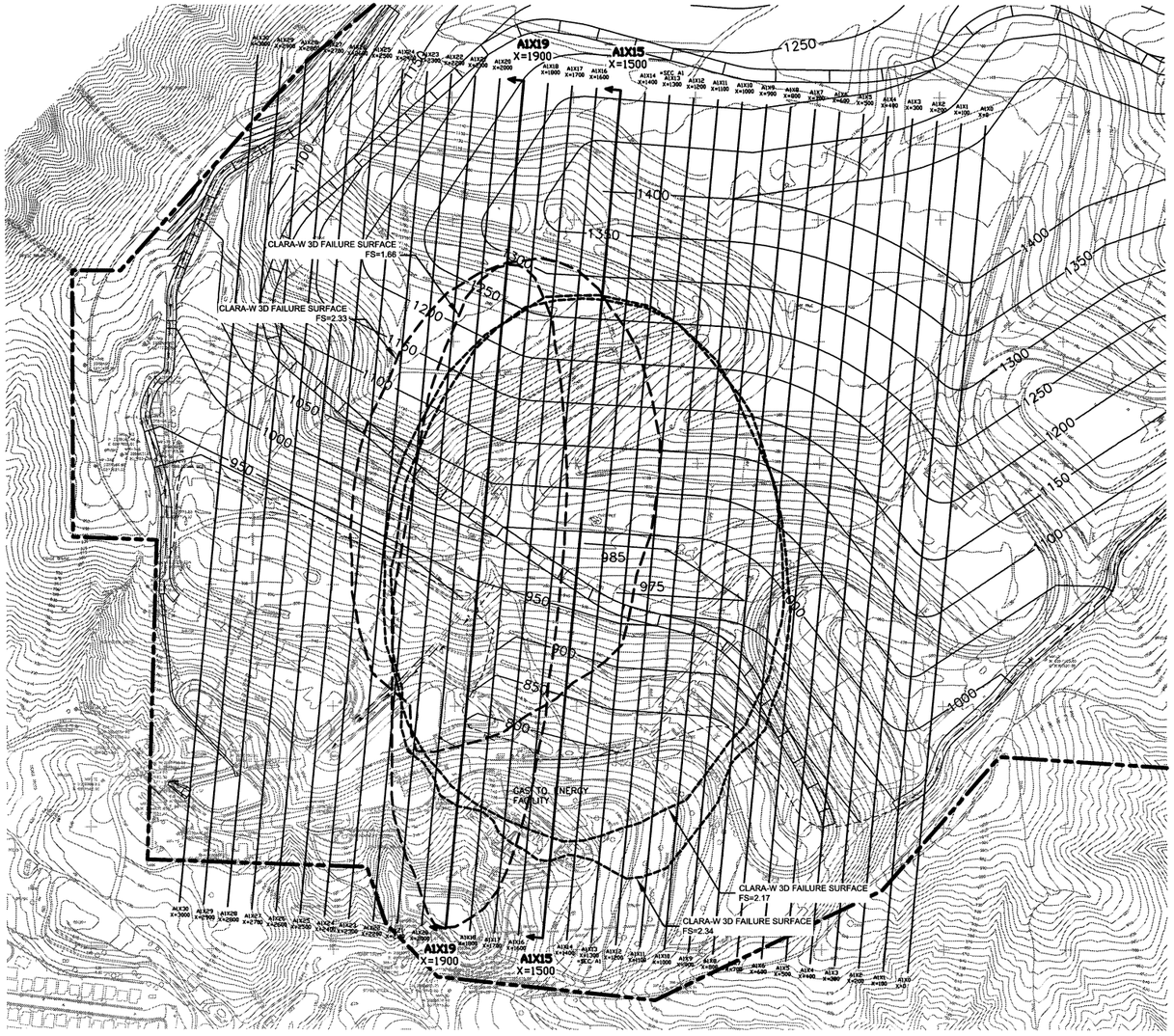


CLARA-W SECTION A1X15



CLARA-W SECTION A1X19

NORTH



PLAN

LEGEND

A1X19
X=1900
A1X19
X=1900

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3-D SLOPE STABILITY ANALYSIS; FACTOR-OF-SAFETY (FS) AS SPECIFIED

CLARA-W CROSS-SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

GRAPHIC SCALE

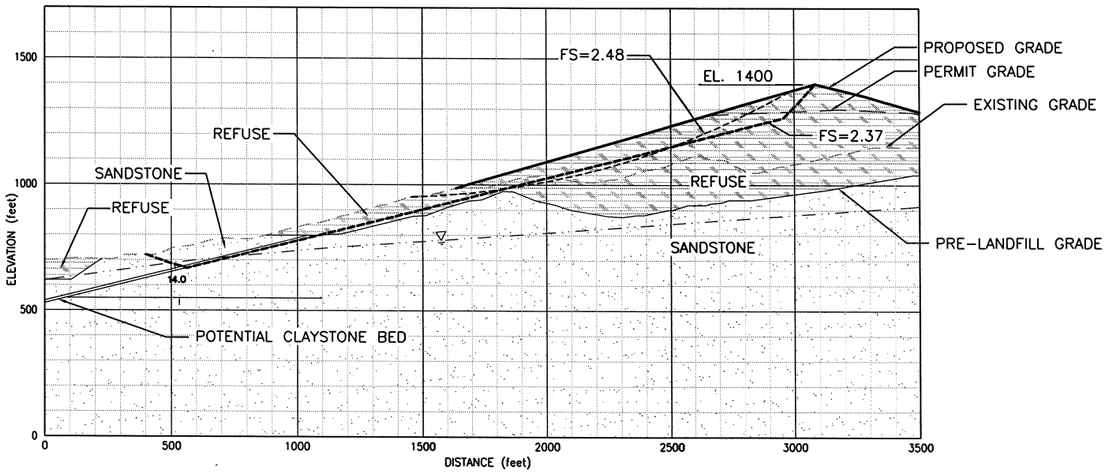
600 0 300 600 1200

(IN FEET)

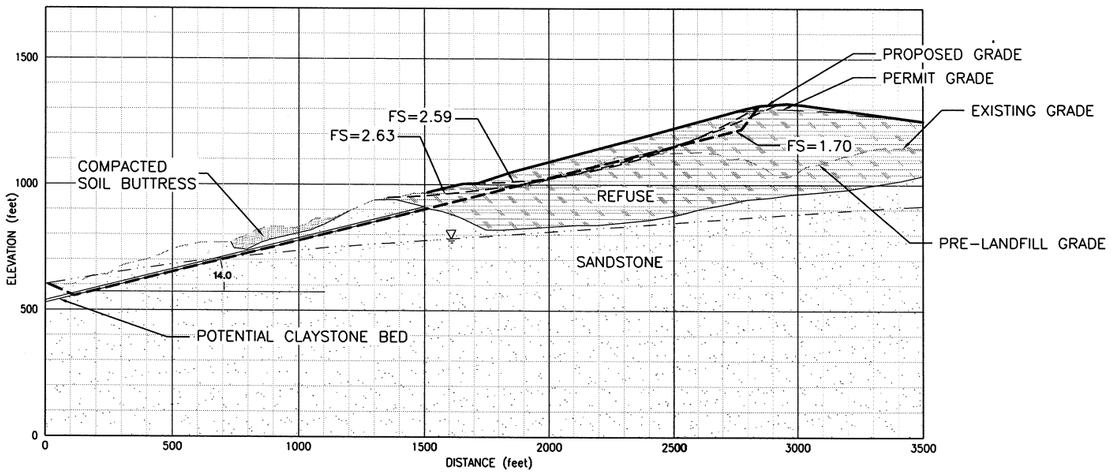
1 inch = 600 ft.

Source: GeoLogic Associates (2004).

Figure 5.2-2
South-Facing Slope: Potential Failures Daylighting at Permit Grade

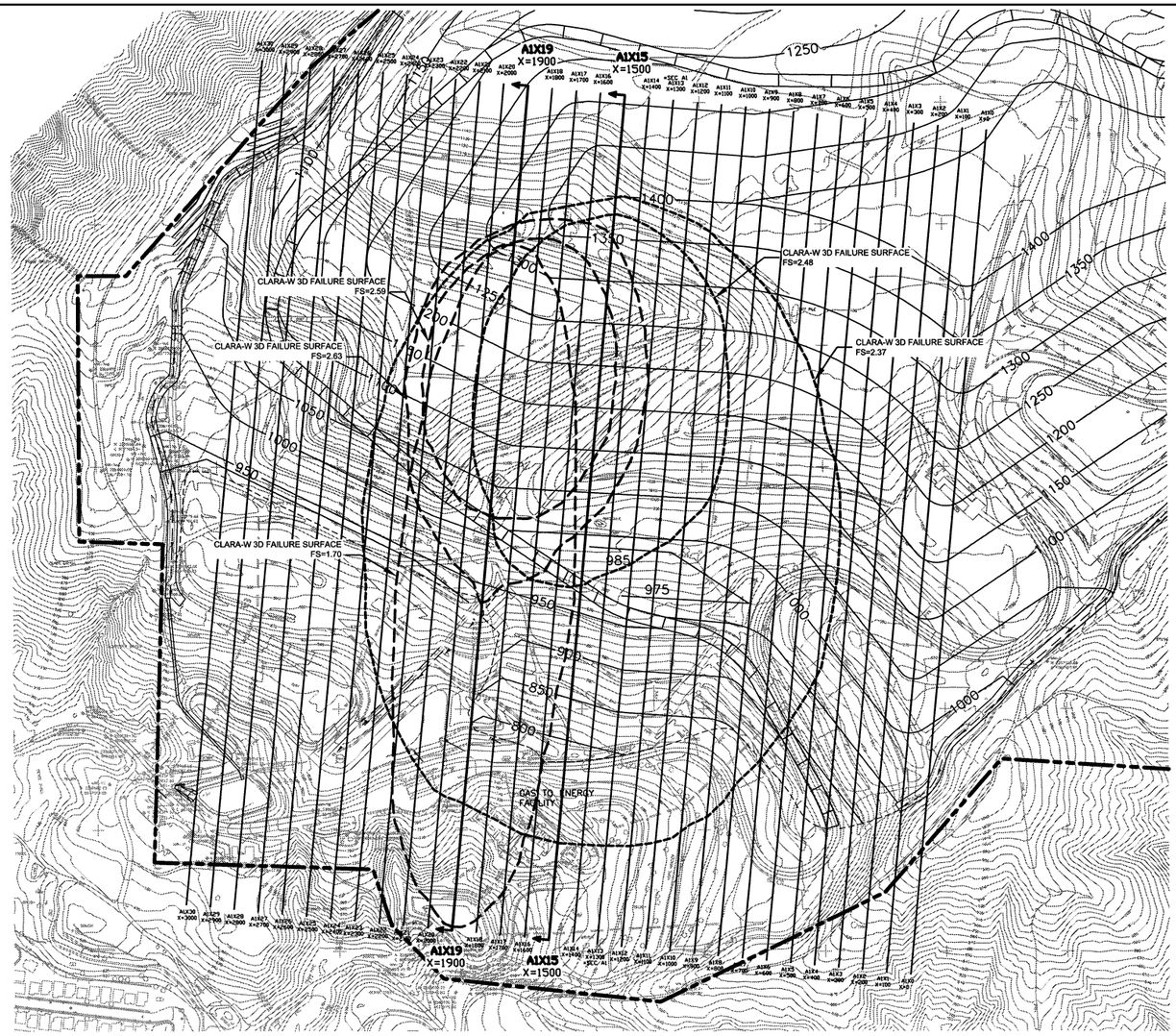


CLARA-W SECTION A1X15



CLARA-W SECTION A1X19

NORTH



PLAN

LEGEND

A1X19 X=1900 — A1X19 X=1900

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3-D SLOPE STABILITY ANALYSIS; FACTOR-OF-SAFETY (FS) AS SPECIFIED

CLARA-W CROSS-SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

GRAPHIC SCALE

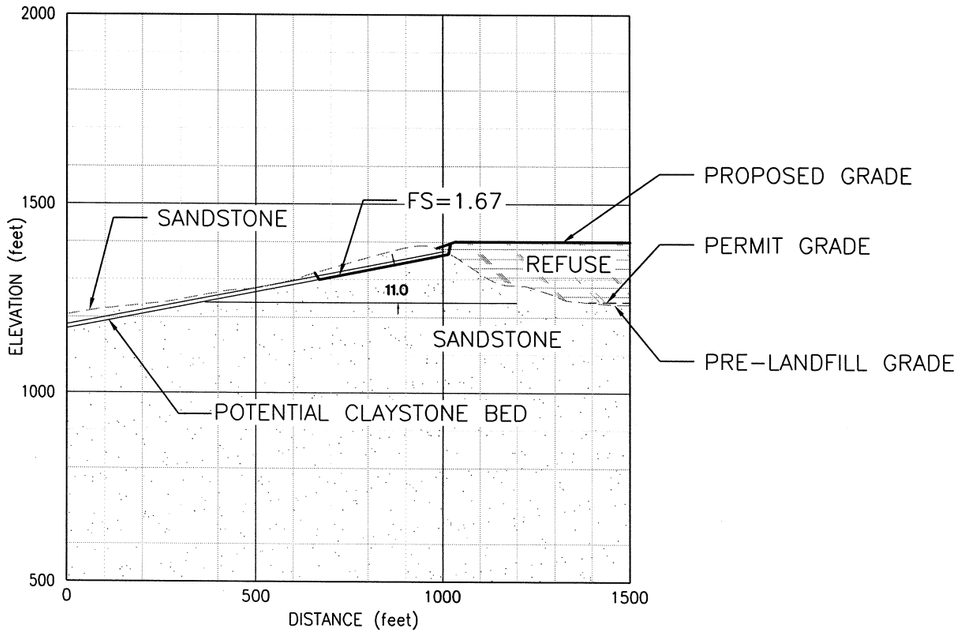
600 0 300 600 1200

(IN FEET)

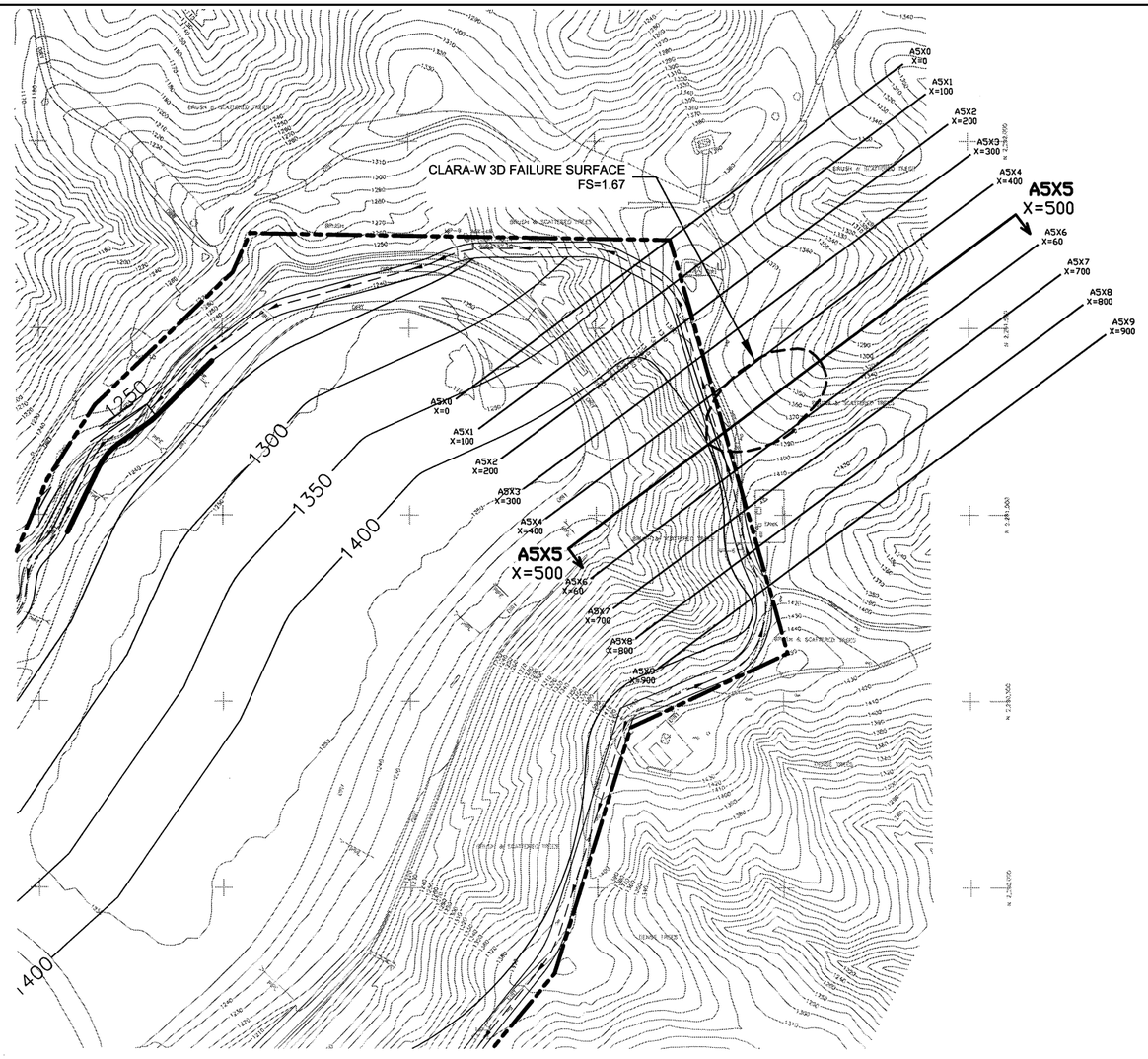
1 inch = 600 ft.

Source: GeoLogic Associates (2004).

Figure 5.2-3
South-Facing Slope: Potential Failures Daylighting at Proposed Grade



CLARA–W SECTION A5X5



PROPOSED GRADE PLAN

NORTH

LEGEND

A5X5 X=500

A5X5 X=500

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3–D SLOPE STABILITY ANALYSIS; FACTOR–OF–SAFETY (FS) AS SPECIFIED

CLARA–W CROSS–SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

GRAPHIC SCALE

400 0 200 400 800

(IN FEET)

1 inch = 400 ft.

Source: GeoLogic Associates (2004).

Figure 5.2-4
Potential Failures in Northeast-Facing Slope

5.2.4 POTENTIAL IMPACTS

5.2.4.1 Material Resources

Economically useful geologic resources do not occur in the proposed lateral expansion footprint area, with the exception of materials that may be suitable for cover or construction in further development of the landfill. Although the site is not located directly in a Mineral Resource Zone as defined by CSG, it is located near oil production areas south of the Whittier Fault.

5.2.4.2 Slope Stability

Since the proposed expansion would raise the landfill from the currently permitted elevation of 1,300 feet AMSL to a proposed maximum elevation of 1,415 feet AMSL, 3-D stability analyses were performed to search for critical potential failure surfaces that daylight at either the toe of the proposed vertical expansion (i.e., the existing 1,300-foot AMSL permitted grade) or near the top of the proposed grade (i.e., 1,415 feet AMSL). The critical factors-of-safety for the southern facing slope varied from approximately 1.66 to 2.63 (see Figures 5.2-2 and 5.2-3). It should be noted that the grading plan shown in these figures and used in the stability analyses was a preliminary plan. The finalized grading plan as shown in Figure 4.5-2 reflects a slight lowering of the deck and slope crest in some areas. Accordingly, the results of the stability analyses presented herein are slightly conservative with respect to the current design.

The lateral expansion slope at the northeastern portion of the site was only analyzed for the proposed grade since the lower, permitted grades do not overlie the critical failure surface. The critical factor-of-safety for this slope was approximately 1.67 (see Figure 5.2-4).

5.2.4.3 Seismicity

The active Whittier Fault abuts the southern part of the Olinda Alpha Landfill site. The Maximum Credible Earthquake (MCE) at this location is a moment magnitude 6.8 event on this fault, an event expected to generate peak bedrock accelerations of about 0.75g at the site. In order to estimate seismicly-induced permanent displacement during the MCE, a procedure developed by Bray and Rathje (1998) for municipal solid waste landfills was used. Based on a yield acceleration of 0.16 g for the more critical southern facing slope, no significant seismic displacements are anticipated at the site during the MCE.

5.2.5 MITIGATION MEASURES

G-1 Prior to construction of the lateral expansion area, additional geologic data will be obtained and subsequent slope stability analyses will be conducted to verify assumptions made for the stability analysis included in Appendix L.

G-2 Geologic mapping will be conducted during construction to identify any changes in geologic structure that may impact the stability analysis conducted for the lateral expansion design.

5.2.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above mitigation measures, the potential for impacts to geology and soils will be less than significant.

5.3 HYDROGEOLOGY AND WATER QUALITY

5.3.1 EXISTING CONDITIONS

5.3.1.1 Regional Hydrogeology

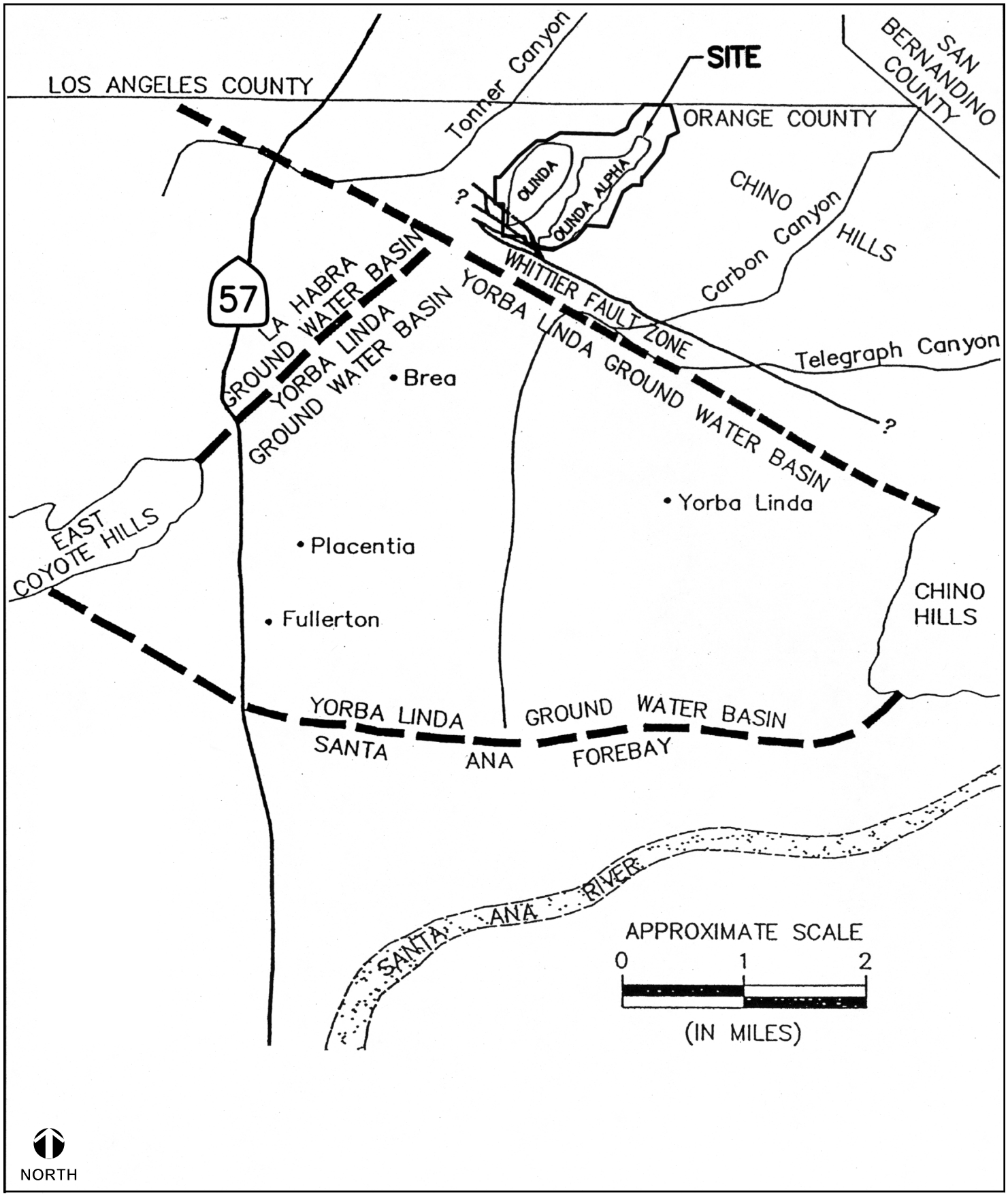
Olinda Alpha Landfill is located in the southern foothills of the Puente Hills, in the northernmost part of Orange County as shown on Figure 5.3-1. The Olinda Alpha Landfill consists of three contiguous waste management units (WMUs): Olinda Canyon to the west, Olinda Alpha Canyon to the east, and Center Ridge between the two canyons. The Miocene bedrock of the Puente Hills is not regarded to be a water bearing resource due to the low hydraulic conductivities and poor water quality that make the commercial exploitation of groundwater impractical (California Department of Water Resources (CDWR), 1961 and 1967). As a result, the Puente Formation is regarded to be a bedrock aquitard which is a lithologic unit that can store groundwater but can only transmit it slowly.

In contrast, fresh water-yielding sand and gravel aquifers occur throughout the Pleistocene sedimentary section in the Yorba Linda and La Habra Basins. According to Turnbull and Wiebe (1986), these permeable units are separated from each other by silty or clayey intervals, which in some instances act as confining horizons. For convenience, the aquifers are grouped by formational name as follows: the unconfined alluvial aquifer, the underlying La Habra aquifer and the deeper San Pedro aquifer. Underlying the Pleistocene section are the bedrock aquitards of the Fernando and Puente Formations (including the Sycamore Canyon aquitard that daylights near the landfill, immediately south of the Whittier Fault Zone).

In addition to the regional aquifers and bedrock aquitard, the alternating sequence of sandstones and shales typical of the Puente Formation leads to the development of small volume perched groundwater zones where a shale interval retards the downward migration of vadose water through a body of sandstone. Day lighting of these perched groundwater zones is responsible for the low yield seeps and springs sometimes exposed by grading on the Olinda Alpha Landfill property.

Finally, Holocene unconsolidated deposits, such as landslide debris or canyon alluvium, could also have high hydraulic conductivities, but their limited thicknesses do not allow for the storage or transmission of large volumes of water. From the hydrogeologic standpoint, they can best be regarded as small perched groundwater zones with limited continuity with the underlying aquitard.

Along the south flank of the Puente Hills, the Whittier Fault Zone brings the bedrock aquitard of the Puente Hills into contact with the regional aquifers of the Yorba Linda and La Habra Basins. The hydrogeologic impact of the Fault is uncertain in the area of the landfill because, although the faulted rocks are strongly sheared and altered to clay, the configuration of the water table does not back-up against the Fault, as would be expected if it acted as a hydrogeologic barrier.



Source: Geosyntec (1993a).

Figure 5.3-1
Regional Hydrogeology

5.3.1.2 Local Hydrogeology

Local hydrogeologic conditions on the Olinda Alpha Landfill property are monitored by 28 groundwater monitoring wells. Twenty one groundwater extraction wells are located at the toe of Olinda and Olinda Alpha Canyons and are part of a Corrective Action System (CAS) to treat landfill impacted groundwater. Some of the groundwater monitoring wells are used to determine the effectiveness of the CAS.

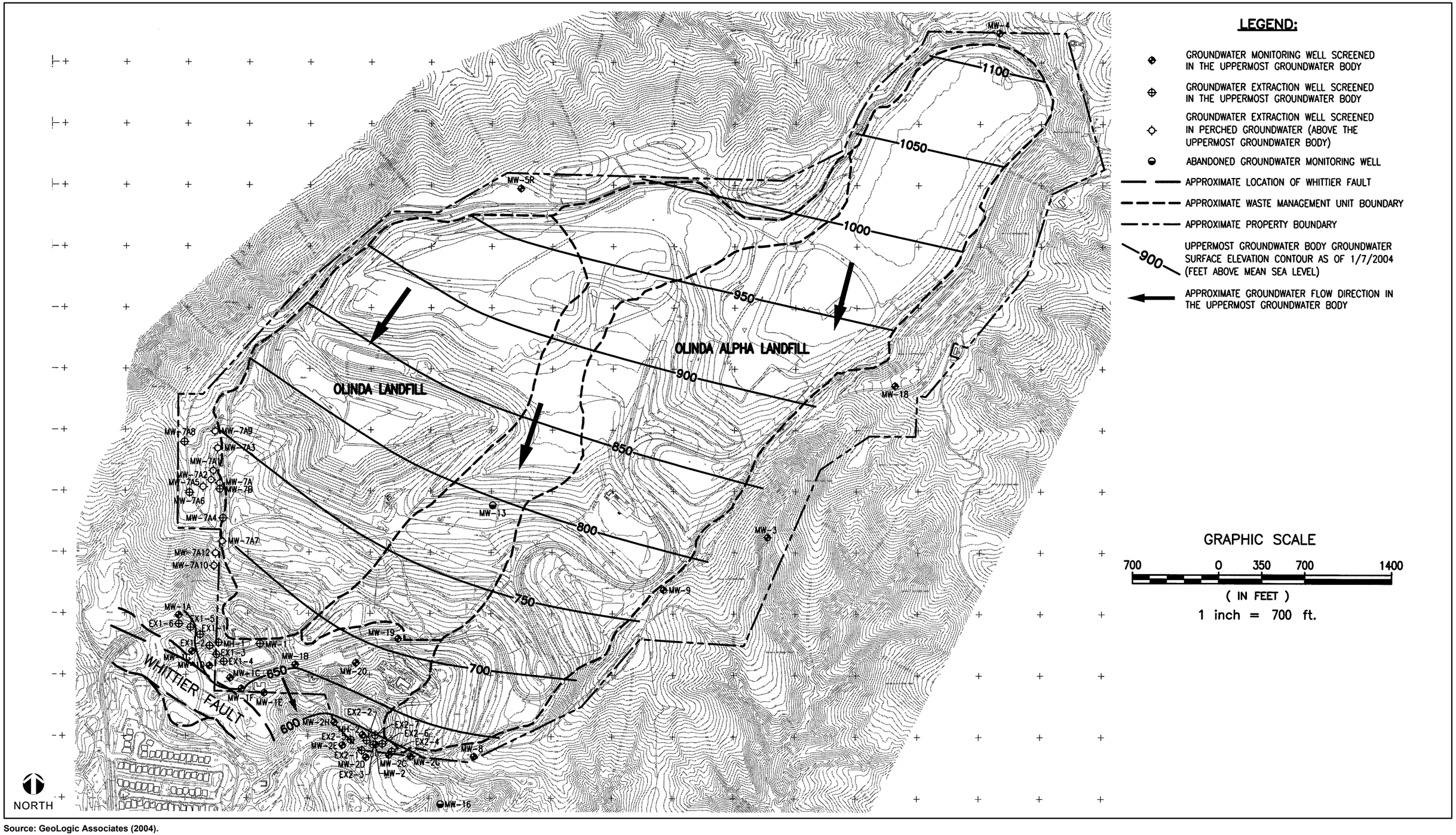
Groundwater equipotential lines developed for the site from monitoring well data consistently show flow from north to south towards the Whittier Fault as shown on Figure 5.3-2. Locally, especially along the ridge tops surrounding the landfill property, the groundwater flow direction is away from the ridge tops towards the adjacent canyons. Near the western edge of the Olinda Landfill property, a perched groundwater body is locally controlled by the dip of siltstone beds so that LFG impacted fluids originating in close proximity to the landfill are flowing toward an adjacent canyon rather than the typical situation where fluids originating within the landfill flow toward the mouth of Olinda or Olinda Alpha Canyons (GeoSyntec, 1994).

Groundwater occurs primarily in silty sand layers within the continuous groundwater below the Olinda Alpha Landfill property. Slug tests and laboratory testing of in situ samples collected from borings converted to monitoring wells yielded hydraulic conductivity values of 1.00E-05 to 1.00E-08 cm/sec (GeoSyntec, 1993). Slug tests performed in well MW-7A which monitors the perched groundwater body on the west ridge of the Olinda Canyon unit yielded a calculated hydraulic conductivity of 2.00E-05 cm/sec (GeoSyntec, 1993).

5.3.1.3 Groundwater Monitoring

Groundwater underlying the Olinda Alpha Landfill property is monitored by wells that are sampled as required by the site Waste Discharge Requirements (WDRs) and Monitoring and Reporting Program (M&RP) (Order No. 99-33) for Olinda Alpha Landfill. Groundwater monitoring is performed semi-annually with an annual summary report as required by the WDRs (WDR Order No. 99-33). A more rigorous Constituent of Concern (COC) testing program is employed every five years under which a larger, more broad-based list of analytes is analyzed for and reported. The COC testing is a method of re-evaluating the site groundwater chemistry and the M&RP can be amended or altered to reflect changes to the groundwater regime or chemistry. The site is currently in a Corrective Action Program (CAP) to remediate volatile organic compounds (VOCs) from groundwater at the mouths of the Olinda and Olinda Alpha Canyons and from perched groundwater flowing away from the western boundary of the Olinda Canyon part of the landfill.

The M&RP specifies four types of groundwater monitoring programs to be implemented at Olinda Alpha Landfill. The Detection Monitoring Program (DMP) monitors and analyzes groundwater samples from approved points of compliance for the landfill to identify potential releases. The DMP includes an analysis of GW chemistry to identify trends or changes in the organic/inorganic qualities of the groundwater. A CAP is currently in place and monitors the efficacy of the remediation system (which consists of source controls and a groundwater extraction and treatment system). A Groundwater Extraction Monitoring Program (GEP) tests



Source: GeoLogic Associates (2004).

Figure 5.3-2
Site Hydrogeology

water from the extraction wells and seeps to monitor the long term chemical concentration trends of the impacted water before it is treated. Lastly, the Groundwater Treatment Monitoring Program (GTP) monitors the quality of the treated groundwater or seep effluent to test the effectiveness of the treatment system.

Prior to 1992, the monitoring network consisted of eight wells (MH-1, MH-2, MW-1, MW-2, MW-3, MW-4, MW-5 and MW-6) (Hinkle, 1988). Another 16 monitoring wells were added to the system between July 1992 and September 1993 (MW-1A, MW-1B, MW-2A, MW-2B, MW-2C, MW-7B and MW-8 through MW-17) (GeoSyntec, 1993). Finally, three additional wells were installed in 1993 to monitor the hydrogeologic characteristics of a lens of perched water located beneath the ridge that forms the west boundary of the site (MW-7A, MW-7A1 and MW-7A2) (GeoSyntec, 1993). An extraction well array was also added to remediate the perched aquifer flowing away from the west side of the Olinda Canyon unit. This system is currently inactive. The existing site monitoring system consists of the wells shown in Table 5.3-1.

TABLE 5.3-1
OLINDA ALPHA LANDFILL MONITORING SYSTEM WELLS

WELL	AQUIFER	STATUS	MONITORING PROGRAM
MW-3	Bedrock	Downgradient	Detection Monitoring
MW-4R	Bedrock	Upgradient	Detection Monitoring
MW-5R	Bedrock	Upgradient	Detection Monitoring
MW-8	Bedrock	Downgradient	Detection Monitoring
MW-9	Bedrock	Downgradient	Detection Monitoring
MW-18	Bedrock	Downgradient	Detection Monitoring
MW-19	Bedrock	Downgradient	Detection Monitoring
MW-20	Bedrock	Downgradient	Detection Monitoring
MW-1C	Bedrock	Monitoring	Corrective Action
MW-1D	Bedrock	Monitoring	Corrective Action
MW-1E	Bedrock	Monitoring	Corrective Action
MW-1F	Bedrock	Monitoring	Corrective Action
MW-1G	Bedrock	Monitoring	Corrective Action
MW-2C	Bedrock	Monitoring	Corrective Action
MW-2D	Bedrock	Monitoring	Corrective Action
MW-2E	Bedrock	Monitoring	Corrective Action
EX1-1 through EX1-6	Bedrock	Extraction	Remediation
MW-1	Bedrock	Extraction	Remediation
EX2-1 through EX2-7	Bedrock	Extraction	Remediation
MW-7A	Perched	Extraction – Inactive	Remediation
MW-7A1	Perched	Extraction – Inactive	Remediation
MW-7A3	Perched	Extraction – Inactive	Remediation
MW-7A4	Perched	Extraction – Inactive	Remediation
MW-7A5	Perched	Extraction – Inactive	Remediation
MW-7A7	Perched	Extraction – Inactive	Remediation
MW-7A10	Perched	Extraction – Inactive	Remediation

Source: GeoSyntec, 2003.

In addition to the monitoring system wells included in Table 5.3-1, the following wells are inactive and may be used to measure groundwater levels at the site: Wells MH-1, MH-2, MW-

1A, MW-1B, MW-2, MW-2G, MW-2H, MW-7A2, MW-7A6, MW-7A8, MW-7A9, MW7A12 and MW-7B.

5.3.1.4 Groundwater Quality

Concentrations of inorganic chemical compounds (e.g. total dissolved solids, sulfate, chloride) are historically variable around the Olinda Alpha Landfill property and are, therefore, not considered good indicators of a release from the landfill. According to GeoSyntec (1993), significant concentrations of VOCs were consistently detected in three areas of the site: the perched water body on the west ridge of Olinda Canyon, the toe of Olinda Canyon unit and the toe of Olinda Alpha Canyon unit.

Prior to establishment of a groundwater remediation system, a total of 21 different VOCs were detected in downgradient wells at the Olinda and Olinda Alpha units. Of the 21 different VOCs detected, 11 were above the California State Department of Health Services established Maximum Contaminant Levels (MCL). The total VOC concentration in groundwater samples collected from the perched groundwater body was determined to be as high as 640 microgram per liter (ug/L) in September 1993. The total historical VOC concentrations in groundwater collected from the Olinda and Olinda Alpha Canyon monitoring wells has ranged from 91 ug/L and 56 ug/L respectively (GeoSyntec, 1993) to non-detectable (GeoSyntec, 2003).

5.3.1.5 Site Corrective Action Program

The CAP was instituted to remediate VOCs present in groundwater at the mouths of Olinda and Olinda Alpha Canyons and for the perched groundwater flowing away from the west side of Olinda Canyon. The CAP consists of pump and treat systems that extract impacted groundwater from the wells in alluvium and bedrock, treating the water using ultra violet radiation to breakdown the VOCs, and using the treated effluent for site construction and operations or dust control. The total VOC concentrations for the Olinda, Olinda Alpha and seep collection water varies from a historical high of nearly 160 part per billion (ppb) in the spring of 1999 for water from the Olinda Canyon collection tank to non-detectable concentrations at various times for water from all three tanks.

The RWQCB-SA approved an alternative liner system for the Center Ridge part of the landfill. The alternative liner consists of a leachate collection and recovery system (LCRS) on top of scarified and recompacted bedrock prior to placement of refuse. Leachate is collected and stored in a 10,000 gallon tank and hauled off-site for proper disposal.

5.3.2 THRESHOLDS OF SIGNIFICANCE

Groundwater chemistry data collected from the DMP, CAP and GEP at Olinda Alpha Landfill is subject to analyses to determine whether or not a release of inorganic, metals or VOCs has occurred. The statistical analysis methods are specified in Title 27 of the CCR. If a release is detected, the Regional Water Quality Control Board (RWQCB-SA) is notified and the landfill operators are required to perform a study to evaluate the impacts and propose remedial activities to alleviate the problem. Impacts to hydrogeology and water quality would be considered

significant and adverse if the proposed project would result in the following conditions:

- Have a significant adverse impact on groundwater quality or otherwise substantially degrade water quality.

For inorganic and metals analyses, the data can be compared within the pooled data set for each respective well or by comparison of the downgradient data with the upgradient well chemistry. The statistical methods require that the effects of seasonality (the effects of the cyclic nature of the weather systems in southern California impacting chemistry) be accounted for. In addition, the statistical approach requires an analysis for long term trends that may be occurring within the data set.

Because VOCs are not typical of the upgradient groundwater chemistry at Olinda Alpha Landfill, a non-statistical approach to inspection of the groundwater database is undertaken. A VOC release is indicated if one of the following two conditions occurs:

- Two or more of the VOCs in the required testing schedule exceed the laboratory Method Detection Level (MDL).
- One or more of the VOCs in the required testing schedule exceeds the laboratory Practical Quantitation Level (PQL).

Confirmation testing for VOCs is required if a tentative VOC release is indicated.

5.3.3 METHODOLOGY RELATED TO HYDROGEOLOGY AND WATER QUALITY

Potential impacts on water quality were assessed by comparing the groundwater and surface water quality data available for the site with water quality objectives established by local, state, and federal regulatory agencies. Surface water, groundwater and landfill-impacted liquids are currently monitored on a semi-annual basis in accordance with the terms of Order No. 99-33 issued by the Santa Ana RWQCB-SA. Groundwater, surface water (seeps and springs) and condensate samples are collected from established monitoring wells or designated sampling locations and analyzed for a suite of constituents including general minerals, metals, and VOCs. The chemistry results are statistically or deterministically analyzed to evaluate whether or not a release has occurred, or whether the nature of a release is changing over time. This assessment was based on the latest groundwater monitoring reports provided by IWMD (GeoSyntec, October 2003).

5.3.4 POTENTIAL IMPACTS

The Olinda Alpha Landfill consists of three contiguous WMUs: Olinda Canyon to the west, Olinda Alpha Canyon to the east and Center Ridge between the two canyons. The Olinda and Olinda Alpha WMUs are unlined and have no LCRS in place. The Center Ridge WMU also does not have a liner because an alternative liner exemption was granted. The alternative liner exemption was granted based on an analysis showing that the leachate volumes calculated to be generated and the low hydraulic conductivity of the native, in place soils would not allow for significant transport of VOCs from the waste unit and that any VOC impacted groundwater

would be collected and hauled away (GeoLogic Associates, 1996). It was also determined that the Central Ridge WMU does not overlie a water bearing area as identified by the DWR and as shown in the Basin Plan. Therefore, no beneficial uses are identified for the area underlying the Olinda Alpha Landfill property. Studies indicate that the Whittier Fault Zone acts as a barrier to the movement of groundwater to the La Habra - Yorba Linda Groundwater Sub-basin, which is located south of the Fault. The area immediately south of the Fault Zone is an oil producing area that has naturally occurring petroleum seeps present at ground surface. As a result, the water quality in this area is severely impaired by naturally occurring hydrocarbons.

The LCRS under the Central Ridge portion of the landfill and proposed for the lateral expansion areas will aid in reducing the impacts to groundwater upgradient of the groundwater extraction and treatment system. In addition, the lateral expansion area will have a composite liner system that meets federal and state requirements for lateral expansions which will need to be approved by the RWQCB-SA. This design may be amended based on the geologic conditions encountered and if allowed by the RWQCB-SA. Impacts from the expansion area and Central Ridge are expected to be insignificant because the area of coverage is small and the LCRS provides very efficient capture in the lined areas especially when compared to the unlined landfill.

VOCs have been detected in groundwater near the mouth of the Olinda and Olinda Alpha Canyons WMUs. A CAS is in place at the site to collect and treat groundwater impacted with VOCs. The system consisting of groundwater extraction wells and a treatment plant are operational and detection monitoring downgradient from the extraction wells demonstrates system effectiveness. Detections of VOCs in groundwater are likely to continue during the extended operations and throughout the post-closure period. Throughout that time frame, the CAS may be required, as necessary, to reduce impacts to a level of insignificance.

5.3.5 MITIGATION MEASURES

HW-1 A composite liner or an alternative to the prescriptive composite liner and LCRS will be placed in the lateral expansion area to intercept and collect leachate for disposal off-site or use as dust control, as approved by the RWQCB-SA. A subdrain system will be installed, as necessary, to intercept seeps below the liner. The prescriptive or alternative liner, LCRS and subdrain will be approved by the RWQCB-SA and comply with federal and state requirements (27 CCR).

HW-2 The site will continue to comply with the site's Waste Discharge Requirements and Monitoring and Reporting Program requirements imposed by the RWQCB-SA for the protection of water quality.

HW-3 The Corrective Action System in place at the landfill will continue operating during the extended landfill operations if detections of VOCs in groundwater continue.

5.3.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above mitigation measures, the potential for impacts to groundwater will be less than significant.

5.4 SURFACE WATER HYDROLOGY

5.4.1 EXISTING CONDITIONS

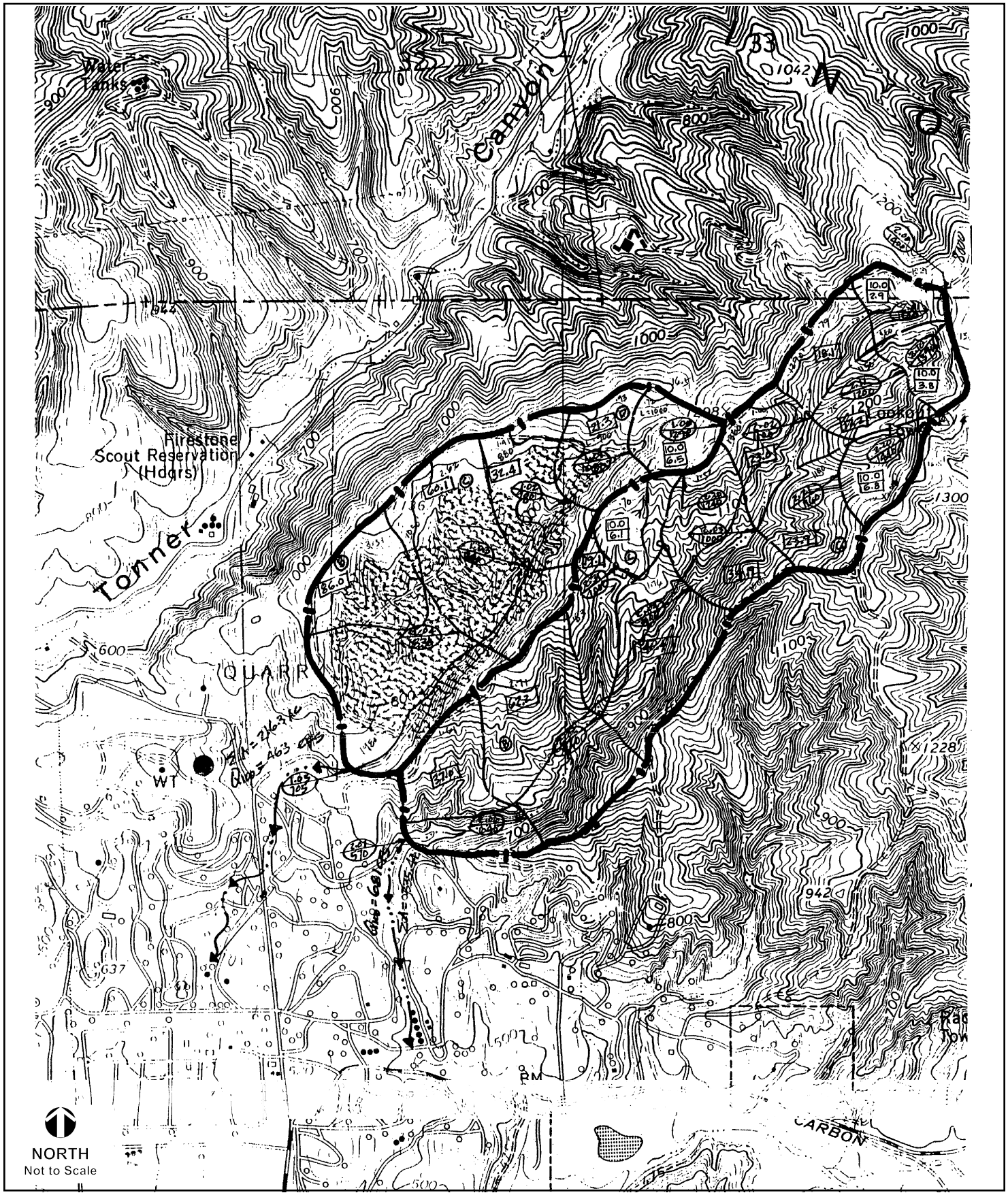
According to the Watershed and Coastal Resources Division of the Resources and Development Management Department (RDMD) of Orange County, Olinda Alpha Landfill is in the northeast part of the Coyote Creek Watershed that drains to the San Gabriel River and then to the Pacific Ocean.

Olinda Alpha Landfill was originally two separately permitted landfills, the Olinda Landfill and the adjacent Olinda Alpha Landfill which were geologically separated by a ridge between two canyons. In the "Olinda/Olinda Alpha Landfill Vertical Expansion Project, Master Storm Drain Design" (MSDD) report (Bryan A. Stirrat and Associates, April 11, 1994) prepared for the permitted plan, the calculated run-off for the landfill was divided into two main tributaries. The pre-landfill hydrology for the westerly tributary of Olinda Alpha Landfill was 216.3 acres and had a 100-year peak discharge of 463 cubic feet per second (CFS) as shown on Figure 5.4-1. The easterly tributary of the old Olinda Alpha Landfill was 335.4 acres with a 100-year peak discharge of 681 CFS. The currently-permitted developed condition for Olinda Alpha Landfill has a top deck maximum vertical elevation of 1,300 feet AMSL.

The primary function of the surface water drainage control system for Olinda Alpha Landfill is to minimize erosion and minimize the potential infiltration of surface water run-on into the refuse disposal areas. The current drainage control system for Olinda Alpha Landfill, as shown on Figure 5.4-2, consists of permanent perimeter drainage channels along the north, east and west boundary of the site, earthen berms, down-drains, sloping fill deck areas, intermediate slope bench drains and detention/desilting basins (Basins A and B). These Basins were designed to collect developed condition peak flows, but release flows to pre-developed conditions.

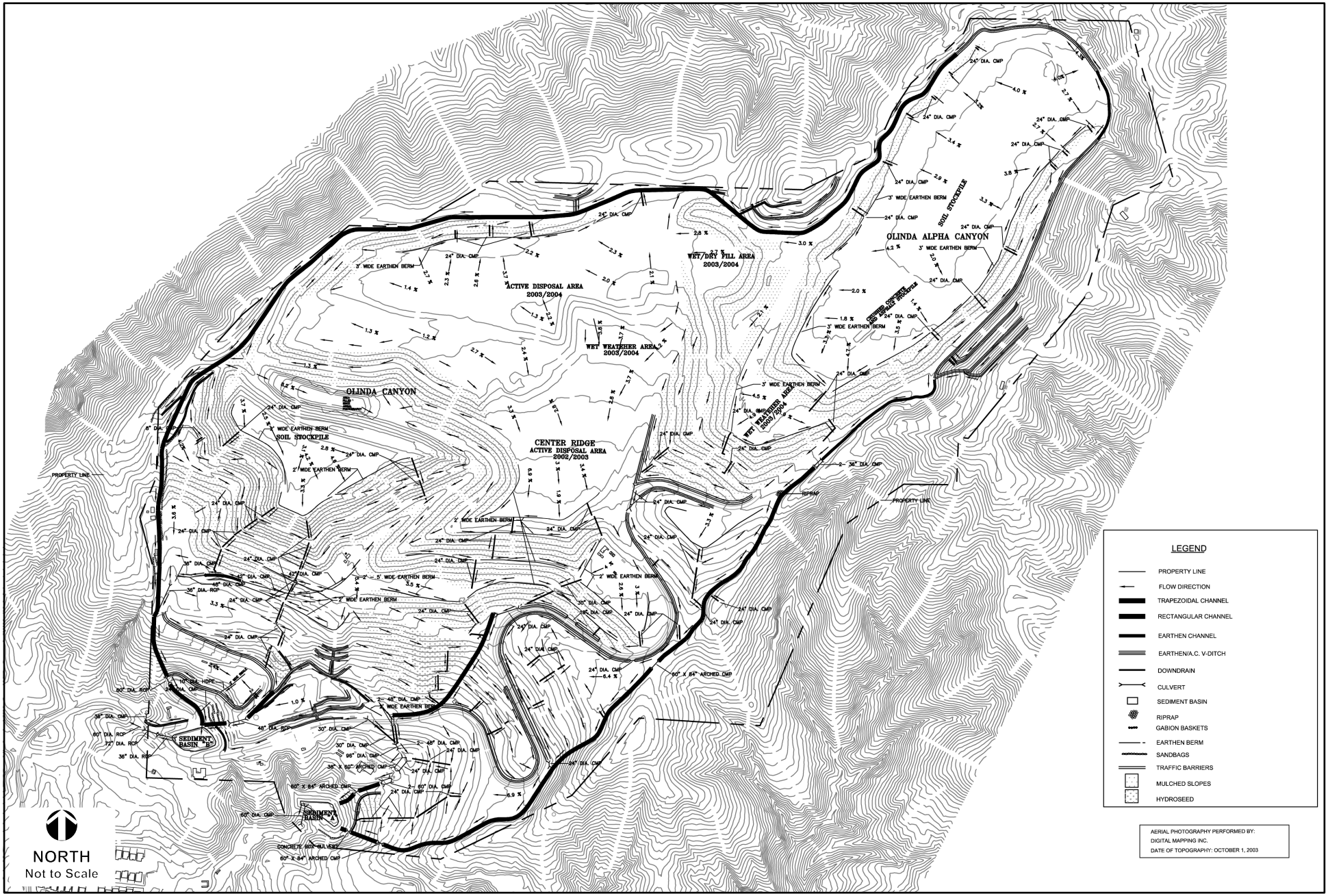
The flatter surface areas or decks of the disposal area are graded to promote lateral sheet flow run-off to down drains on the slopes. Surface water run-off from the disposal area slopes are controlled by intermediate benches or access roads which are graded to direct flows toward the inside of the bench or road and then into one of the down drain inlets on the bench or into the perimeter drainage channels.

All surface waters collected by the various drainage controls on the landfill property are eventually directed to the perimeter drainage channels which run along the entire perimeter of the disposal areas and discharge into detention basins. The perimeter drainage channels are constructed of various materials including concrete, armor-flex and corrugated steel pipe (CSP). Concrete channels and CSP are generally used for those native soil areas where surface water velocities are relatively higher due to steeper slopes. CSP is also used as culverts to carry surface water beneath on-site access roads. Armor-flex channels are used in areas where there is known refuse fill that cannot be removed. The east perimeter channel in the Olinda Alpha Canyon unit discharges into Detention Basin A located downstream of this Canyon. Surface water flows from the constructed west perimeter channel in Olinda Canyon directly discharge into Detention Basin B. Figure 5.4-2 shows the location of the existing drainage control features and Figure 5.4-3 presents the final drainage control features when the site is fully developed.



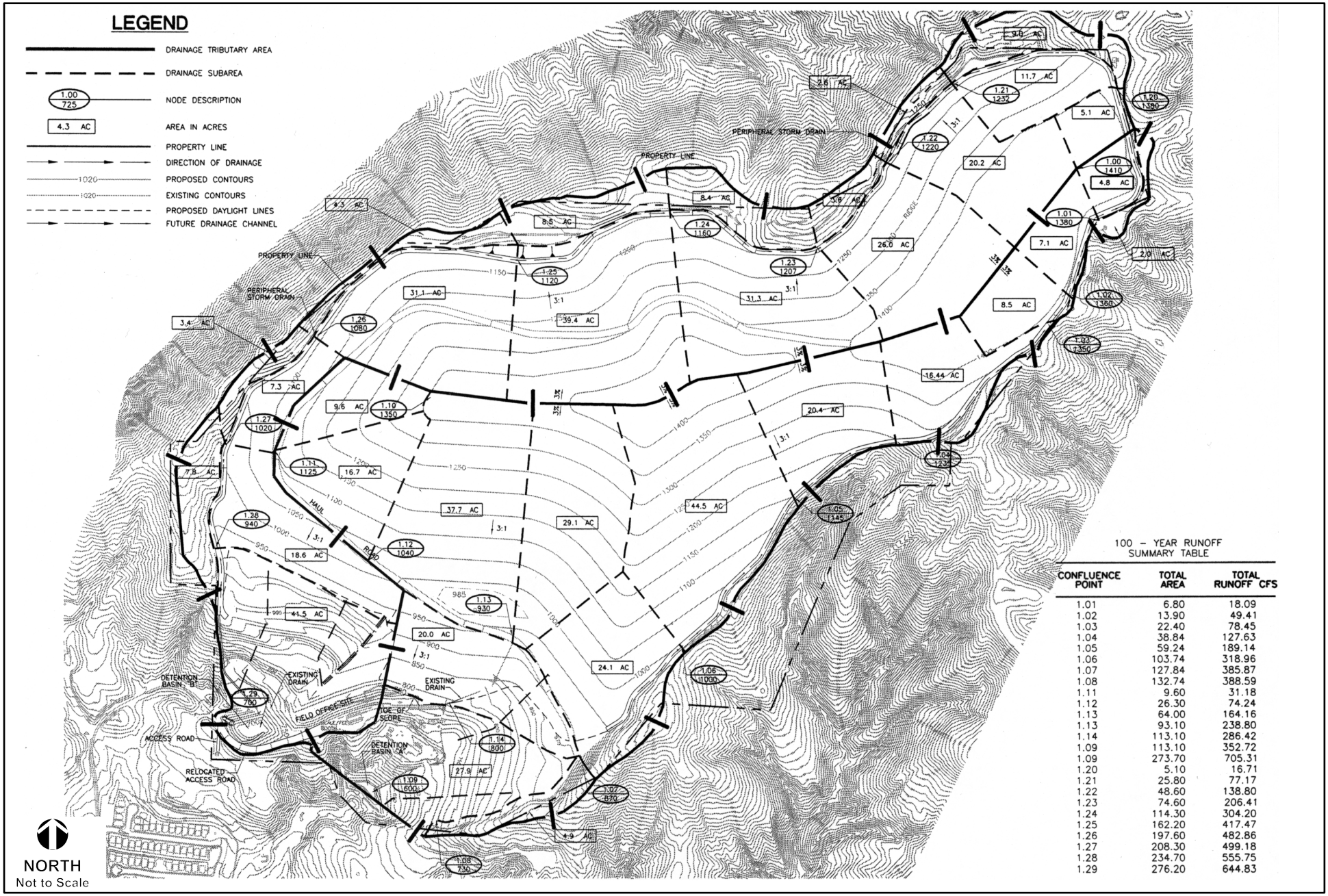
Source: Bryan A. Stirrat & Associates (2004).

Figure 5.4-1
100 Year Pre-Landfill Condition Hydrology Map



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.4-2
Storm Water Drainage & Erosion Control System - 2003



100 – YEAR RUNOFF SUMMARY TABLE

CONFLUENCE POINT	TOTAL AREA	TOTAL RUNOFF CFS
1.01	6.80	18.09
1.02	13.90	49.41
1.03	22.40	78.45
1.04	38.84	127.63
1.05	59.24	189.14
1.06	103.74	318.96
1.07	127.84	385.87
1.08	132.74	388.59
1.11	9.60	31.18
1.12	26.30	74.24
1.13	64.00	164.16
1.13	93.10	238.80
1.14	113.10	286.42
1.09	113.10	352.72
1.09	273.70	705.31
1.20	5.10	16.71
1.21	25.80	77.17
1.22	48.60	138.80
1.23	74.60	206.41
1.24	114.30	304.20
1.25	162.20	417.47
1.26	197.60	482.86
1.27	208.30	499.18
1.28	234.70	555.75
1.29	276.20	644.83

Source: Bryan A. Stirrat & Associates (2004).

Figure 5.4-3

100 Year Developed Condition (with Final Drainage Control Features) Hydrology Plan

5.4.2 THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines define the potential impacts of a project as normally significant if it will "…cause substantial flooding, erosion or siltation…"

For flood events, Section A.2 of the Orange County Hydrology Manual states "It is the goal of the Agency to provide 100-year return frequency flood protection for all habitable structures and other non-flood proof structures." Landfill regulatory requirements in Title 27 of the CCR dictate separation and desiltation of all storm flows coming in contact with landfill operations. Section 20365(a) and Table 4.1 of 27 CCR require that "Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtipping under the precipitation conditions specified in Table 4.1 for each class of waste management unit." For Olinda Alpha Landfill, Table 4.1 requires surface water drainage systems to be designed for a 100-year, 24-hour storm event. Finally, federal law dictates that landfills operate under an Industrial National Pollution Discharge Elimination System (NPDES) Permit to discharge storm flows. The criteria and restrictions of the NPDES Permit and the Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) that accompany the NPDES Permit were also considered in assessing the hydrologic impacts of the proposed Olinda Alpha Landfill expansion.

For the purposes of evaluating the potential hydrological impacts of the expansion, a significant impact was defined as an impact which does not meet the language and intent of the CEQA Guidelines, the site regulations for landfills (27 CCR), the Orange County Hydrology Manual, the project description and the applicable NPDES guidelines and BMPs.

5.4.3 METHODOLOGY RELATED TO SURFACE WATER HYDROLOGY

The Orange County Public Facilities and Resources Department (now called the RDMD) Hydrology Manual (1999) and the Advance Engineering Software (AES) computer program Rational Method were used to calculate the 100-year, 24-hour run-off peak for the entire Olinda Alpha Landfill with the proposed expansion. The AES computer program was specifically designed for Orange County and uses the latest rainfall data, nomographs, charts and equations for the Rational Method required in the hydrology manual. AES is also the accepted software used by RDMD which is the agency responsible for the major flood control facilities downstream of the landfill.

The Rational Method (Q=CIA) described in the Hydrology Manual relates rainfall intensity (I), run-off coefficient (C) and the drainage area (A) to the direct peak run-off (Q) from the drainage area. The values of C and I are based on drainage area characteristics such as land use, soil type, land surface and the time of concentration. Time of concentration (TC) is defined as the interval of time required for the flow at any point to reach its maximum flow rate under uniform rainfall intensity.

Once the peak flows for the proposed Olinda Alpha Landfill expansion grades were calculated, a unit hydrograph and basin analysis was performed using the AES software for both basins to

check for adequate sizing.

5.4.4 POTENTIAL IMPACTS

5.4.4.1 Surface Water Flows

The run-off tributaries used for the Olinda Alpha Landfill MSDD are consistent with the pre-developed condition run-off tributaries and associated flows. The developed condition hydrology plan is presented in Figure 5.4-3. Flows from the deck of the landfill are directed via berms to a network of down drains and benches down the slopes to the perimeter channels (east and west channels). Once the run-off has been routed to the perimeter channels it is then directed to the detention/desilting basins. Because the detention/desilting basins were designed to receive developed condition peak flows and release at pre-developed flows, the layout of the expansion design conforms to the original design intent. Although the developed peak Q will change from the MSDD, the basins have sufficient capacity to limit the run-off out of the basins to predeveloped conditions; thus resulting in no additional impact to downstream drainage tributaries.

Interim drainage control improvements in place at the landfill, as shown in Figure 5.4-2, will continue to be developed as the landfill reaches its ultimate proposed grades. Improvements to the lower segment of the east channel (approximately 3,000 linear feet from the Basin) are to be reconstructed in the summer of 2004. The reconstructed channel alignment and materials were designed to accommodate a greater flow capacity and to allow for differential settlement. As indicated in the design report for the reconstruction of the east channel, the capacity for the channel is 476 CFS which accommodates ultimate flows to be directed into that channel. The total peak run-off for the east tributary at the permitted and proposed final grades is 767 CFS and 705 CFS, respectively. The balance of the peak run-off for the east tributary will require an alternate drainage feature (i.e., trapezoidal channel along the access road, a series of small down drains along the slopes from the deck) to be constructed prior to reaching permitted final grades and are required regardless of the proposed expansion of the site. These improvements would be in addition to the permanent portion of the channel to be reconstructed in summer of 2004.

For the west tributary of the site, the proposed final grades will increase the peak flow in the west channel by 30 CFS over the permitted plan flows. The west channel capacity has been analyzed with the additional flow at critical sections of the channel and it has been determined that the west channel has sufficient capacity to convey the increased flow (see Appendix K).

At the point of peak confluence, Basin A will have a peak inflow of 705 CFS which is 62 CFS less than the MSDD peak inflow calculation of 767 CFS for flow into this Basin. Basin B will have a peak inflow of 645 CFS which is 30 CFS more than the MSDD peak inflow of 615 CFS to the basin. Basin B has been analyzed and has enough capacity to store the additional peak flow and maintain the peak outflow to pre-developed conditions (see Table 5.4-1 and Appendix K).

Detention Basins A and B were designed for the purpose of limiting the run-off from Olinda Alpha Landfill to the pre-developed condition and provide desilting for the run-off. The Basins

will continue to serve that function with the proposed vertical and lateral expansion for the project. The complete hydrology study and hydraulic calculations are included in Appendix K. The pre-developed condition and developed condition hydrology plans are provided in Figures 5.4-1 and 5.4-3, respectively.

TABLE 5.4-1
OLINDA ALPHA LANDFILL EXPANSION
STORMWATER RUN-OFF AND BASIN DISCHARGES

	East Tributary (CFS)		West Tributary (CFS)	
	Peak Inflow	**Basin A Discharge**	**Peak Inflow**	**Basin B Discharge**
Pre-developed	681	NA	463	NA
MSDD	767	618	615	457
Expansion	705	642	645	463

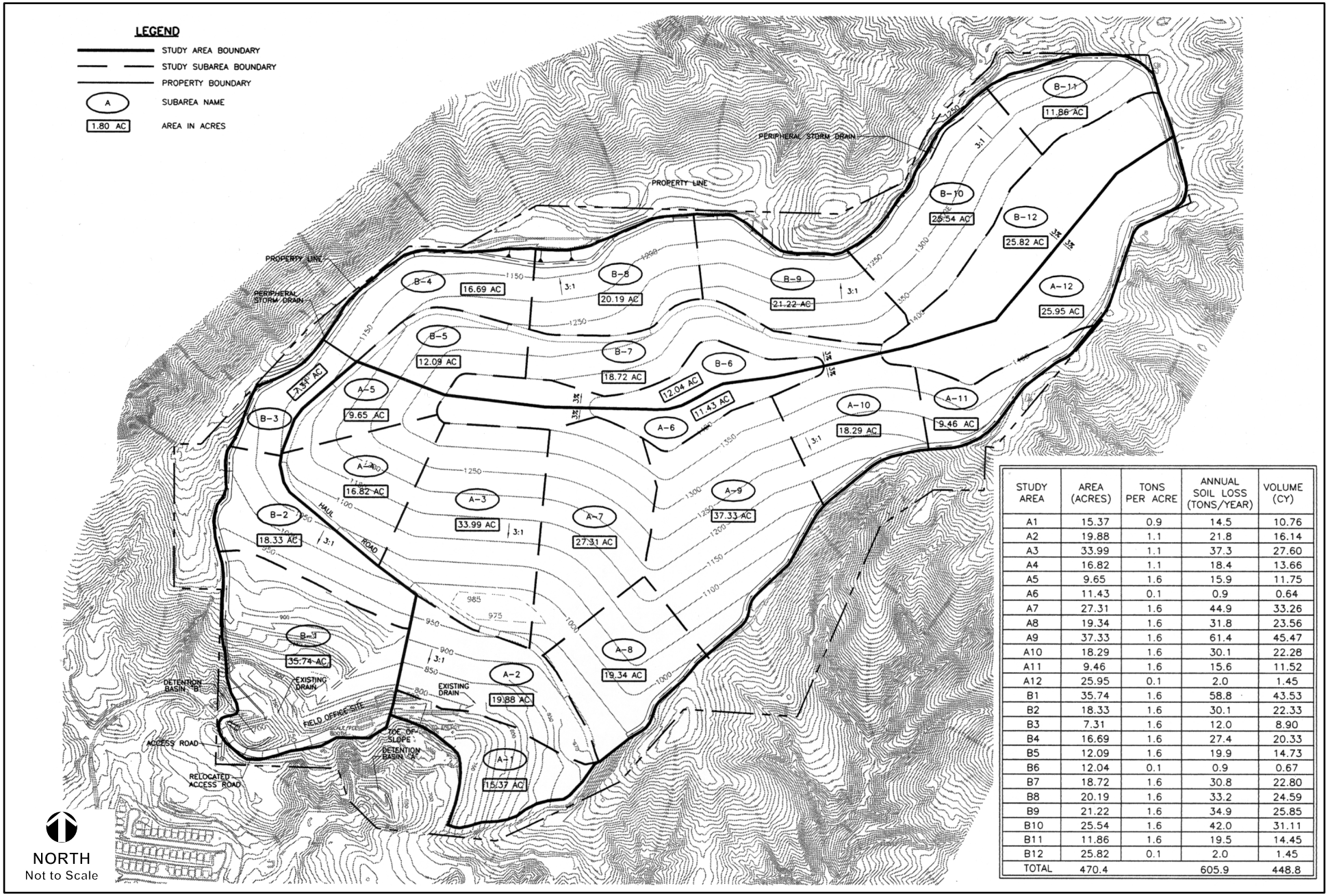
5.4.4.2 Erosion and Soil Loss

Erosion in and around active landfill areas is potentially significant because of the large area of exposed soil. The calculated soil loss for the Olinda Alpha Landfill (including the expansion area) averages 1.3 tons per acre per year (see Figure 5.4-4). Appendix K provides the soil loss analysis and Figure 5.4-4 shows the "with project" condition soil loss plan. Erosion will be controlled on the face of the active landfill by maintaining a two to three percent slope on all exposed surfaces. Similar to existing landfill operations, the slopes will be designed with benches at 40-foot interval; fiber rolls will be placed on the slopes in between the benches to reduce soil erosion; processed green material (PGM) will be used as an erosion control measure; and prior to the winter season, sand bags will be installed at strategic locations at the site and benches and decks will be regraded to have positive flows to down drains. The amount of silt picked up on the active landfill surface will be reduced further by the two existing detention/desilting basins.

5.4.5 MITIGATION MEASURES

H-1 As part of a Joint Technical Document (JTD) to be prepared by IWMD in support of a revised SWFP and WDRs for the proposed expansion, the IWMD shall present the assumptions, methods and calculations used to calculate the potential flow quantities for run-on, run-off and sediment content of storm water flow used in sizing drainage and sediment control facilities for Olinda Alpha Landfill in conformance with 27 CCR regulations.

H-2 As part of a JTD to be prepared by IWMD in support of a revised SWFP and WDRs for the expansion, the IWMD shall include surface drainage plans for Olinda Alpha Landfill expansion final grading plans, including any berms, down drain systems, perimeter drainage channel improvements and the location of off-site discharge points for run-off water in compliance with 27 CCR regulations.



STUDY AREA	AREA (ACRES)	TONS PER ACRE	ANNUAL SOIL LOSS (TONS/YEAR)	VOLUME (CY)
A1	15.37	0.9	14.5	10.76
A2	19.88	1.1	21.8	16.14
A3	33.99	1.1	37.3	27.60
A4	16.82	1.1	18.4	13.66
A5	9.65	1.6	15.9	11.75
A6	11.43	0.1	0.9	0.64
A7	27.31	1.6	44.9	33.26
A8	19.34	1.6	31.8	23.56
A9	37.33	1.6	61.4	45.47
A10	18.29	1.6	30.1	22.28
A11	9.46	1.6	15.6	11.52
A12	25.95	0.1	2.0	1.45
B1	35.74	1.6	58.8	43.53
B2	18.33	1.6	30.1	22.33
B3	7.31	1.6	12.0	8.90
B4	16.69	1.6	27.4	20.33
B5	12.09	1.6	19.9	14.73
B6	12.04	0.1	0.9	0.67
B7	18.72	1.6	30.8	22.80
B8	20.19	1.6	33.2	24.59
B9	21.22	1.6	34.9	25.85
B10	25.54	1.6	42.0	31.11
B11	11.86	1.6	19.5	14.45
B12	25.82	0.1	2.0	1.45
TOTAL	470.4		605.9	448.8

Source: Bryan A. Stirrat & Associates (2004).

Figure 5.4-4

100 Year Developed Condition (with Final Drainage Control Features) Soil Loss Plan

H-3 Diversion and drainage facilities shall be evaluated, designed, constructed and operated to accommodate the anticipated volume of precipitation and peak flows from surface run-off under the precipitation conditions specified in Title 27 of the CCR. Drainage facilities for the landfill expansion shall be designed to prevent washout of the waste management unit during a 100-year storm event.

H-4 The landfill (including the expansion area) will continue to operate under an NPDES Permit to discharge storm flows. The criteria and restrictions of the NPDES Permit and the SWPPP and BMPs that accompany the NPDES Permit will be adhered to.

H-5 Positive drainage will be ensured in the expansion area by maintaining a two to three percent slope on all landfill deck surfaces.

H-6 During all landfilling operations in the expansion area, sediment and erosion control plans will continue to be prepared and implemented on an annual basis to reduce sediment and control erosion on the landfill site.

5.4.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The potential short and long term hydrological impacts of the proposed landfill expansion will be mitigated to a less than significant level after implementation of mitigation measures H-1 to H-6, described above.

5.5 TRANSPORTATION AND CIRCULATION

This Section summarizes the assumptions, methodologies, findings and recommendations of the traffic impact study conducted for the proposed vertical and horizontal expansion of Olinda Alpha Landfill. The traffic study addresses existing traffic conditions and potential traffic impacts on the surrounding street system resulting from the proposed project and several alternatives. Appendix F provides detailed traffic data used in the traffic impact analysis.

5.5.1 EXISTING CONDITIONS

This Section summarizes existing 2004 traffic and conditions in the study area and on the road system which provides access to and from the landfill.

5.5.1.1 General Characteristics of the Existing Landfill

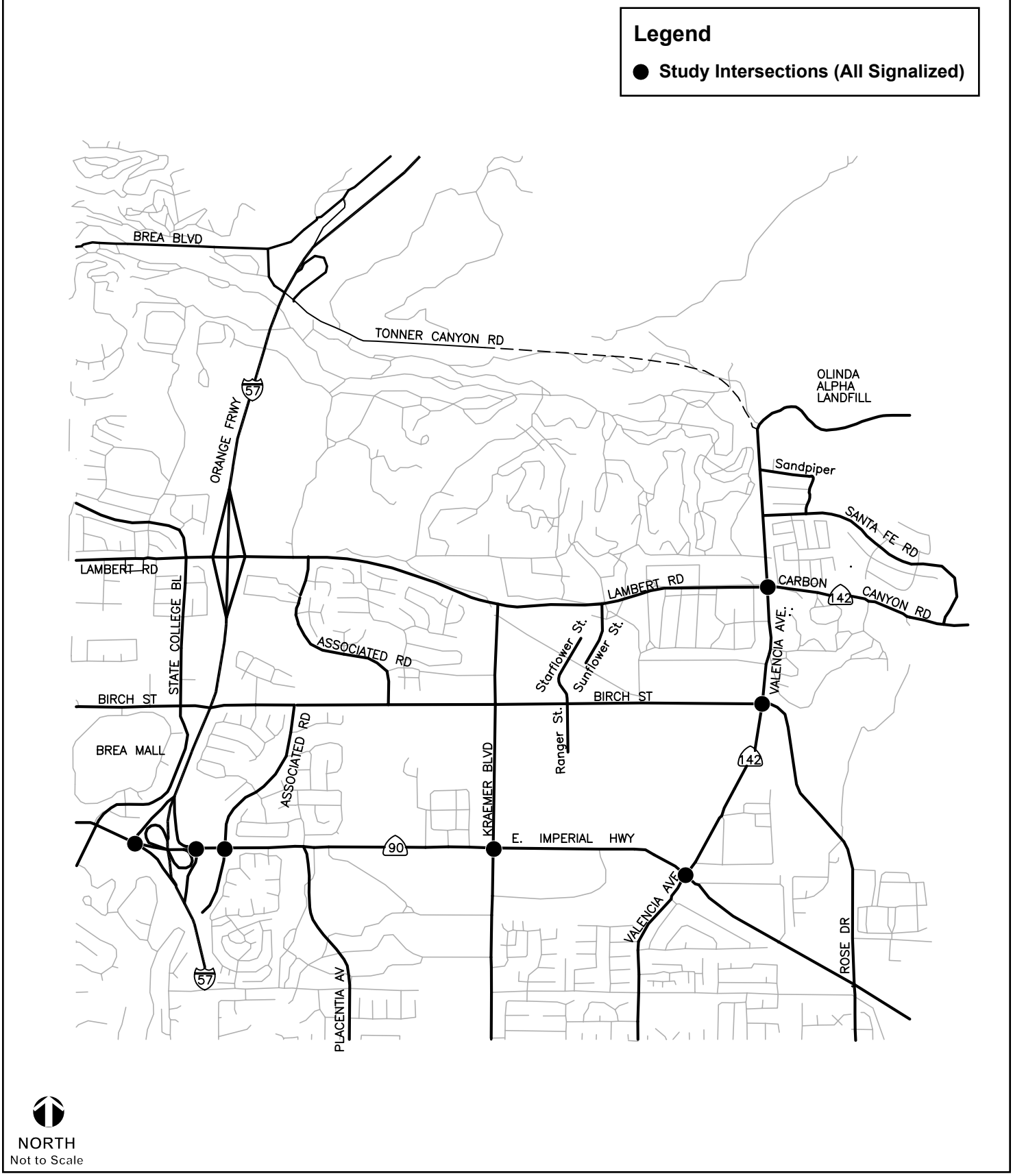
Olinda Alpha Landfill is located at 1942 Valencia Avenue near the City of Brea and north of the Olinda Ranch residential development northeast of the Lambert Road-Carbon Canyon Road/Valencia Avenue intersection, as shown on Figure 5.5-1. The landfill is open Monday through Saturday from 6:00 AM to 7:00 AM for transfer trucks only and from 7:00 AM to 4 PM for all other commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is limited to Orange County residents.

The current Olinda Alpha Landfill Solid Waste Facility Permit (SWFP) allows a daily maximum of no more than 8,000 tons per day (TPD) of municipal solid waste (MSW). In addition, an MOU with the City of Brea limits daily MSW disposal to an annual average daily tonnage limit of 7,000 TPD. The landfill also accepts an average of approximately 3,000 to 4,000 TPD of exempt commodities which include dirt, asphalt and green waste.

5.5.1.2 Current Level of Traffic Generated by the Existing Landfill

To monitor daily levels of tonnage and vehicular movements to Olinda Alpha Landfill, IWMD maintains a computer tracking system which records a variety of information about vehicles passing across the scales into the landfill including the cumulative tonnage of incoming refuse each day as well as the number of waste hauling vehicles, by vehicle type, that enter the landfill each day. Review of this computer data indicated the following vehicular activity crossing the scales into the landfill occurred during fiscal year (FY) 2003 (period between July 1, 2002 and June 30, 2003). In addition to this vehicular activity across the scales, there is other vehicular activity associated with the landfill, related to employee trips, trips associated with the Brea Green Recycling facility, mail, and miscellaneous other trips.

The following information about traffic volumes at the landfill includes only vehicular movements across the scales, into the main landfill. Movements across the scales include MSW, cover soil and green waste.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-1
Study Area - Study Intersections

1) The average number of vehicles crossing the scales at the landfill daily (based on 308 days of operation) was 888 vehicles which correspond to two-way average daily traffic (ADT) of 1,776 vehicle trips. This ADT level represents the average day of movements across the scales into the landfill during fiscal year 2003.

2) On 5% of total days (approximately 12 days in an average year), the total ADT across the scales was less than 2,200 daily two-way trips.

3) On 1% of the total days (approximately 12 days in an average year), the total ADT across the scales was less than 2,400 daily two-way trips.

4) Saturday ADT to the landfill is 88 percent of weekday ADT.

5) The highest weekday activity hour at the landfill occurs between 11 AM and 12 noon, with an average of 112 vehicles entering the landfill (about two vehicles per minute).

6) The highest average weekday hour for entering traffic volume represents 12.3% of the daily total traffic volume.

Table 5.5-1 summarizes the total of all the vehicular trips into and out of the landfill for an average day including average movement of vehicles across the scales into the main landfill area plus other trips into the landfill such as employees, trips to the Brea Green Recycling facility and other miscellaneous trips.

TABLE 5.5-1
VEHICULAR TRIPS TO/FROM OLINDA ALPHA LANDFILL ON AN AVERAGE DAY

Total loads of waste brought to Olinda Alpha Landfill (crossing the scales)	888 x 2 =	1,776	trips
Total loads to Brea Green Recycling	107 x 2 =	214	trips
Armored car pickup	1 x 2 =	2	trips
Mail/package delivery	2 x 2 =	4	trips
Total landfill employees	49 x 2 =	98	trips
Total Brea Green Recycling employees	5 x 2 =	10	trips
Total Shepherd employees	7 x 2 =	14	trips
Total Getty Synthetic Fuels (GSF) employees	10 x 2 =	20	trips
Total on-site salvage company employees	7 x 2 =	14	trips
If 10 percent of the employees left the site at lunch	8 x 2 =	16	trips
Estimated Total Trips – Average Day		**2,168**	**trips**

Source: Olinda Alpha Landfill Site Manager (2004).

Because the scales to the landfill open at 6 AM, the landfill employees listed in Table 5.5.-1 arrive at the landfill very early for work. All employees related to landfill activities arrive at the landfill before 7:30 AM. Therefore, on an average day 178 (8%) of the total 2,168 trips to the landfill are employee, mail or armored car trips which occur outside the morning peak hour on the area road network outside the landfill which begins at 7:30 to 7:45 AM.

5.5.1.3 Level of Service

The level of service (LOS) concept was developed to evaluate the operating conditions of components of a transportation circulation system, most commonly intersections and road links. The *Highway Capacity Manual 2000* (HCM, Transportation Research Board, National Research Council, Washington, D.C.) defines LOS as a quality measure describing operating conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. LOS is rated from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Specific criteria for road segments and intersections are described in the following sections.

5.5.1.4 Traffic Study Area

The traffic study area was determined based on the results of a field survey which determined the primary routes used by traffic destined to and from Olinda Alpha Landfill. This field study of vehicles leaving the landfill was conducted on a typical morning in December 2002. Highly visible colored stickers were placed in a prominent and visible position on the front of the majority of vehicles leaving Olinda Alpha Landfill on that study day. Observers in place at the key intersections along Valencia Avenue between Lambert Road and Imperial Highway and on Imperial Highway from Valencia Avenue to State Route (SR 57) observed and recorded the numbers of trucks with stickers (indicating they were vehicles accessing the landfill) and their directions of movement through these intersections.

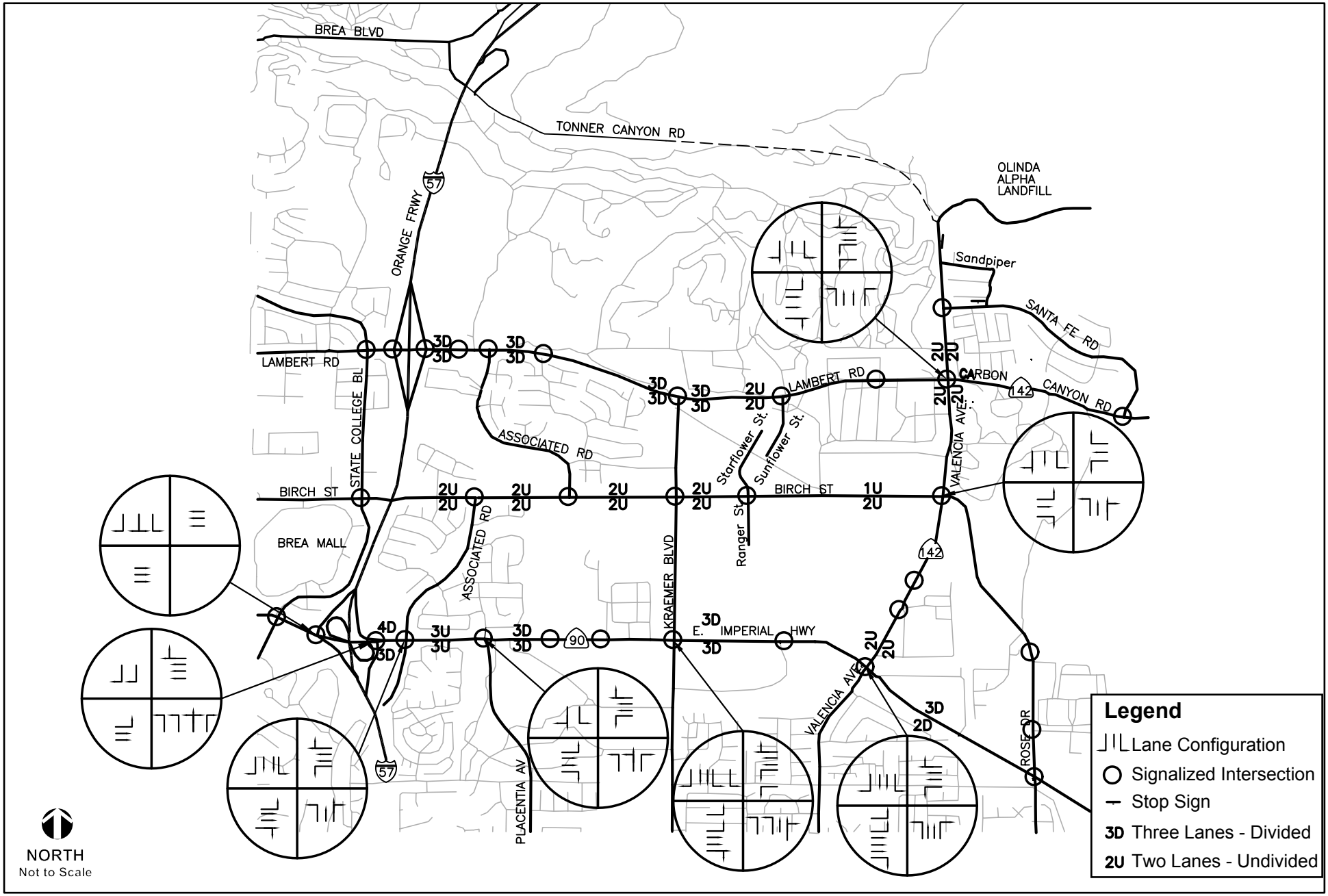
Based on the existing distribution of landfill related traffic, the intersections on Valencia Avenue between Lambert Road and Imperial Highway and on Imperial Highway between Valencia Avenue and SR 57 were the obvious choices for detailed impacts analysis. Figure 5.5-1 shows the study area including the existing road system and key study intersections which were analyzed in the traffic study. Figure 5.5-6, shown later in Section 5.5.3.3, shows the percentage distributions which resulted from the survey.

5.5.1.5 Existing Circulation System

Olinda Alpha Landfill is served by an extensive existing road system which provides access to the landfill as well as to other existing development and inter-regional traffic throughout the area. Figure 5.5-2 shows the locations of traffic control devices, lane configurations at key intersections and the number of lanes on major roads in the study area for the traffic analysis. The freeways and key arterial roads that handle the predominance of landfill traffic in the vicinity of the project site are discussed later in this Section.

The 2003 Congestion Management Program (CMP) for Orange County identifies roads and freeways that are included on the latest CMP Highway System. In the project area, the following roads/freeways are included on the CMP network:

- Valencia Avenue from Lambert Road/Carbon Canyon Road to Imperial Highway.
- Imperial Highway from Rose Avenue to SR 57.
- SR 57 in the entire study area.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-2
Traffic Controls - Lane Configuration

The following intersections are designated as CMP intersections on the CMP Highway Network:

- Imperial Highway at Valencia Avenue.
- SR 57 Southbound (SB) freeway ramps at Imperial Highway.
- SR 57 Northbound (NB) freeway ramps at Imperial Highway.

Freeways in the Study Area

State Route 57 (SR 57). Regional access to the landfill is provided primarily by SR 57 with connections from SR 57 to the entire Los Angeles/Orange County freeway system. SR 57 is an eight-lane (four lanes in each direction) access-controlled facility, with two high occupancy vehicle lanes (one in each direction), which connects the City of Pomona to the north to the Cities of Anaheim and Orange to the south. A full-access interchange is provided at Imperial Highway about six miles from the landfill and at Lambert Road about three miles from the landfill. Because the City of Brea prohibits trucks over 3,000 pounds from using Lambert Road east of SR 57 to Valencia Avenue, the overwhelming majority of trucks accessing the landfill from SR 57 use Imperial Highway (to/from Valencia Avenue) for access to/from the landfill.

Major Roads in the Study Area

Imperial Highway (State Route 90, SR 90) is a designated Smart Street in the project area on both the Orange County Master Plan of Arterial Highways (MPAH, September 22, 2003) and on the Master Plan of Roadways (MPR) in the City of Brea General Plan (August 19, 2003). The Smart Street concept seeks to improve traffic capacity and smooth traffic flow through measures such as traffic signal synchronization, bus turnouts, intersection improvements and addition of travel lanes by removing on-street parking and consolidating driveways. Imperial Highway is a major east-west inter-regional road which carries traffic across the Los Angeles/Orange County region for about 40 miles from Playa Del Rey in El Segundo to Nohl Ranch Road in Anaheim Hills. In the study area, Imperial Highway is about 110 feet curb-to-curb with a 26-foot wide center area for median and/or left turn lanes. There are eight signalized intersections along Imperial Highway in the two mile segment from SR 57 to (and including) Valencia Avenue.

This road is six lanes (three lanes in each direction) between SR 57 and Valencia Avenue with a raised median divider from State College Boulevard to the SR 57 SB off-ramp, from the State Route 57 (SR 57) NB off-ramp to slightly east of Associated Road, and from slightly east of Placentia Avenue to Rose Drive. The speed limit on Imperial Highway varies from 50 miles per hour (mph) east of Associated Road to 40 mph west of Associated Road and across SR 57. This road is on the 2003 CMP Highway System for Orange County in the study area.

Valencia Avenue is designated as a Primary Arterial in the project area on both the County of Orange MPAH and the City of Brea MPR. This road is a four-lane undivided (two lanes each direction) road which is about 84 feet curb-to-curb from Imperial Highway to Lambert/Carbon Canyon Road. North of, and between Lambert Road/Carbon Canyon Road and Sante Fe Avenue (the entrance to Olinda Ranch), Valencia Avenue narrows to about 69 feet east curb-to-west side edge line and narrows further to a two-lane road as it begins the ascent to the scales at the entrance to Olinda Alpha Landfill. This road is on the 2003 CMP Highway System for Orange

County between Imperial Highway and Lambert Road/Carbon Canyon Road in the project study area. There are six signalized intersections on Valencia Avenue between (and including) Imperial Highway and Santa Fe Avenue (a new signal was installed in December 2003). The speed limit on Valencia Avenue is 45 mph from north of Imperial Highway past Olinda Ranch.

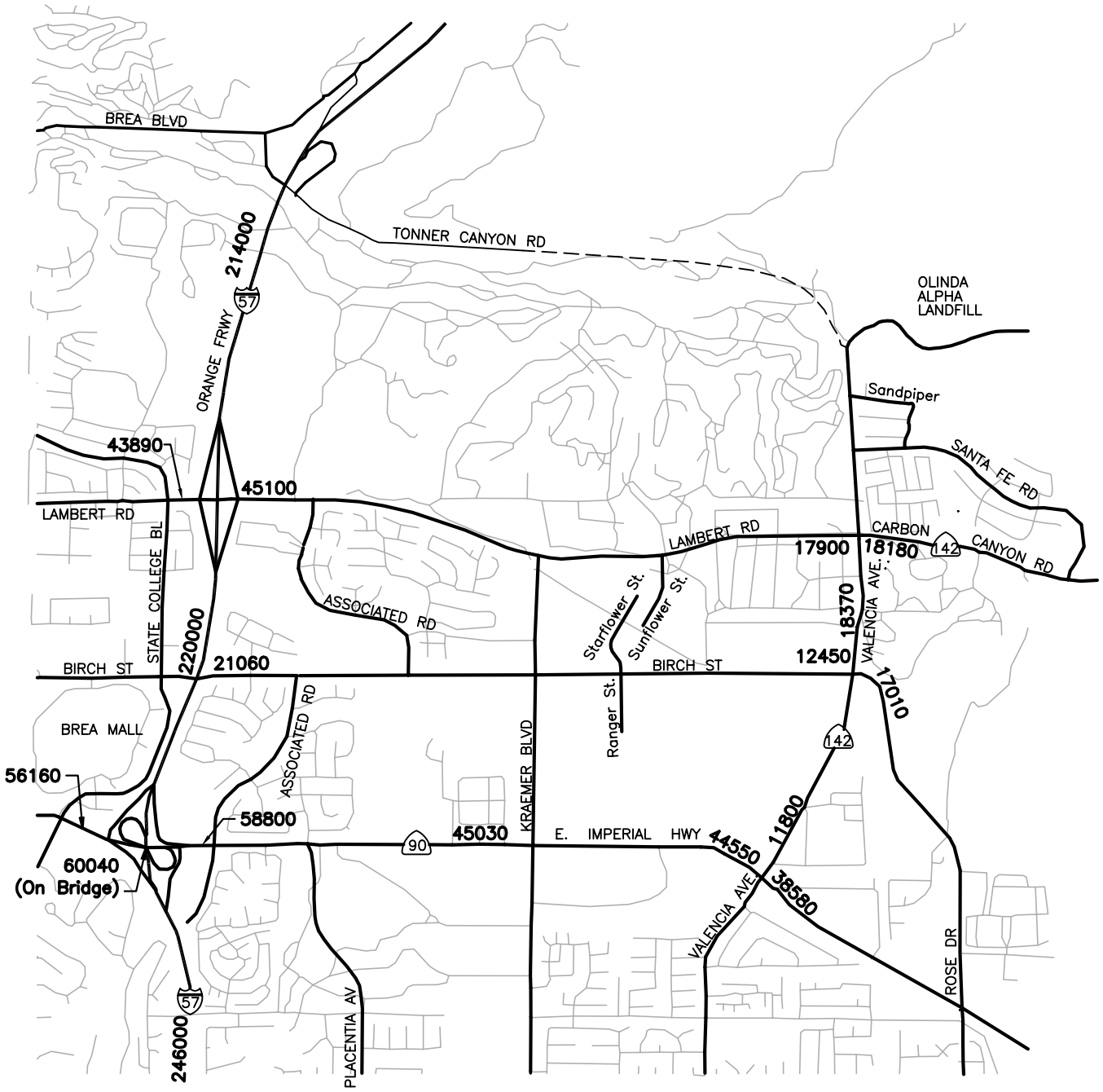
Valencia Avenue is shown, on both the MPAH and the City of Brea MPR, as a future extension from the landfill area through Tonner Canyon to connect to SR 57 at the current Tonner Canyon partial interchange. The City of Brea MPR indicates "…the Valencia Avenue extension between the entrance to the Olinda Alpha Landfill and State Route 57 will be deleted following parallel changes to the OCTA MPAH" (City of Brea General Plan (August 19, 2003), Figure CD-8, Master Plan of Roadways). A formal request to the Orange County Transportation Authority (OCTA) from the City of Brea to delete the Valencia Avenue/Tonner Canyon Road connection from the MPAH is on-hold pending further discussion relative to the Four Corners Traffic Study. Refer to Section 2.3.3 (Tonner Canyon Road) for additional discussion regarding Tonner Canyon Road.

Lambert Road is designated as a Major Arterial in the project area on both the Orange County MPAH and the City of Brea MPR. Lambert Road is a six-lane road (three lanes each direction, with a raised median between one block east of Kraemer Boulevard and SR 57) which connects to SR 57 with a full diamond interchange. As indicated earlier, trucks over 3,000 pounds are prohibited by the City of Brea on Lambert Road between SR 57 and Valencia Avenue. Therefore, this road is not a viable access route to/from the landfill. Lambert Road is not included on the CMP Highway System for Orange County.

5.5.1.6 Existing Traffic Volumes

Figure 5.5-3 presents the existing 2004 ADT for the freeways and major roads in the study area. Detailed traffic count summary sheets for data collected in January 2004 for the surface street system is provided in Appendix F-1. Traffic volumes on the freeway are based on the Caltrans 2002 volumes on the California State Highway System.

As Figure 5.5-3 indicates, SR 57 carries an annual average daily traffic (AADT) of about 246,000 vehicles between Yorba Linda Boulevard and Imperial Highway, an AADT of 220,000 vehicles between Imperial Highway and Lambert Road and an AADT of 214,000 vehicles between Lambert Road and Tonner Canyon Road. The AADT is two-way traffic. The peak hour volume on the Imperial Highway/Lambert Road segment of SR 57 is slightly less than 18,000 vehicles (total of both directions). The LOSs on SR 57 in the study area are over capacity for both peak hours in both directions, ranging from LOS F0 to F3 according to the 2003 Caltrans District 12 CMP Data in Appendix A (Freeway Levels of Service Tables) in the OCTA 2003 CMP.



NORTH
Not to Scale

Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-3
Average Daily Traffic

Figure 5.5-3 also shows that Imperial Highway carries from 60,040 ADT at SR 57, decreasing to 44,550 ADT east of Valencia Avenue. Daily traffic volumes on Valencia Avenue vary from 11,800 ADT north of Imperial Highway to 18,370 ADT between Lambert Road/Carbon Canyon Road and Rose Avenue/Birch Streets. North of Lambert Road, daily volumes on Valencia vary between 2,320 and 3,560 ADT adjacent to the Olinda Ranch development. Existing ADT count data (ADT count machines record one vehicle for each two axles) on this segment of Valencia Avenue were adjusted to account for the high percentage of multi-axle vehicles on this road segment, close to Olinda Alpha Landfill.

Daily volumes on Lambert Road vary from a high of 45,100 ADT near SR 57 to 18,180 ADT east of Valencia Avenue (Carbon Canyon Road). East of Valencia Avenue, Carbon Canyon Road carries 18,180 ADT.

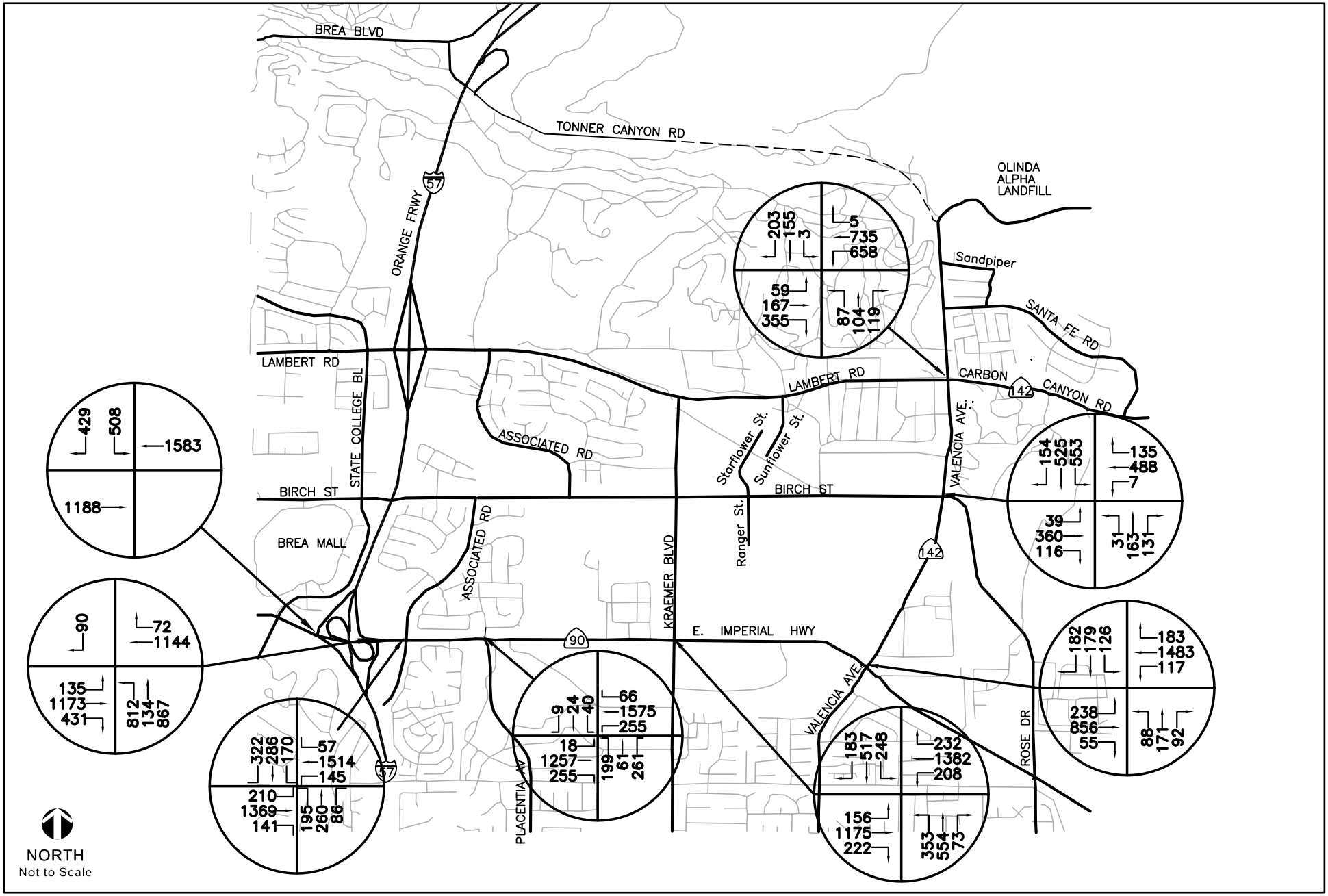
5.5.1.7 Existing Peak Hour Turning Movements

The existing peak hour turning movements for each of the key study intersections in the study area are summarized on Figures 5.5-4 and 5.5-5 for the morning street peak hour (defined as the highest hour between 7 AM and 9 AM) and for the mid-morning peak hour (defined as the highest hour between 10 AM and 12 noon). The mid-morning period was selected for the existing conditions analysis because the landfill peak traffic hour occurs within that period. Detailed traffic count information for existing traffic volumes in the study area is provided in Appendix F-2.

5.5.1.8 Existing Intersection Levels of Service

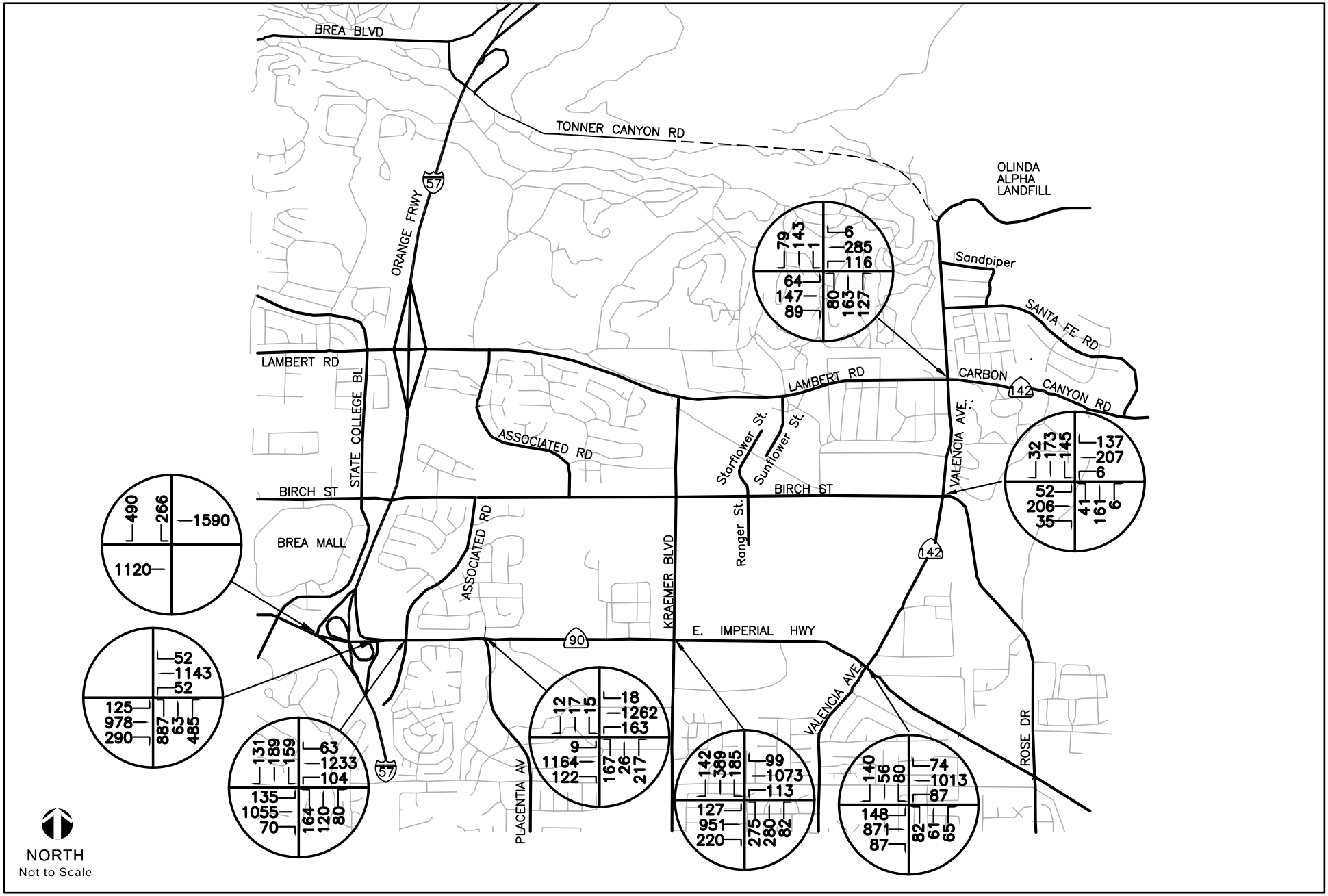
LOS analyses were performed for intersections using the Intersection Capacity Utilization (ICU) technique adopted by the Orange County CMP, the County of Orange and the City of Brea. The LOS analysis was conducted for the peak hour during the AM street peak period (7 AM to 9 AM) in the morning and for the peak hour during the mid-morning peak period of 10 AM to 12 noon. The peak hour volumes during these hours shown on Figures 5.5-4 and 5.5-5 together with the lane configurations shown on Figure 5.5-2 were used for these calculations. The detailed LOS computation worksheets are provided in Appendices F-3 and F-4. Table 5.5-2 summarizes the results of the LOS analysis for the key signalized intersections in the study area. As Table 5.5-2 shows, all the key study area intersections in the vicinity of the landfill currently operate at acceptable service levels during the morning peak street hour.

Table 5.5-2 also shows that all intersections are operating at a very good LOS A during the mid-morning peak hour, at the time when landfill traffic is at its highest, with the exception of the intersection of Imperial Highway and Placentia Avenue which operates at an ICU of 0.604 which is slightly outside the LOS A condition. This existing analysis clearly indicates that the morning peak street traffic hour, as compared to the mid-morning which has excellent service levels, is the more critical time period. Therefore, the analysis of project impacts associated with the proposed expansion of the landfill focuses only on the AM peak traffic hour. The landfill closes at 4 PM and, therefore, landfill related traffic does not occur during and would not impact the PM peak traffic. Therefore, no analysis of the PM peak hour traffic existing conditions is provided.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-4
Existing 2004 AM Peak Hour Turning Movement Counts



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-5
Existing 2004 AM Mid Morning Peak Hour Turning Movement Counts

TABLE 5.5-2
EXISTING SIGNALIZED INTERSECTION LEVELS OF SERVICE

#	Intersection	AM Peak Hour (1)		Mid-Morning Peak Hour (2)	
		ICU	LOS	ICU	LOS
1	Lambert Road/Carbon Canyon Road & Valencia Avenue	0.635	B	0.257	A
2	Valencia Avenue & Birch Street/Rose Avenue	0.735	C	0.337	A
3	Valencia Avenue & Imperial Hwy	0.592	A	0.427	A
4	Imperial Hwy & Kraemer Blvd.	0.668	B	0.512	A
5	Imperial Hwy & Placentia Avenue	0.728	C	0.604	B
6	Imperial Hwy & Associated Road	0.761	C	0.547	A
7	Imperial Hwy & SR 57 SB Off-Ramp	0.544	A	0.510	A
8	Imperial Hwy & SR 57 NB Off-Ramp	0.736	C	0.559	A

(1) Peak hour during 7:00 to 9:00 AM peak period.
(2) Peak hour during 10:00 AM to 12:00 noon peak period.
Source: Bryan A. Stirrat & Associates (2004).

5.5.2 THRESHOLDS OF SIGNIFICANCE

The County of Orange Growth Management Plan Transportation Implementation M, Appendix IV-1, page 25, "Summary of Impacts," indicates that adverse impacts occur when (a) intersections currently operating at better than LOS D are projected to operate at worse than LOS D as a result of the project, (b) intersections already operating at LOS D to which additional traffic is added by the project, and (c) traffic added to deficient intersections. These criteria were applied to the intersections analyzed in Section 5.5.4 (Potential Impacts) to assess the significance.

5.5.3 METHODOLOGY RELATED TO TRANSPORTATION AND CIRCULATION

The following section describes the transportation and circulation methodology used in this traffic analysis.

5.5.3.1 Regulatory Framework

Because this project is located in unincorporated northern Orange County, this traffic study has been prepared in consideration of the Orange County Transportation Authority's CMP Traffic Impact Analysis Guidelines (2003), and in accordance with the County of Orange Growth Management Plan Transportation Implementation Manual, adopted by the Board of Supervisors March 15, 2004, contained in Appendix V-1 of the County of Orange General Plan (July 2, 2003). Because the project is in the SOI of the City of Brea and landfill traffic uses roads in Brea, comments from the City received through the Notice of Preparation (NOP) process, at a scoping hearing held in Brea on January 22, 2004 and at a meeting with City staff on January 27, 2004, have been considered in this traffic study.

5.5.3.2 Signalized Intersections

Signalized intersections were analyzed using the ICU method adopted by both the County of Orange and the City of Brea. The ICU value is a quantitative ratio which compares intersection volume to capacity on a critical movement basis within the intersection. Based on the ICU, intersection LOS is defined as shown in Table 5.5.-3.

TABLE 5.5-3
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

LOS	Description	ICU
A	Very low delay. Most vehicles do not stop at the intersection.	0.00 to 0.60
B	More vehicles stop than with LOS A, causing higher delays.	0.61 to 0.70
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping.	0.71 to 0.80
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	0.81 to 0.90
E	Results in delay considered to be unacceptable.	0.91 to 1.00
F	Considered unacceptable to most drivers, often occurs with over saturation, when arriving traffic exceeds the capacity at the intersection.	Above 1.00

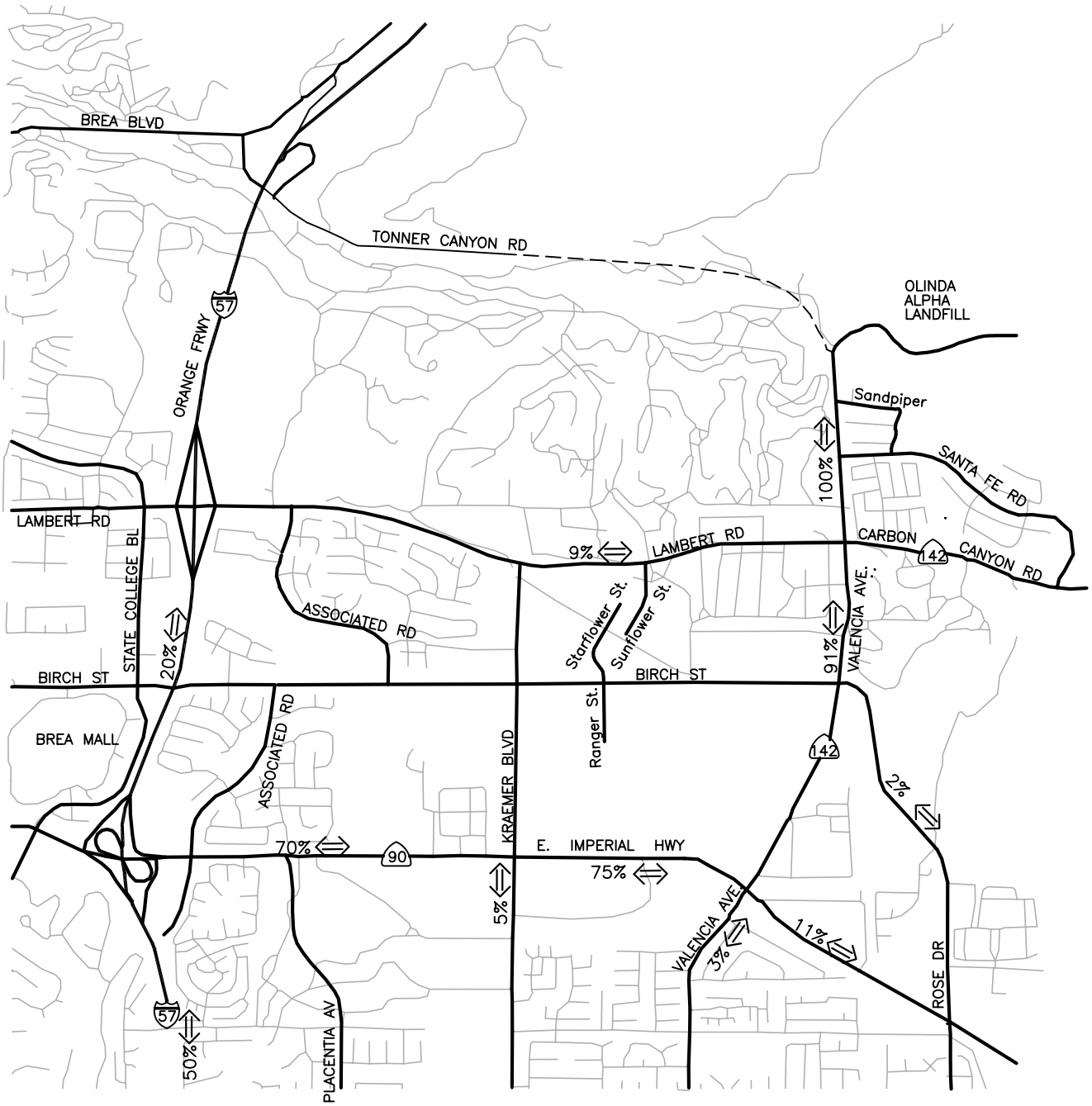
The ICU analysis for this study used standard technical parameters including default saturation rates, defined as the maximum number of vehicles that can pass through a lane per hour of green time at a signalized intersection; and a lost time (clearance interval) of 0.05 added to the sum of the critical ICU values for the intersection. A saturation flow rate of 1,700 vehicles per hour of green time per lane (vphgl) was used in the analysis, except for an exclusive right turn lane where right turn on red is permitted where a 15 percent increase in the saturation flow rate of the right turn lane (1,955 vphgl) was used.

Intersection capacities generally control overall road capacities. Therefore, intersection analysis is generally considered the most critical element of analysis in a traffic study. This study has concentrated on intersection analysis on the key roads serving the Olinda Alpha Landfill.

LOS D intersection operation is considered acceptable by both the County of Orange and the City of Brea. The Orange County CMP considers LOS E acceptable for intersections on the CMP road network.

5.5.3.3 Project Trip Distribution

Project trip distribution is the process of quantifying the percentage of landfill traffic which would use the various roads in the study area for access to and from the landfill. The trip distribution of landfill vehicles crossing the scales was determined based on the field survey described earlier in Section 5.5.1.4. The percentage distribution to the road network of landfill vehicles crossing the scales as determined by that field study is shown on Figure 5.5-6. As shown, the overwhelming majority of vehicles accessing the landfill use Valencia Avenue, Imperial Highway and SR 57 as travel routes to and from the landfill.



NORTH
Not to Scale

Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-6
Anticipated Project Traffic Distribution

This trip distribution study, in addition to quantifying the trip distribution of landfill related traffic, was also instrumental in determining the key intersections to be analyzed for potential impacts.

5.5.3.4 Project Trip Generation

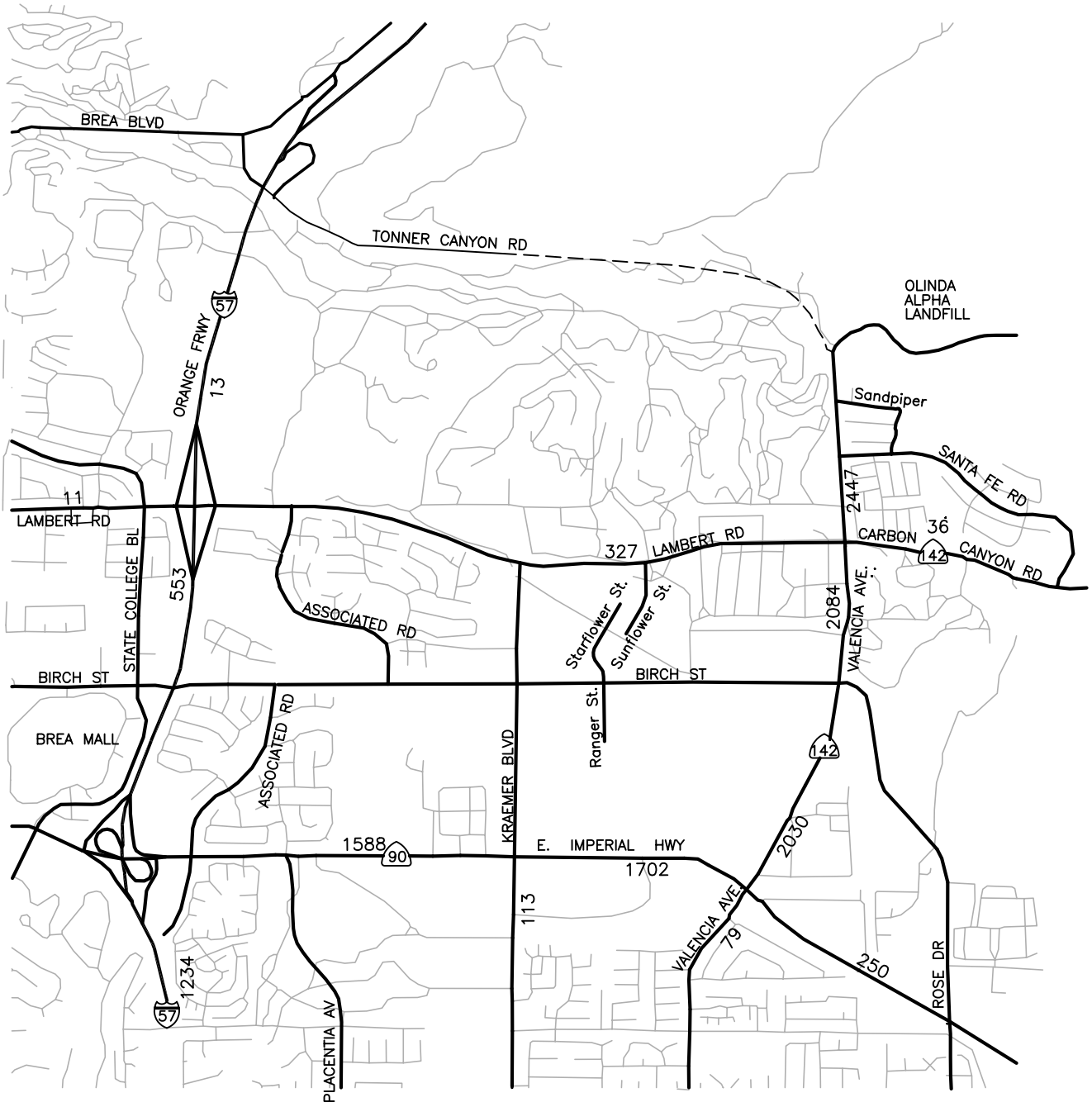
Trip generation is defined as the number of trips that originate or terminate at a project site. Trip generation rates for various land uses have been developed and are usually available through sources such as the Institute of Traffic Engineers Trip Generation Handbook (Sixth Edition, 1997) and similar publications. However, no trip generation rates have been developed for landfills because they are such a specialized land use. Therefore, trip generation for the Olinda Alpha Landfill was determined from a substantial amount of existing data available from the computer tracking system which IWMD maintains specifically for the landfill.

Unlike some types of land uses, traffic generation activity at a landfill such as Olinda Alpha varies considerably throughout the year. To determine an appropriate level of trip generation for analysis of project impacts, the total vehicular traffic across the scales into the landfill for fiscal year 2003 (FY 03) was sorted, from the highest traffic day to the lowest traffic day. Daily traffic volumes across the scales ranged from a high of 1,248 vehicles inbound to a low of 364 vehicles inbound. The average inbound volume was 888 vehicles. The traffic volumes recorded across the scales include movement into the landfill of MSW, dirt cover and green waste.

For this traffic analysis, the level of traffic across the scales into the landfill at the 85th percentile was selected as an appropriate level to use for the analysis of project impacts. The traffic on the 85th percentile analysis day is greater than the traffic on 85 percent of the days at the landfill during FY03. The "Fiscal Year 03 Inbound Traffic to the landfill Ranked by Day of Count, All Gates Total" (IWMD, 2003) indicates that the daily inbound vehicular volume is 1,012 vehicles at the 85th percentile (See supporting data in Appendix F-5). This is 29 percent higher than the highest traffic volume day of FY03 of trucks carrying only MSW inbound to the landfill. Because the permitted maximum level allowed at Olinda Alpha of 8,000 tons (maximum day) and 7,000 tons per day (annual average per the MOU with the City of Brea) both apply to MSW only, the analysis level of 1,012 vehicles used in this study is conservative relative to those MSW limit levels.

5.5.3.5 Daily Trip Generation

Figure 5.5-7 shows the total 24-hour traffic volume distributed to the road network serving Olinda Alpha Landfill for the 85th percentile analysis day. The total daily volume (2,447 vehicles – total of both inbound and outbound) is a combination of the vehicular volume across the scales into the landfill (2,025) including MSW, dirt and green waste; vehicular volume (244 vehicles) into the Brea Green recycling facility (this traffic does not cross the scales into the main landfill area); and vehicular traffic associated with employees, mail delivery and other miscellaneous trips (178). The distribution of employee trips to the road network was developed by assigning employee trips to the network in a logical manner based on the employees' home zip codes as provided by the IMWD landfill operator. The distribution of landfill traffic only was distributed to the network based on the trip distribution shown on Figure 5.5-6.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-7
Future Daily Project Traffic

5.5.3.6 AM Peak Hour Trip Generation

Based on data from the "Olinda Alpha Landfill Average Hourly Transaction Count Per Lane" (provided in the Appendix F), the 7:30 to 8:30 AM peak hour represents 9.2 percent of the total daily inbound traffic to Olinda Alpha Landfill. Because the daily inbound traffic crossing the scales at the 85th percentile level is 1,012 vehicles, the AM peak hour inbound trips crossing the scales on that analysis day was estimated at 93 vehicles (0.092 x 1,012 = 93). In addition, there are 11 inbound AM peak hour vehicle trips to the Brea Green facility (which do not cross the scales) for a total inbound AM peak hour volume of 104 vehicles (rounded to 105 for analysis purposes). Because all landfill employees arrive for work before 7:30 AM, no employee traffic is included in the total AM peak hour volume.

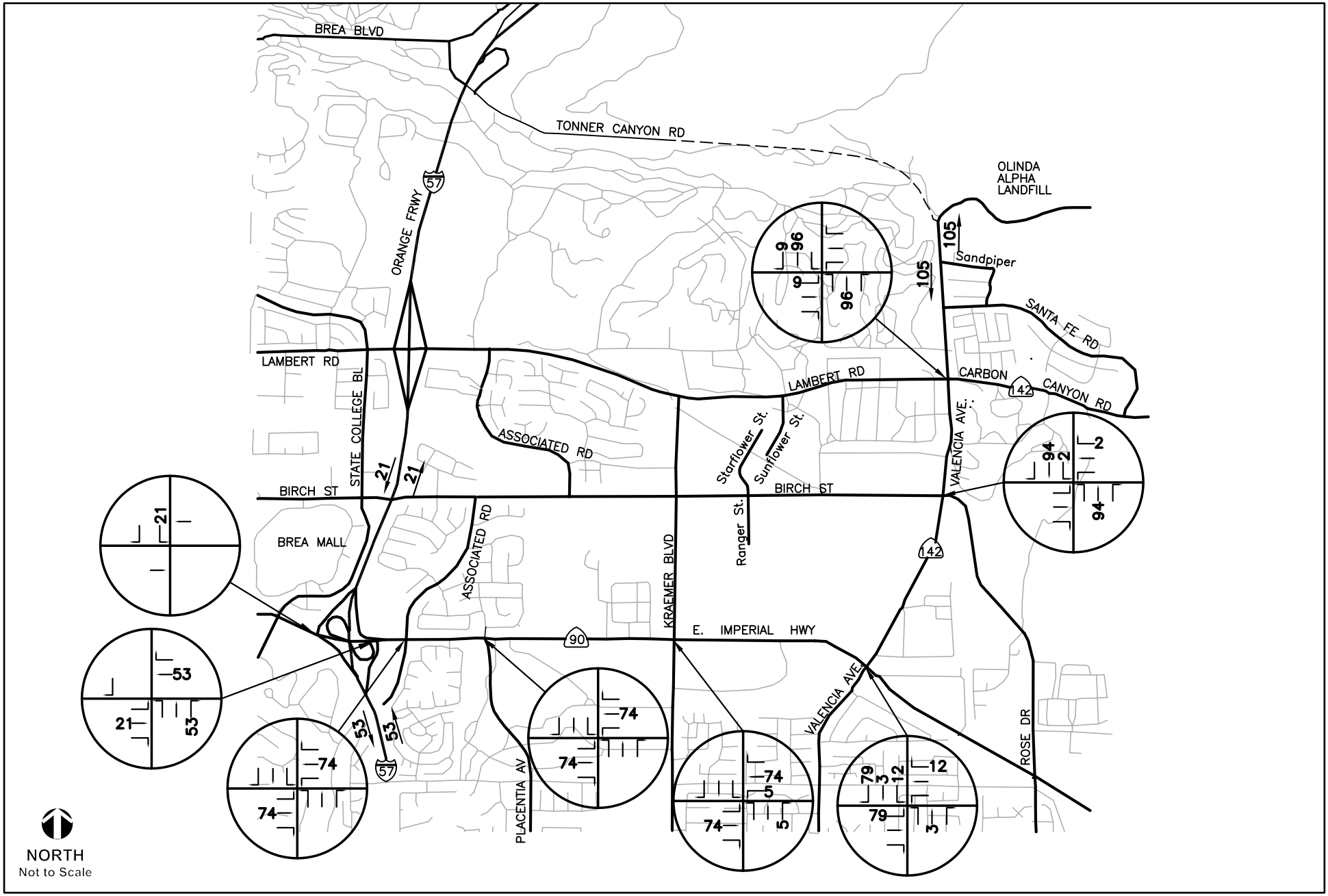
Figure 5.5-8 shows the AM peak hour project traffic distributed to the key study area intersections on the road network serving the Olinda Alpha Landfill. As Figure 5.5-8 shows, landfill traffic varies from a high of 210 vehicles (both directions) on Valencia Avenue north of Lambert Road to 24 vehicles (both directions) on Imperial Highway east of Valencia Avenue and only four vehicles (both directions) on Rose Drive between Valencia Avenue and Imperial Highway.

5.5.4 POTENTIAL IMPACTS

5.5.4.1 General Project Understanding

It is important to understand the characteristics of the Olinda Alpha Landfill expansion project from a traffic perspective to determine the extent to which a traffic impact analysis is required by the agencies which oversee development activities in Orange County, and in particular, the unincorporated County area where the project is located.

The proposed project involves an expansion of Olinda Alpha Landfill to accommodate an additional 14.2 million tons of MSW. However, it is critical to understand that this additional capacity would only extend the life of the landfill from its current permitted closure date in 2013 to 2021. Under the proposed project, no additional waste would be brought to the landfill so as to exceed the current maximum daily tonnage limit of 8,000 TPD (which is allowable under the existing solid waste facility permit for the landfill) or the annual average daily tonnage limit of 7,000 TPD (which is allowable under the existing County MOU with the City of Brea). In addition, the landfill will continue to accept an average of 3,000 to 4,000 TPD exempt commodities. The proposed project would result in more years of MSW disposal at the landfill, but would not result in any change in the current maximum daily and annual average daily tonnage limits at the landfill. The proposed project does not include any change in the operating schedule, number of employees, or types and maximum numbers of pieces of equipment at the landfill. Therefore, between the time the expansion occurs and 2013, the proposed project would not result in increased vehicle trips on a daily basis beyond the level of trips which are currently occurring at the landfill and, as shown later, landfill trips currently comprise a small part of the total existing traffic on most roads in the project area.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-8
Future Project Traffic AM Peak Hour

Between 2013, the currently permitted closure date for the landfill, and 2021, the projected date of closure based on current population projections, daily tonnage, compaction densities, approved landfill elevations and disposal technologies, as a result of the proposed project, the current daily level of trips to and from the landfill would continue to occur for those additional eight years. Those trips would have been removed from the street system serving Olinda Alpha Landfill (between 2013 and 2021) if this project were not to occur and shifted to other roadways serving the landfill(s) which would be utilized to handle the demand previously taken to Olinda Alpha Landfill. If the landfill were to close in 2013, the property is proposed to be reused as a County regional park. Because this park would generate some currently undetermined level of trips, the net reduction of trips (landfill trips) to the street network due to the landfill closure would be reduced by the extent of the trips generated by the park use. However, for a conservative analysis in this EIR, that net reduction (trip credit) has not been considered.

On-site soil available for use as cover material is projected to be available until 2015 at which time soil for cover will need to be imported to Olinda Alpha Landfill. However, import of refuse from out-of-county will cease in 2015. After 2015, and prior to the projected new closure date of 2021, it is assumed that the additional trips required for soil import and the reduction of trips associated with the cessation of out-of-county import will offset each other, resulting in no net increase in trips to the landfill during this period (see Section 4.4.1 for further discussion).

Connection of Tonner Canyon Road to Valencia Avenue

As discussed earlier in Section 2.3.3, the future connection of Tonner Canyon Road to Valencia Avenue is shown on the MPAH and on the City of Brea MPR. This connection has been suggested as an optional access route to Olinda Alpha Landfill. That potential access route is not planned to be constructed within the timeframe of this study and is not included as part of the proposed landfill expansion project and, therefore, it is not evaluated in this traffic analysis. Refer to Section 2.3.3 for additional discussion regarding Tonner Canyon Road.

5.5.4.2 Assessment of Impacts

This Section discusses the potential impacts of the continuation of the operation of Olinda Alpha Landfill past its current closure date of 2013 to the projected closure date of 2021. The potential traffic impacts of the project are discussed first in terms of impacts on LOS at the key study area intersections in 2021 both with and without the project. The year 2021 was selected as a worst case scenario because the background traffic (traffic other than landfill traffic) will be highest at the end of the landfill extension period because background traffic will continue to grow over time as development in the region occurs. As indicated earlier, the level of landfill related traffic will not increase between existing 2004 conditions and the projected 2021 closure date.

The future 2021 analysis is based on a comparison between (a) conditions without the project, which assume that the landfill will close in 2013 and that from 2013 on, the landfill traffic would be removed from the road network, and (b) conditions with the project which assume the current existing level of landfill traffic would still exist in 2021 together with future projected background traffic in 2021.

The future 2021 with project conditions traffic volumes for each of the study area intersections area were obtained from the City of Brea GP Traffic Analysis (Austin Foust Associates, Inc., City of Brea GP Final Environmental Impact Report, April 2003). (See data in Appendix F-6). The traffic analysis for the GP utilized a tri-city model for long range (2025) projections for buildout of the GP in Brea. Using these projections is conservative because the target year for the GP was 2025 which is beyond the 2021 analysis year for the Olinda Alpha Landfill expansion project. Additionally, the GP Traffic Analysis includes all currently known planned and approved projects in the landfill vicinity because that study was completed in 2003.

The GP Traffic Analysis examined two levels of GP development and two potential road network alternatives. The traffic study for the Olinda Alpha Landfill expansion project used the most intensive land use development alternative (defined as 20 percent residential and 80 percent commercial) and the road scenario termed "proposed circulation system" assumed for the General Plan analyses. This represents a worst case background traffic condition for the landfill expansion. The "proposed circulation system" in the GP analysis assumed the following changes to the adopted MPR in the Brea Circulation Element and to the MPAH:

a. The deletion of future Tonner Canyon Road and the northward extension of Valencia Avenue from the MPAH.
b. Re-classification of Whittier Boulevard west of Puente Street from a four-lane secondary to a two-lane roadway and the re-classification of Puente Street south of Whittier Boulevard from a four-lane secondary to a two-lane local roadway.
c. The re-classification of Brea Boulevard south of Imperial Highway from a six-lane major to a four-lane primary.

The "proposed circulation system" scenario represents the most likely road configuration to be in place in the City of Brea in both 2021 and 2025. The long range projections in the GP Traffic Analysis assumed Olinda Alpha Landfill would continue operating until 2025. The GP Traffic Analysis and the analysis for the landfill expansion also assumed that currently committed (that is, funded) intersection improvements in the City of Brea will be in place in the future, for 2025 (GP) and 2021 (landfill expansion).

Worksheets showing the long range 2025 with project intersection volumes, future lane configurations and ICU values and projected Levels of Service are shown in the traffic study appendices. Some of the ICU and LOS values in the traffic study for the Olinda Alpha Landfill expansion may differ slightly from those in the GP Traffic Analysis. This is because the County of Orange allows some different capacity utilization values than the City of Brea. In addition, the with project analysis for the landfill expansion included a 2.0 Passenger Car Equivalent (PCE) adjustment for each movement impacted by landfill traffic, as described later.

5.5.4.3 Level of Service Analysis Without the Project

Figure 5.5-9 shows the projected 2021 AM peak hour traffic volumes for each of the study area intersections for the without project traffic conditions. These values were obtained by subtracting the project (landfill) traffic values shown on Figure 5.5-8 from the AM peak hour volume values in the GP Traffic Analysis for the GP/Proposed Circulation System scenario

which included all future traffic including the landfill. It was assumed that after landfill traffic was subtracted from future volumes which included the landfill traffic, the remaining traffic movements at all study area intersections were comprised of five percent or less trucks, which is customary for the majority of roads on a street network. Figure 5.5-9 shows the projected 2021 daily traffic volumes on the study area road network without the project.

Table 5.5-4 summarizes the results of the LOS calculations at the study area intersections without the project in 2021. Calculation data sheets for this analysis are provided in Appendix F-7.

TABLE 5.5-4
FUTURE 2021 SIGNALIZED INTERSECTION LOS WITHOUT THE PROJECT

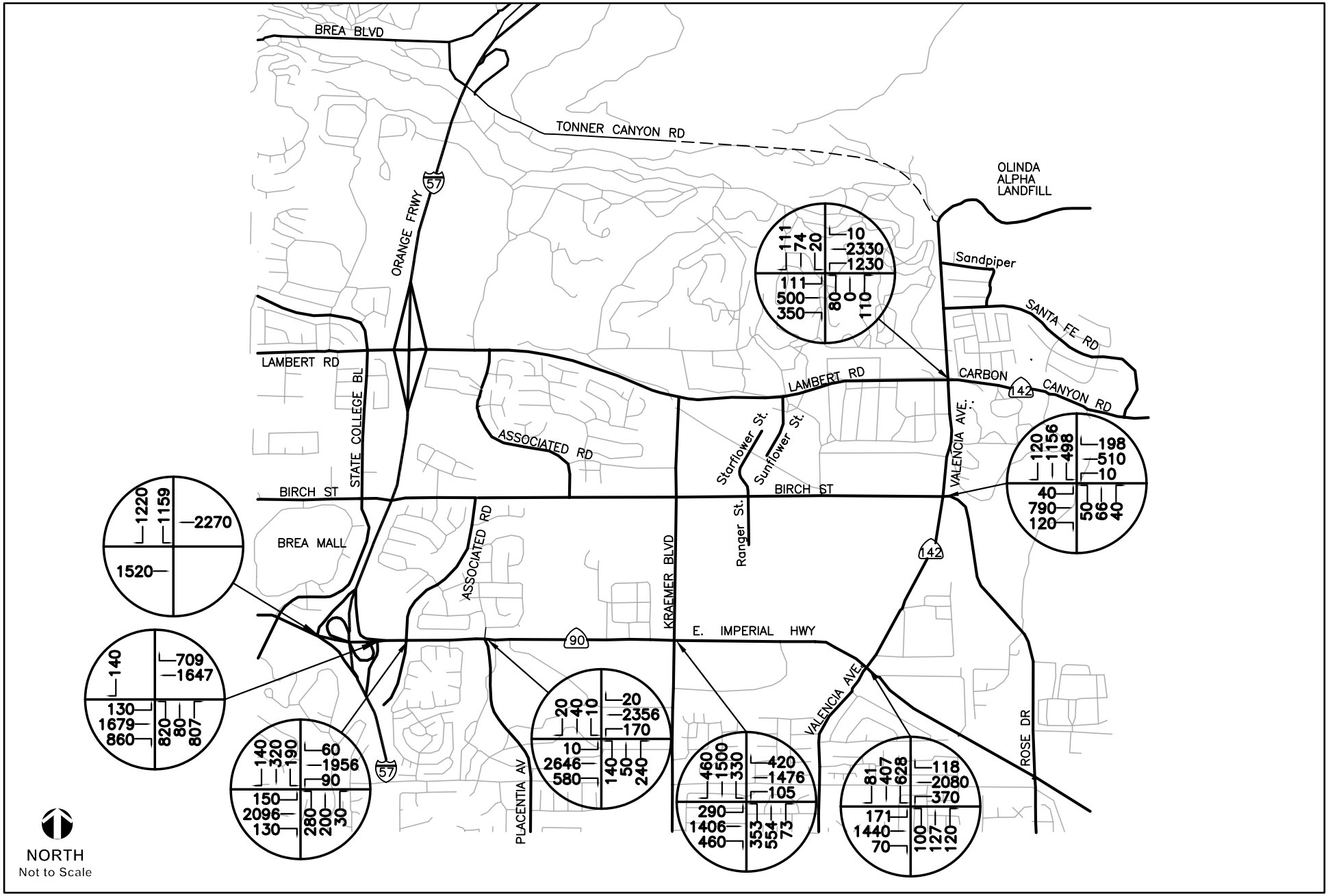
Intersection	AM Peak Hour (1)	
	ICU	LOS
Lambert Road/Carbon Canyon Road & Valencia Avenue	0.780	C
Valencia Avenue & Birch Street/Rose Avenue	0.693	B
Valencia Avenue & Imperial Hwy	0.981	E
Imperial Hwy & Kraemer Blvd.	0.893	D
Imperial Hwy & Placentia Avenue	0.799	C
Imperial Hwy & Associated Road	0.689	B
Imperial Hwy & SR 57 SB Off-Ramp	0.962	E
Imperial Hwy & SR 57 NB Off-Ramp	0.804	D

(1) Peak hour during 7:00 to 9:00 AM peak period.
Source: Bryan A. Stirrat & Associates, 2004

5.5.4.4 Level of Service With the Project

Because a large part of the projected landfill traffic is trucks, a PCE adjustment was made to the project traffic and then added to the without project traffic to arrive at the with project traffic volume used in the ICU/LOS calculations summarized in Table 5.5-5. In general, the volume of trucks on most roads is typically five percent or less of the total vehicle volume. In those situations, capacity calculations do not customarily utilize adjustments for trucks, because trucks comprise a relatively small percentage of the traffic volume being analyzed. As shown later, the percentage of trucks in the traffic stream on Imperial Highway between SR 57 and Valencia Avenue falls within the customary five percent or less range typical of most roads, because the background traffic on Imperial Highway (approximately 40,000 to 58,000 vehicles daily without landfill traffic) is very high.

To be conservative, however, a PCE adjustment of 2.0 (Highway Capacity Manual 2000, Transportation Research Board, Page 16-10, Adjustment for Heavy Vehicles) was applied to all landfill traffic at all the study area intersections to account for the additional space occupied by these vehicles and for the difference in operating capabilities of heavy vehicles compared to passenger cars.



Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-9
Future AM Peak Hour Volumes Without Project Traffic

Table 5.5-5 summarizes the LOS calculations with the landfill expansion project at the study area intersections for 2021. Calculation sheets are provided in Appendix F-8.

TABLE 5.5-5
2021 SIGNALIZED INTERSECTION LOS WITH THE PROJECT

#	Intersection	AM Peak Hour (1)		Impact
		ICU	LOS	Y/N
1	Lambert Road/Carbon Canyon Road & Valencia Avenue	0.807	D	N
2	Valencia Avenue & Birch Street/Rose Avenue	0.748	C	N
3	Valencia Avenue & Imperial Hwy	1.027	F	Y
4	Imperial Hwy & Kraemer Blvd.	0.925	E	Y
5	Imperial Hwy & Placentia Avenue	0.828	D	N
6	Imperial Hwy & Associated Road	0.718	C	N
7	Imperial Hwy & SR 57 SB Off-Ramp	0.970	E	N(2)
8	Imperial Hwy & S R 57 NB Off-Ramp	0.860	D	N

(1) Peak hour during 7:00 to 9:00 AM peak period.
(2) 1% measurable traffic impact criteria not satisfied for Imperial Highway at the SB 57 Ramps (0.962 x 1.01= 0.972).
Source: BAS (2004).

Figure 5.5-10 shows the projected 2021 AM peak hour volumes at the study area intersections with the landfill expansion project. Figure 5.5-11 shows the projected 2021 daily traffic volumes with the project and other anticipated background traffic growth in the study area.

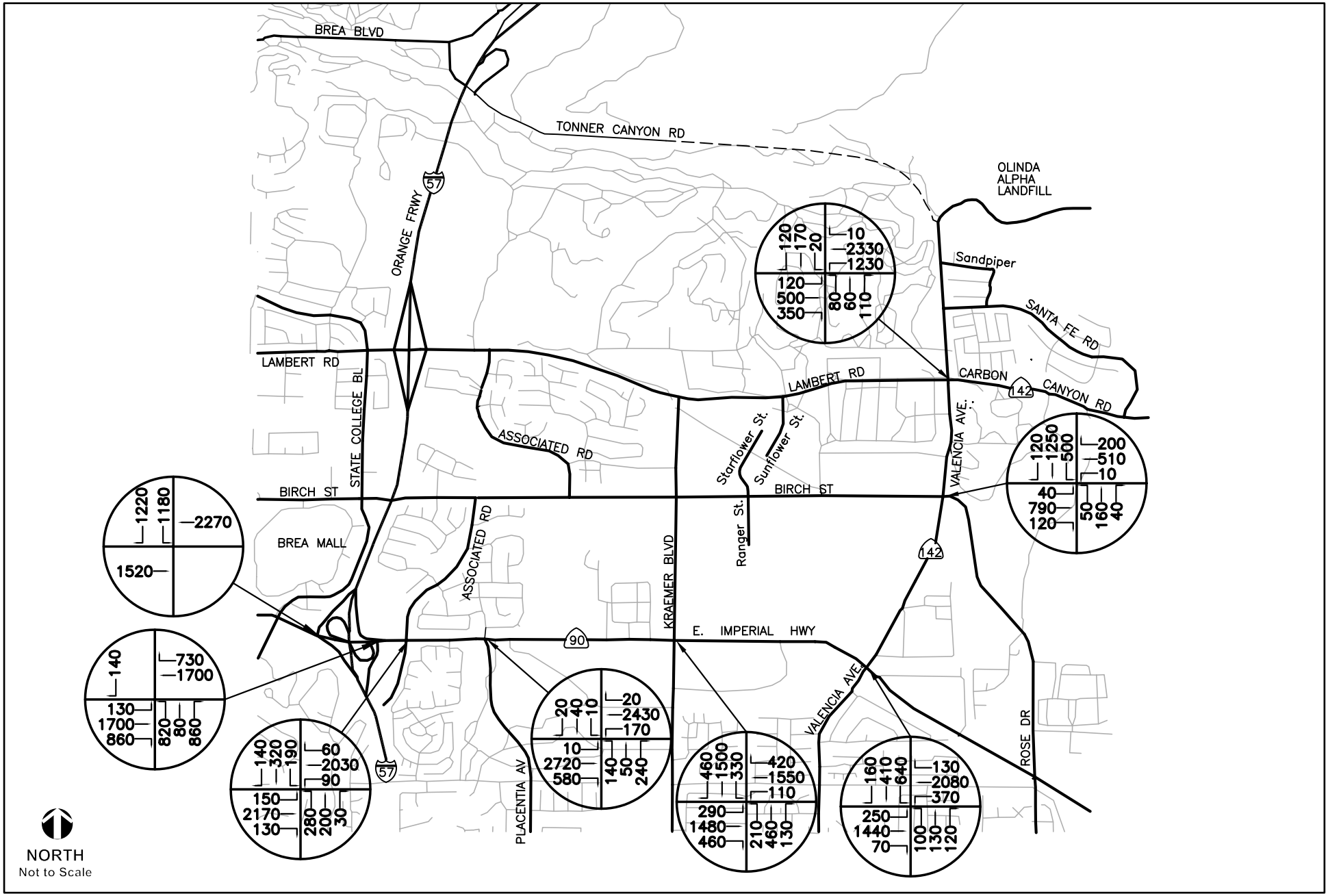
Figure 5.5-12 shows the relationship between landfill traffic and total projected traffic in 2021 at various locations along the primary roads serving Olinda Alpha Landfill. As the figure shows, the landfill traffic is less than 2,000 daily vehicles out of a total of 50,000 to 61,000 total vehicles (or less than four percent of the total vehicles) on Imperial Highway from SR 57 to Valencia Avenue, about 10 to 17 percent of the total vehicles on Valencia Avenue between Lambert Road and Imperial Highway, and about 50 percent of the total vehicles on Valencia Avenue north of Lambert Road directly south of the landfill.

Based on the criteria outlined in Section 5.5.2, the following two intersections will experience significant adverse impacts in 2021as a result of project traffic:

- Valencia Avenue and Imperial Highway.
- Imperial Highway and Kraemer Boulevard.

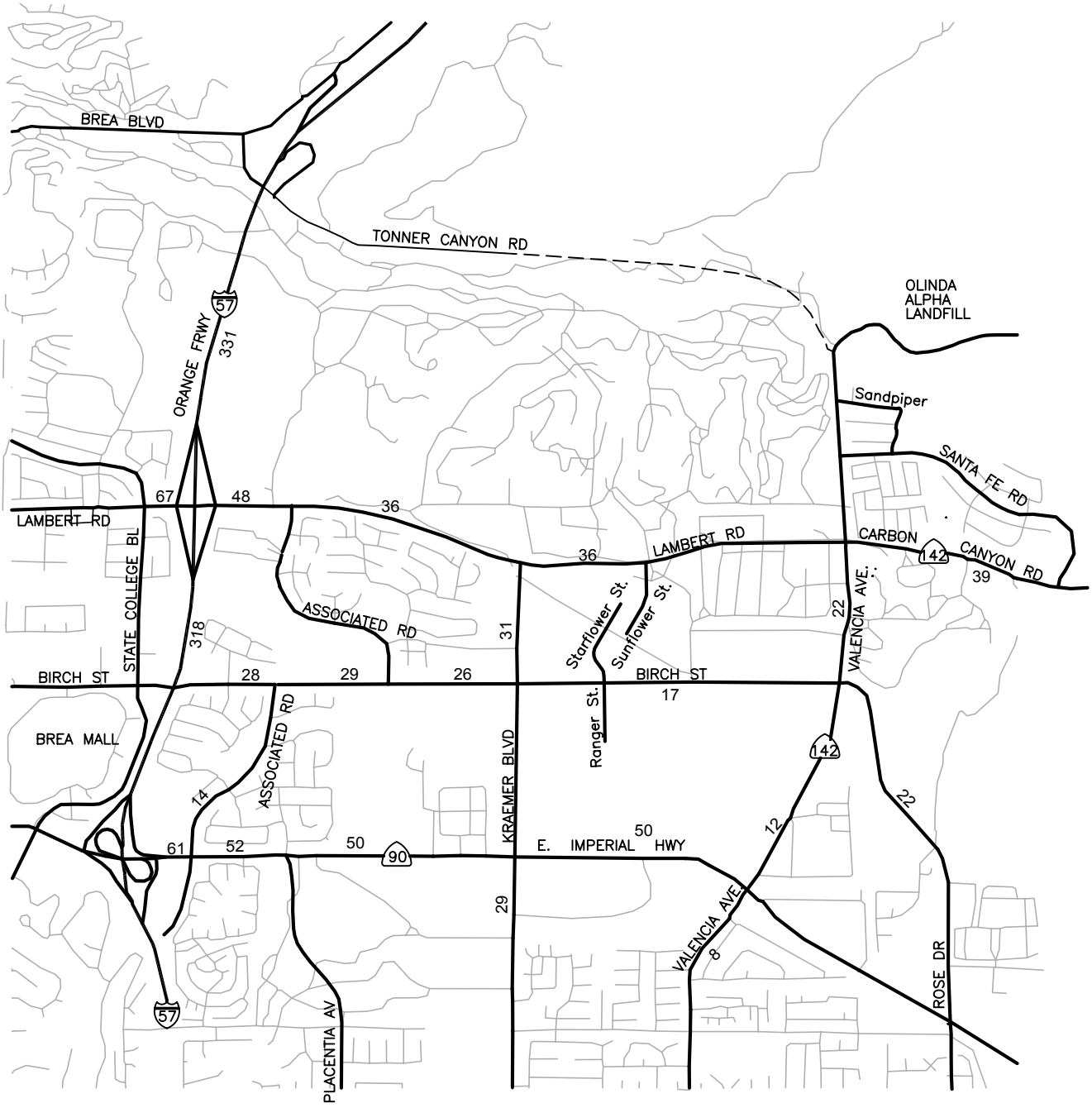
5.5.4.5 Other Traffic Issues

Several other traffic issues which were a result of observations made during the course of this study or issues raised by community members or others are discussed in the following Sections.



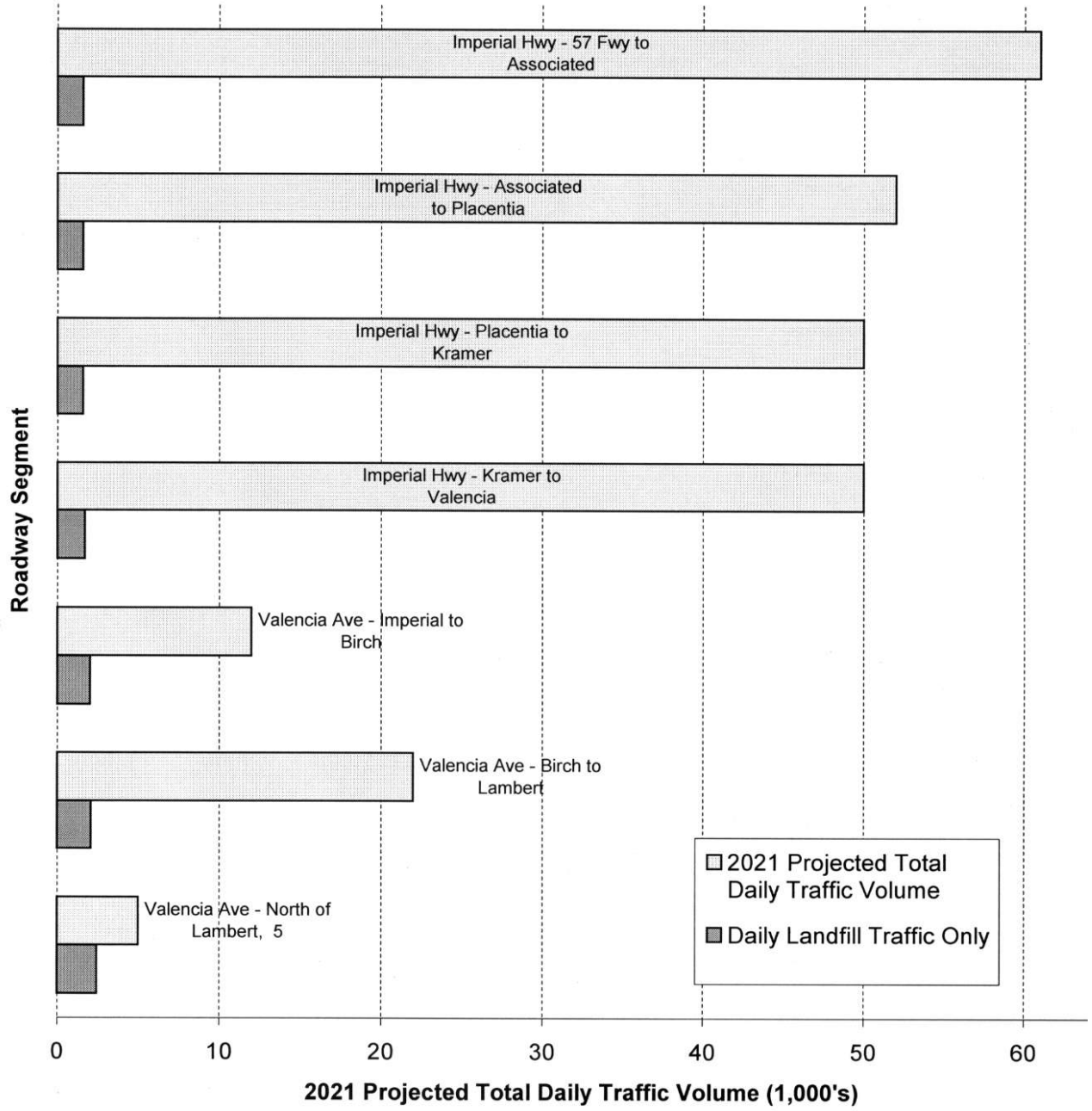
Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-10
Future AM Peak Hour Volumes With Project Traffic



Source: Austin-Foust Associates, Inc. City of Brea General Plan Analysis (2004).

Figure 5.5-11
2021 Projected Total Daily Traffic With Project



Segment	Landfill	Total
Imperial Hwy - 57 Fwy to Associated	1,588	61,000
Imperial Hwy - Associated to Placentia	1,588	52,000
Imperial Hwy - Placentia to Kramer	1,588	50,000
Imperial Hwy - Kramer to Valencia	1,702	50,000
Valencia Ave - Imperial to Birch	2,030	12,000
Valencia Ave - Birch to Lambert	2,084	22,000
Valencia Ave - North of Lambert	2,447	5,000

Source: Bryan A. Stirrat & Associates (2004).

Figure 5.5-12
Daily Landfill Traffic Compared to Total Daily Projected Traffic 2021

Brea Sports Park/Brea Olinda Alpha Unified School District Project

The City of Brea is proceeding with the implementation of a sports park and school on an approximately 37 acre site on the north side of Birch Street from Valencia Avenue to slightly east of Flower Hill Street. The sports park would be on a 23 acre site, part of which abuts Valencia Avenue. The school, expected to serve an estimated 850 elementary or middle school students, would be on a 13 acre site west of the sports park. Three access points are proposed from Birch Street and one from Valencia Avenue (to the sports park). The City prepared a Program EIR for this project in August 2002. That EIR noted on pages ES-3 and 2-3 that access would be only from Birch Street, although Figures 2-3 and 3K-1 in that EIR also indicated access from Valencia Avenue.

The Program EIR for the Sports Park/School did not identify any potential impacts between activity at this proposed site and traffic from the Olinda Alpha Landfill on Valencia Avenue. The only traffic impacts identified in the Program EIR were intersection improvements and concern that parking is provided on-site so as to not have overflow parking impacts on adjacent neighborhoods.

Nevertheless, there is some possibility that persons including children walking to either the sports park or school could walk on Valencia Avenue which does handle large volumes of truck traffic associated with the landfill. However, because the landfill is closed on Sunday, no interaction would occur with Landfill traffic and sports park traffic (or school activity) on that day. Likewise, late afternoon activity at the sports park or school would occur after the landfill closure at 4 PM, Monday through Saturday.

The large majority of school children are driven to school by parents or are brought on school buses which must be made available (although at a cost) for students more than 1.5 miles from school. It appears that the potential for conflict between school children and vehicles on Valencia Avenue is small. Further, the basic ability to provide appropriate safety for students is under control of the City, working through its Traffic Commission and Traffic Engineer. School crossing guards (one potential safety measure) at the two signalized intersections on Valencia Avenue at Lambert Road and Birch streets are a decision which would be assessed by the Traffic Commission, Traffic Engineer and City Police Department in consideration of need and available funding. It should be noted that 88 percent of the daily traffic on Valencia Avenue near the proposed sports park is not landfill related traffic, but other traffic using this segment of Valencia Avenue. Other potential safety measures such as prohibiting parking along Valencia Avenue to enhance visibility and minimize conflicts between parked vehicles and on street traffic, and measures to limit mid-block pedestrian crossings along Valencia Avenue could also occur at the discretion of the City.

Lambert Road Truck Limitations

The landfill expansion traffic study found that some truck traffic is using Lambert Road west of Valencia Avenue in violation of the current weight limitations on this segment of Lambert Road. The weight restriction signing and enforcement are not within the authority of IWMD, but are within the authority of the City of Brea. The City could re-visit the current truck route signing

prohibitions to assure that the signing has optimum target value, and that the message to trucks is presented in a clear understandable manner. For example, there is only one very small "truck route" sign with arrows "left and straight" for southbound Valencia Avenue north of Lambert Road at a location where trucks from the landfill need clear direction regarding prohibitions which exist on Lambert Road. Similarly, there is a small "commercial vehicles over 6,000 pounds gross prohibited" sign mounted extremely high on a pole for eastbound Lambert Road traffic near the SR 57 NB off ramp which is difficult to see given the complexity of traffic volumes and movements in this area.

Speed Limits

The establishment of, signing for and enforcement of speed limits are the responsibility of the City of Brea. Therefore, the City has the ability to adjust speed limits so long as the appropriate traffic and engineering surveys are conducted to post other than prima facie limits. It would be the City's prerogative to review the current speed limits on roads in the vicinity of the landfill, particularly the signing along Imperial Highway between SR 57 and Valencia Avenue to assure speed limits are adequately presented.

Left Turn Storage

During the conduct of the traffic study for the landfill expansion, it was observed that traffic in the eastbound left turn lanes at Imperial Highway and Valencia Avenue often backed into the through lanes or the through traffic backs up and prevents vehicles wishing to turn left from accessing the left turn lanes. The current left turn lanes are 200 feet long with a 100 foot transition. It appears these lanes could be extended west by removing parts of the existing raised median. Two small trees in the median may need to be relocated. It would be the responsibility of the City of Brea to evaluate this intersection and determine the need for this type of improvements.

5.5.5 MITIGATION MEASURES

Imperial Highway at its intersections with Valencia Avenue and Kraemer Boulevard will experience a significant adverse impact as a result of project traffic in 2021. The following mitigation measures address these adverse impacts.

T-1 Imperial Highway at Valencia Avenue. IWMD will contribute a 9.2 percent fair share of the cost to modify the southbound Valencia Avenue approach at Imperial Highway. The fair share allocation is a standard County RDMD guideline for intersections operating at a LOS E without a project and LOS F with a project as the LOS is unacceptable. Under both scenarios, IWMD will contribute its fair share to the incremental impact to the southbound Valencia Avenue approach at Imperial Highway which would change that LOS E to LOS F (Refer to Appendix F-9 for supporting calculation sheets).

The proposed modifications include one additional southbound left turn lane and re-configuration of the rest of the southbound lanes (i.e. one through and one right turn lane)

to one through lane and one optional through/right lane. This measure can be accomplished with re-striping only and with no additional street widening.

This improvement will result in an ICU of 0.836 (LOS D) with mitigation compared to an ICU of 0.981 (LOS E) without mitigation.

T-2 Imperial Highway and Kraemer Boulevard. IWMD will contribute a 100 percent fair share to the cost to modify the eastbound Imperial Highway approach at Kraemer Boulevard. The 100 percent fair share allocation is a standard County RDMD guideline for intersections operating at a LOS D without a project (an acceptable LOS) and LOS E with a project (an unacceptable LOS). Since the projected traffic associated with the Olinda Alpha Landfill expansion project, on its own, would cause the LOS D at the Imperial Highway and Kraemer Boulevard intersection to operate at LOS E, IWMD will contribute 100 percent of the cost to improve the LOS to an acceptable LOS D.

The proposed modifications are to provide an eastbound right turn only lane. This mitigation measure requires widening on the south side, relocation of street light poles and other street furniture.

5.5.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The mitigation described above for the intersections of Imperial Highway and Valencia Avenue and Imperial Highway and Kraemer Boulevard will mitigate the adverse project traffic impacts to below a level of significance.

5.6 AIR QUALITY

The potential impacts of the proposed Olinda Alpha Landfill expansion related to air quality are evaluated in detail in the Air Quality Analysis (LSA Associates, Inc., 2004) provided in Appendix G of this document and summarized in this Section.

5.6.1 EXISTING CONDITIONS

Olinda Alpha Landfill is in northern Orange County which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

5.6.1.1 Meteorology

The Basin is a coastal plain with connecting broad valleys and low hills bordered on the southwest side by the Pacific Ocean and surrounded by high mountains on the other sides. Because the Basin lies in a semi-permanent high pressure zone of the eastern Pacific, the climate is typically mild; however, hot weather, Santa Ana winds and winter storms occur periodically.

The annual average range of temperatures recorded at the Yorba Linda climatological station near Olinda Alpha Landfill are 49.6º Fahrenheit (F) to 77.5ºF. Annual precipitation recorded at the climatological station averaged 13.89 inches from 1948 to 2003. Patterns in temperature and rainfall can vary greatly depending on fluctuations in weather.

The Basin's shallow marine layer and low average wind speeds limit the capacity for horizontal contaminant dispersion. Summer conditions, with stagnant wind flow, high temperatures and increased sunlight, represent the worst case conditions for air pollution during which contaminants are trapped and accumulate. Vertical dispersion of contaminants in the Basin is limited by temperature inversions in the atmosphere close to the earth's surface. Because of moderate to high temperatures during the summer, inversion layers tend to last longer and trap more pollutants than those that occur during the winter. If enough warming occurs, summer inversion layers will break up and vertical dispersion of contaminants will ensue. On days of no inversion or high wind speeds, ambient air pollution concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants are transported primarily on-shore into Riverside and San Bernardino Counties. During winter, extremely low inversions and air stagnation during the night and early morning hours cause accumulation of carbon monoxide (CO) and nitrogen oxides (NO_x). During summer, longer daylight hours and brighter sunshine cause a reaction between hydrocarbons (HC) and NO_x to form photochemical smog.

5.6.1.2 Air Pollution Constituents

Federal and state ambient air quality standards (AAQS) have been established for ozone (O_3), CO, NO_x, sulfur dioxide (SO_2), lead and particulate matter (PM_{10} and $PM_{2.5}$) as listed in Table 5.6-1. Table 5.6-2 summarizes the health effects of each pollutant and Table 5.6-3 summarizes the attainment status of each of these criteria pollutants in the Basin.

TABLE 5.6-1
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[2,5]	Secondary[2,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	–		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation*	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m^3*		50 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m^3*	Gravimetric or Beta Attenuation*	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	–	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.25 ppm (470 µg/m^3)		–		
Lead	30-day average	1.5 µg/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	–	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		–	–	
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography*			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Cloride[9]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: ARB (July 2003).

Footnotes:

[1] California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter, PM_{10}, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25º C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25º C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[8] New federal eight-hour ozone and fine particulate matter standards were promulgated by USEPA on July 18, 1997. Contact the USEPA for further clarification and current federal policies.

[9] The California Air Resources Board (ARB) has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

TABLE 5.6-2
HEALTH EFFECTS SUMMARY OF THE MAJOR CRITERIA AIR POLLUTANTS

Pollutants	Sources	Primary Effects
Ozone (O_3)	Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	By-products from incomplete combustion of fuels and other carbon- containing substances, such as motor exhaust. Natural Events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur-containing fossil fuels. Smelting of sulfur-bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	Contaminated soil (e.g., from leaded fuels and lead-based paints).	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: ARB 2001.

TABLE 5.6-3
CRITERIA POLLUTANTS ATTAINMENT STATUE IN THE BASIN

Pollutant	**State**	**Federal**
Ozone (one-hour)	Nonattainment	Extreme Nonattainment
Ozone (eight-hour)	Not applicable	Nonattainment (Preliminary)
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Not applicable	Nonattainment (Preliminary)
CO	Nonattainment (Los Angeles County only)	Nonattainment
NO_2	Attainment	Attainment/Maintenance
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: ARB 2003.

Ozone

O_3 is formed by photochemical reactions between NO_x and reactive organic gases (ROG) rather than being directly emitted from a source. O_3 is a pungent colorless gas typical of southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly and young children. O_3 levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for both the federal and state one-hour O_3 standards. The United States Environmental Protection Agency (USEPA) has classified the Basin as an extreme nonattainment area for O_3 and has mandated that the Basin achieve attainment by 2010. The entire Basin is expected to be designated as a nonattainment area for the federal eight-hour O_3 standard based on the collected ambient air quality data.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels and is generated almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue and impairment to central nervous system functions. The entire Basin is designated as a nonattainment area for federal CO AAQS. However, Orange County has not exceeded the federal CO AAQS in the past five years. Orange County has been designated by the California Air Resources Board (ARB) to be an attainment area for the state CO AAQS.

Nitrogen Oxides

Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides or NO_x. NO_x is a primary component of photochemical smog. It also contributes to other pollution, including a high concentration of fine particulate matter, poor visibility and acid deposition (acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin has not exceeded either the federal or state AAQS for NO_x in the past five years. It is designated as a maintenance area under the federal AAQS and an attainment area under the state AAQS.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment with both the federal and state SO_2 AAQS.

Lead

Lead is found in old paints and coatings, plumbing and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system and other body systems. Children are highly susceptible to the effects of lead. The entire Basin is in attainment for the federal and state AAQS for lead.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets in the air. Coarse particles (all particles less than or equal to 10 micrometers in diameter, or PM_{10}) are derived from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle (less than 2.5 microns in diameter, or $PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. Coarse particles (PM_{10}) can accumulate in the respiratory system and aggravate health problems such as asthma. USEPA's scientific review concluded that finer particles ($PM_{2.5}$), that penetrate deeply into the lungs, are more likely than coarse particles (PM_{10}) to contribute to the health effects listed in a number of recently-published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung function (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire Basin is a nonattainment area for the federal and state PM_{10} AAQS. The attainment status of $PM_{2.5}$ in the Basin is expected to be designated by the USEPA as a nonattainment, based on the collected ambient air quality data.

5.6.1.3 Existing Air Quality

SCAQMD, together with ARB, maintain ambient air quality monitoring stations in the Basin. The air quality monitoring stations closest to the Olinda Alpha Landfill site are the La Habra (O_3, CO and NO_2), Anaheim (PM_{10} and $PM_{2.5}$) and Costa Mesa (SO_2) stations. The air quality trends at these monitoring stations are representative of the ambient air quality in the City of Brea and surrounding areas. The pollutants monitored at these stations are 1-hour and 8-hour CO, 1-hour and 8-hour O_3, NO_2 and fine and coarse suspended particulate matter (Air Quality Data, 2000, 2001 and 2002, ARB website). SO_2 concentrations in the entire state have been below the federal and state AAQS in the past 10 years.

The ambient air quality data in Table 5.6-4 show that SO_2, NO_2 and CO levels are below the applicable state and federal AAQS at these stations. O_3 levels exceeded the state (three to eight days a year) and federal (once in 2000 only) one-hour AAQS in the past three years at the La Habra station. O_3 levels exceeded the federal eight-hour AAQS twice each year in 2000 and 2001 and did not exceed the federal AAQS in 2002 at the La Habra station. The PM_{10} level exceeded the state AAQS in each of the past three years (5 to 8 days a year), but has not exceeded the federal AAQS at the Anaheim station. $PM_{2.5}$ levels monitored at the Anaheim station exceeded the federal AAQS one to six days a year for the last three years.

Table 5.6-5 shows that existing CO levels at or near intersections along the access roads to Olinda Alpha Landfill are below both the one-hour and eight-hour federal and state AAQS. No exceedance of the AAQS has been recorded in the past three years.

5.6.1.4 Existing On-Site Dust Control

The IWMD implemented a dust control program at the Olinda Alpha Landfill to minimize particulate matter from entering the air during existing landfilling operations. The following activities are included in this program: asphalt-paving of the main internal haul roads; watering and proper maintenance of haul roads; water spraying of soil stockpiles; applying water or planting temporary vegetation on intermediate soil cover; and planting and maintaining a vegetative cover on completed fill and excavation slopes. Fugitive dust control measures are implemented in compliance with site-specific SCAQMD Rule 403 compliance plan which is further described later in Section 5.6.5 (Mitigation Measures).

5.6.2 THRESHOLDS OF SIGNIFICANCE

5.6.2.1 Regulatory Setting

<u>Federal Regulations/Standards</u>

Pursuant to the federal Clean Air Act (CAA) of 1970, the USEPA established national AAQS (NAAQS). The NAAQS were established for six major pollutants, termed criteria pollutants. Criteria pollutants are defined as those pollutants for which the federal and state governments have established AAQS for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the USEPA to classify regions as attainment or nonattainment, depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the USEPA.

The USEPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the SCAB.

TABLE 5.6-4
AMBIENT AIR QUALITY AT THE LA HABRA, ANAHEIM AND COSTA MESA AIR MONITORING STATIONS

	One Hour Carbon Monoxide[1]		One Hour Ozone[2]		Coarse Suspended Particulate (PM_{10})[3]		Nitrogen Dioxide[4]	
	Max. 1 Hour Conc. (ppm)	**Number of Days Exceeded**	**Max. 1 Hour Conc. (ppm)**	**Number of Days Exceeded**	**Max. 24 Hour Conc. ($\mu g/m^3$)**	**Number of Days Exceeded**	**Max. 1 Hour Conc. (ppm)**	**Number of Days Exceeded**
State Standards	> 20 ppm/1 hr		> 0.09 ppm/1 hr		> 50 $\mu g/m^3$, 24 hrs		> 0.25 ppm/1 hr	
2002	10.2	0	0.12	3	69	5	0.12	0
2001	10.7	0	0.11	4	93	6	0.13	0
2000	13.8	0	0.14	8	126	8	0.12	0
MAXIMUM	**13.8**		**0.14**		**126**		**0.13**	
Federal Standards	> 35 ppm/1 hr		> 0.12 ppm/1 hr		> 150 $\mu g/m^3$, 24 hrs		0.053 ppm, annual average	
2002	10.2	0	0.12	0	69	0	0.025	0
2001	10.7	0	0.11	0	93	0	0.027	0
2000	13.8	0	0.14	1	126	0	ND[1]	0
MAXIMUM	**13.8**		**0.14**		**126**		**0.027**	

1 Data from the La Habra monitoring station.

2 Data from the Anaheim monitoring station.

3 Data from the La Habra monitoring station.

4 Data from the Costa Mesa monitoring station.

Source: ARB, 2000 to 2002.

TABLE 5.6-4 (Continued)
AMBIENT AIR QUALITY AT LA HABRA, ANAHEIM AND COSTA MESA AIR MONITORING STATIONS

	Eight Hour Carbon Monoxide[1]		Eight Hour Ozone[2]		Fine Suspended Particulate ($PM_{2.5}$)[3]		Sulfur Dioxide[4]	
	Max. 8 Hour Conc. (ppm)	Number of Days Exceeded	Max. 8 Hour Conc. (ppm)	Number of Days Exceeded	Max. 24 Hour Conc. ($\mu g/m^3$)	Number of Days Exceeded	Max. 24 Hour Conc. (ppm)	Number of Days Exceeded
State Standards	≥ 9.0 ppm/8 hr		No State Standard		No State Standard		> 0.04 ppm/24 hr	
2002	4.5	0	0.08	NA[5]	68.6	NA	0.011	0
2001	4.7	0	0.09	NA	70.8	NA	0.005	0
2000	6.2	0	0.10	NA	113.9	NA	0.006	0
MAXIMUM	**6.2**		**0.10**		**113.9**		**0.011**	
Federal Standards	≥ 9.0 ppm/8 hr		> 0.08 ppm/8 hr		> 65 $\mu g/m^3$, 24 hrs		0.14 ppm/24 hr	
2002	4.5	0	0.08	0	68.6	1	0.002	0
2001	4.7	0	0.09	2	70.8	1	0.001	0
2000	6.2	0	0.10	2	113.9	6	0.002	0
MAXIMUM	**6.2**		**0.10**		**113.9**		**0.002**	

Source: ARB, 2000 to 2002.

1 Data at the La Habra monitoring station.

2 Data from the La Habra monitoring station.

3 Data from the Anaheim monitoring station.

4 Data from the Costa Mesa monitoring station.

5 No State standard.

Conc. = Concentration

TABLE 5.6-5
EXISTING VEHICULAR TRAFFIC INTERSECTION CO CONCENTRATIONS

Intersection	Distance to Receptor Location from Roadway Centerline (meters) [1]	2004 1 Hr CO Concentration [2] (ppm)	2004 8 Hr CO Concentration [3] (ppm)	Exceeds State Standards	
				1 hr	8 hr
Associated Road & Imperial Highway	14	12.4	6.1	No	No
	14	12.4	6.1	No	No
	15	12.4	6.1	No	No
	16	12.4	6.1	No	No
Placentia Avenue & Imperial Highway	12	12.4	6.1	No	No
	12	12.2	5.9	No	No
	14	12.2	5.9	No	No
	14	12.2	5.9	No	No
Kraemer Boulevard & Imperial Highway	17	12.4	6.1	No	No
	17	12.4	6.1	No	No
	19	12.4	6.1	No	No
	20	12.4	6.0	No	No
Rose Drive & Imperial Highway	14	12.8	6.4	No	No
	14	12.8	6.4	No	No
	15	12.8	6.4	No	No
	16	12.6	6.2	No	No
Valencia Avenue & Birch Street	14	11.6	5.5	No	No
	14	11.6	5.5	No	No
	14	11.5	5.5	No	No
	14	11.5	5.5	No	No
Valencia Avenue & Carbon Canyon Road	14	11.7	5.6	No	No
	14	11.5	5.5	No	No
	15	11.4	5.4	No	No
	17	11.4	5.4	No	No
Valencia Avenue & Imperial Highway	15	11.9	5.7	No	No
	15	11.9	5.7	No	No
	16	11.8	5.7	No	No
	17	11.8	5.7	No	No

1. Distance to receptor location is based on the width of the road and an additional three meters from the edge of the road to the receptor as per Caltrans Carbon Monoxide Protocol for Project Level Analyses.
2. Includes ambient one-hour CO concentration of 10.0 ppm. The state's one-hour CO AAQS is 20 ppm. CO concentrations at all receptor locations would be the same with or without project.
3. Includes ambient eight-hour CO concentration of 4.4 ppm. The state's eight-hour CO AAQS is 9.0 ppm. CO concentrations at all receptor locations would be the same with or without project.

Source: LSA Associates, Inc., February 2004.

The USEPA established new NAAQS for ground level O_3 and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health standards for O_3 and particulate matter, was unconstitutional as an improper delegation of legislative authority to the USEPA. On February 27, 2001, the United States Supreme Court upheld the way the government sets AAQS under the CAA. The court unanimously rejected industry arguments that the USEPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the USEPA took too much lawmaking power from Congress when it set tougher standards for O_3 and soot in 1997. Nevertheless, the court threw out the USEPA's policy for implementing new O_3 rules, saying the agency ignored a section of the law that restricts its decision making authority. It ordered the agency to come up with a more reasonable interpretation of the law.

State Regulations/Standards

The State of California began to set California AAQS (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CAAQS are listed in Table 5.6-1.

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the state to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans are required to achieve a minimum five percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The basin is currently classified as a nonattainment area for three criteria pollutants: O_3, CO and coarse particulates.

Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the state. The Federal CAA Amendments of 1977 required that each state adopt a State Implementation Plan (SIP) outlining pollution control measures to attain the NAAQS in nonattainment areas of the state.

The ARB coordinates and oversees both state and federal air pollution control programs in California. ARB oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a SIP for USEPA approval. ARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by ARB to classify air basins as

attainment or nonattainment with respect to each pollutant and to monitor progress in attaining the AAQS. ARB has divided the state into 15 air basins. Significant authority for air quality control within these air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan

The SCAQMD and SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. AQMPs were adopted for the Basin for 1979, 1982, 1989, 1991, 1994, 1997 and 2003. Compliance with the provisions of the CAA and CCAA is the primary focus of the AQMP.

The 1997 AQMP was prepared pursuant to federal and state clean air legislation and addresses 1990 CAA requirements with respect to particulate matter AAQS. Under the CAA, the AQMP must demonstrate attainment of PM_{10} AAQS by 2006 for both 24-hour and annual average AAQS. The 1997 AQMP responds to this requirement, relying mostly on the control measures outlined in the 1994 AQMP. The 1997 AQMP also updates the demonstration of attainment of the federal O_3 and CO AAQS, and includes a maintenance plan for NO_2, as the Basin now qualifies for attainment of the federal NO_2 AAQS.

According to the 1997 AQMP, attainment of all federal AAQS was to occur no later than 2000 for CO, 2006 for PM_{10} and 2010 for O_3. State AAQS were proposed to be attained no later than 2000 for CO. State AAQS for O_3 and PM_{10} would not be required to be achieved until after 2010.

The 1997 AQMP carried forward the approach and key elements in the 1994 AQMP by focusing on market based strategies and incentives versus command and control regulations. New elements to the 1997 Plan included improved emission inventory and current air quality information; refined control strategy, which allows for alternative approaches; elimination of future indirect source measures; amendments to the federal post-1996 Rate of Progress Plan and Federal Attainment Plans for O_3 and CO; a maintenance plan for NO_X; and an attainment demonstration and SIP revision for PM_{10}.

Implementation of the AQMP is based on a series of control measures that vary by source type, such as stationary or mobile, as well as by the pollutant targeted. Similar to the 1994 AQMP, the Plan proposed two tiers of control measures, based on the availability and readiness of technology. Short and immediate term measures rely on known technologies and are expected to be implemented between 1997 and 2005. Long term measures rely on the advancement of technologies and control methods that can be reasonably expected to occur between 2000 and 2010.

Control measures focus on adoption of new regulations or enhancement of existing regulations for stationary sources, implementation/facilitation of advanced transportation technologies (i.e., telecommunication, zero emission and alternative fuel vehicles and infrastructure, and both capital and noncapital based transportation improvements). Capital based improvements consist of high occupancy vehicle (HOV) lanes, transit improvements, traffic flow improvements, park

and ride and intermodal facilities, and urban freeway, bicycle and pedestrian facilities. Noncapital based improvements consist of rideshare matching and Congestion Management Plan (CMP) based transportation demand management activities.

The SCAQMD governing board approved the 1997 AQMP on November 15, 1996. After approval, the AQMP was submitted to the ARB for its review and approval. ARB approved the O_3 and PM_{10} parts of the 1997 AQMP on January 23, 1997, and submitted the AQMP to the USEPA as proposed revisions to the SIP. The USEPA rejected the SCAQMD's revision of its 1997 AQMP in January 1999. The rejection, however, covers only the provisions of the AQMP designed to attain the federal O_3 AAQS. Separate parts of the 1997 AQMP relating to CO and NO_2 have previously been approved, and the USEPA has yet to act on that part of the 1997 AQMP related to PM_{10}. As a result of the rejection, SCAQMD prepared a draft "Proposed 1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin" on October 7, 1999, for public review and comment. The 1999 Amendment proposed to revise the O_3 part of the 1997 AQMP that was submitted to the USEPA as a revision to the Basin part of the 1994 California Ozone SIP. The SCAQMD governing board adopted the "1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin" on December 10, 1999. The USEPA approved the 1999 Amendment for Ozone in 2001, and currently there is no approved SIP for CO and PM_{10}. In addition, the SCAQMD governing board settled with three environmental organizations on its litigation of the 1994 Ozone SIP.

The SCAQMD adopted a comprehensive plan update, the 2003 AQMP, for the Basin in August 2003. The 2003 AQMP seeks to demonstrate attainment with the state and federal air AAQS and incorporates a revised emissions inventory, the latest modeling techniques, updated control measures remaining from the 1997/1999 SIP and new control measures. The ARB approved the 2003 AQMP, with minor modifications. The ARB forwarded the modified 2003 AQMP to the USEPA for approval in October 2003.

5.6.2.2 CEQA Thresholds

A project would normally be considered to have a significant adverse effect on air quality if the project would violate any AAQS, contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

Impacts may be derived from short term activities associated with the construction of new facilities within the site boundary and long term impacts associated with ongoing operations on the site. An air quality impact analysis is generally structured to address activities that have quantifiable levels of air pollutant emissions that can be compared to the defined standards after those emissions are carried off-site by prevailing winds. Because many pollutants require considerable time to undergo chemical reactions and because the Basin routinely exceeds AAQS for a reactive pollutant such as O_3, there is no currently available reasonable mechanism to explicitly quantify "… contributes substantially to an existing violation…" as described in the CEQA Guidelines. To assist in the determination of the potential significance of air quality impacts, the SCAQMD has published de minimis emission levels that are considered to be the levels below which an air quality impact is not significant. The SCAQMD established emission

thresholds are described in detail in its CEQA Air Quality Handbook (SCAQMD, November 1993) and are summarized below.

Thresholds for Construction Emissions

The following significance thresholds for construction emissions have been established for the Basin:

Emissions Thresholds for Construction

- 75 pounds per day or 2.5 tons per quarter of reactive organic compounds (ROC).
- 100 pounds per day or 2.5 tons per quarter of NO_X.
- 550 pounds per day or 24.75 tons per quarter of CO.
- 150 pounds per day or 6.75 tons per quarter of coarse particulate (PM_{10}).
- 150 pounds per day or 6.75 tons per quarter of sulfur oxides (SO_X).

Projects in the Basin with construction related emissions that exceed any of these short term emission thresholds should be considered to result in significant adverse impacts under CEQA.

Thresholds for Operational Emissions

The daily operational emissions significance thresholds for the Basin are as follows.

Emissions Thresholds for Pollutants with Regional Effects

- 150 pounds per day of PM_{10}.
- 150 pounds per day of SO_X.
- 55 pounds per day of ROC.
- 55 pounds per day of NO_X.
- 550 pounds per day of CO.

Projects with operation related emissions that exceed any of the above listed emission thresholds are considered to result in significant adverse impacts under CEQA.

Concentration Standards for Pollutants with Local Effects

- California one-hour CO standard of 20.0 parts per million (ppm).
- California eight-hour CO standard of 9.0 ppm.

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below the state and federal CO AAQS. If ambient levels are below the AAQS, a project is considered to have a significant adverse impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a state or federal AAQS, project emissions are considered significant and adverse if they increase one-hour CO concentrations by 1.0 ppm or more, or they increase eight-hour CO

concentrations by 0.45 ppm or more. There are no local emission concentration standards for the other criteria pollutants.

Health Risk Analysis Thresholds

For pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above, the definition of substantial pollutant concentrations varies. For toxic air contaminants (TAC), substantial is taken to mean that the individual cancer risk exceeds a threshold considered to be a prudent risk management level. If best available control technology for toxics (T-BACT) has been applied, the individual cancer risk to the maximum exposed individual (MEI) must not exceed ten in one million in order for an impact to be determined not to be significant.

The following limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from project emissions of TAC have been established for the Basin:

> The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the project will not result in any of the following:
>
> (A) An increased MICR greater than one in one million (1.0×10^{-6}) at any receptor location, if the project is constructed without T-BACT.
> (B) An increased MICR greater than ten in one million (1.0×10^{-5}) at any receptor location, if the project is constructed with T-BACT.
> (C) A cancer burden greater than 0.5.

5.6.3 METHODOLOGY RELATED TO AIR QUALITY

A number of air quality modeling tools are used to assess potential air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have developed guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, *CEQA Air Quality Handbook*, *1993*, were adhered to in the assessment of air quality impacts for the proposed Olinda Alpha Landfill expansion project.

The air quality assessment for the proposed project includes estimating emissions associated with short term construction and long term operation of the proposed project. Due to the characteristics of the proposed project, (i.e., regional landfill options consideration, regional air quality impacts include only mobile sources emissions), there would be stationary source emissions from the landfill gas, flares, and the gas-to-energy facility which generate 5.7 megawatts of power. Mobile emissions include vehicle trips to and from the landfill considered in this analysis. In addition, localized air quality impacts, i.e., CO concentrations (CO hot spots) at intersections in the project area, would potentially be affected due to the proposed changes. Caltrans' Transportation Project-Level Carbon Monoxide Protocol (December 1997) was used in this air quality analysis for the CO hot spot analysis.

Screening Level Health Risk Analysis

Air dispersion modeling using the ISCST3 model was conducted to develop spatial relationships between truck traffic traveling on Valencia Avenue north of Carbon Canyon Road and the existing/proposed residences in the Olinda Ranch development. The minimum distance from any residence to the mid-lane distance of the road is eight meters. An array of volume sources was arranged along the north and south bound lanes of Valencia Avenue, pacing them at five-meter intervals and defining them as the width of the lane and the height of the exhaust stacks (plus a few feet above the trucks to account for upward momentum). Using historical traffic volume data from IWMD and non-landfill traffic for current traffic levels and emission factors from the California ARB emission factor model EMFAC2002, an emission factor was developed for diesel particulates that represents all the categories of vehicles and trucks traveling on Valencia Avenue north of Carbon Canyon Road.

A screening level health risk assessment modeling was conducted for emissions associated with the on-site LFG flare system (approximately 1,590 feet from the nearest residences in Olinda Ranch) and heavy-duty, diesel-driven landfill equipment exhaust in the future expansion area (approximately 4,250 feet from the nearest residences in Olinda Ranch) in the northeast part of the landfill property.

The Office of Environmental Health Hazard Assessment (OEHHA) technique for estimating potential health risks was used to determine the potential carcinogenic and chronic health risks to individuals living in the existing and proposed residences along Valencia Avenue north of Carbon Canyon Road. The modeled results were added to the ambient diesel particulate concentration of 2.2 $\mu g/m^3$ for outdoors and 1.47 $\mu g/m^3$ for indoors (as published in Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, California Environmental Protection Agency, June, 1998) and proportioned for a daily exposure of 10 hours indoors and 14 hours outdoors every day for 70 years.

5.6.4 POTENTIAL IMPACTS

The proposed project would extend the operations of Olinda Alpha Landfill from 2013 to approximately 2021. The existing landfill operations generate air emissions from on-site operations and from off-site waste/refuse truck trips. The proposed landfill expansion would result in the continuation of the same existing condition related to air emissions from landfilling, vehicular trips, and stationary sources over a longer period of time.

5.6.4.1 Short Term Impacts

Air quality impacts would occur during the construction of required prescriptive or alternative liner systems, surface water drainage systems, subdrain system, LFG collection and control systems, and leachate collection and recovery systems to accommodate expansion of Olinda Alpha Landfill. Major sources of emissions during construction include exhaust emissions from construction vehicles and equipment and fugitive dust generated by construction vehicles and equipment traveling over exposed surfaces, as well as by soil disturbances from excavation and backfilling.

Construction Emissions

Construction activities would cause combustion emissions from heavy-duty construction vehicles, haul trucks and vehicles transporting the construction crews. Exhaust emissions during construction activities on-site would vary daily as construction activity levels change. It is anticipated that peak excavation days would generate a larger amount of air pollutants than during other construction days, due to larger amount of soil to be excavated and removed from the site.

Fugitive Dust

Fugitive dust emissions are generally associated with excavation, windblown unpaved areas, vehicle and equipment travel on unpaved roads, and dirt/debris pushing. Dust generated during construction activities would vary substantially depending on the level of activity, the specific operations and weather conditions.

The SCAQMD estimates that each acre of graded surface creates about 26.4 pounds of PM_{10} per workday during the construction phase of the project and 21.8 pounds of PM_{10} per hour from dirt/debris pushing per dozer. It is assumed that up to a maximum of one acre of land would be disturbed on any one day. It is also assumed that four vehicles would be used up to eight hours per day in active soil disturbance activities. It is assumed that there would be a maximum of 0.5 acre of open soil stock piles on the project site, which will create 42.8 pounds per day (ppd) of windblown PM_{10}. Approximately 941 pounds of PM_{10} per day would be generated from soil disturbance activities and vehicle exhaust before mitigation during the peak construction phase. This level of dust emission would exceed the SCAQMD threshold of 150 pounds per day. Mitigation measures would reduce emissions to 476 pounds of PM_{10} per day. Despite the application of mitigation measures, peak day construction emissions would remain above the SCAQMD daily thresholds for all criteria pollutants after implementation of standard dust suppression measures as shown in Table 5.6-6 (further discussed below).

The project will comply with SCAQMD Rules, which would assist in reducing the short term air pollutant emissions. Fugitive dust from a construction-site must be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Dust suppression techniques like the existing dust control program (described in Section 5.6.1.4) would continue to be implemented at the landfill under the expansion plan to prevent fugitive dust from creating a nuisance off-site. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Assuming a mitigating efficiency of 50 percent by implementation of the standard measures, daily PM_{10} emissions from soil disturbance under the proposed project would be reduced to approximately 476 pounds. Compliance with these Rules would reduce impacts on sensitive receptors in the project vicinity.

TABLE 5.6-6
PEAK DAY CONSTRUCTION EMISSIONS
(lbs.day)

Number and Equipment Type[1]	Hours of Operation	Pollutants				
		CO	ROC	NO_X	SO_X	PM_{10}
1 Excavator	10	3.6	0.3	7.8	0.6	0.5
1 Motor Grader	10	1.5	0.4	7.1	0.9	0.6
1 Tracked Loader	10	2.0	1.0	8.3	0.8	0.6
1 Wheeled Tractor	10	35.8	1.8	12.7	0.9	1.4
1 Miscellaneous[2]	10	6.8	1.5	17.0	1.4	1.4
2 On-Site Haul Trucks	10	9.2	0.9	7.0	0.1	0.3
Delivery Truck Trips[3]		3.2	0.3	6.3	0.1	0.1
Worker Commute Exhaust[4]		6.4	0.2	0.9	0.0	0.1
Subtotal Exhaust Emission		**68.5**	**6.4**	**67.1**	**4.8**	**5**
Fugitive Dust Emissions						
Open Stock Pile[5]						42.8
Dirt/Debris Pushing[6]						872.0
Graded/Exposed Surface[7]						26.4
---TOTAL GRADING NO MITIGATION		**68.5**	**6.4**	**67.1**	**4.8**	**941.2**
TOTAL GRADING WITH MITIGATION[8]		**68.5**	**6.4**	**67.1**	**4.8**	**475.6**
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Significant?		**NO**	**NO**	**NO**	**NO**	**YES**

Notes:
1 Emission factors and calculations based on SCAQMD, *1993 CEQA Air Quality Handbook*, Tables A9-8-A and A9-9.
2 A water truck.
3 Based on a haul length of 25 miles each way and five loads per day using EMFAC2002 emission rates.[4] Based on a commute length of 25 miles each way for 14 workers.
5 Emissions from one-half acre of open stock piles.
6 Emissions by 4 earth-moving vehicles operating eight hours per day.
7 Emissions from one acre of graded/exposed surface.
8 Assumes 50 percent effectiveness for dust suppression measures.
Source: LSA (2004).

It is further assumed that on a peak day, a total of 14 workers would be working in the construction area. Assuming an average commute length of 25 miles each way for every worker, emissions from the daily 700 miles of travel by workers would generate approximately 9.6 pounds per day (ppd) of CO, 0.5 ppd of ROC, 7.2 ppd of NO_X, 0.1 ppd of SO_X and 0.2 ppd of PM_{10} from vehicle exhaust and tire wear.

As shown in Table 5.6-6, peak-day construction emissions under the proposed expansion project would be below the SCAQMD daily thresholds for all criteria pollutants after implementation of standard dust suppression measures.

5.6.4.2 Long Term Impacts

Long term emissions associated with the proposed project would be generated from on-site landfill vehicle operations, waste/refuse transfer trucks, as well as the landfill gas, gas-to-electric engines and flare system.

Landfill Operations

Based on data collected by IWMD, on-site equipment currently used at the landfill to dispose of an annual average of 7,000 TPD of MSW and 3,000 to 4,000 TPD exempt commodity on a daily basis is listed in Table 5.6-7. Based on information provided by IWMD, there are currently 61 total landfill personnel at Olinda Alpha Landfill to conduct the daily operations.

TABLE 5.6-7
OLINDA ALPHA LANDFILL LIST OF OPERATING EQUIPMENT

Quantity	Description	Uses
5	Dozer	Push, compact, grade and cover refuse. Walk-in slopes, miscellaneous earthwork.
2	Compactor	Refuse and cover compaction.
2	Scraper	Haul earth for cut and cover operations.
2	Water Truck	Control cover soil moisture content and dust control, landscape irrigation, and fire fighting.
1	Motor Grader	Grade unloading deck, maintain internal roads and drainage control of decks.
1	Backhoe	Load, dig, and trench earthen material.
1	Dump Truck	Move and haul miscellaneous materials such as broken asphalt, silt, earth cover, etc.
2	Wheel Dozer	Clean the roads and maintain trash areas.

Source: County of Orange Integrated Waste Management Department, January 2004.

It was assumed that dozers and compactors are used 10 hours per day and all other equipment is used for 8 hours per day when the landfill is open for business. It should be noted that emissions from on-site equipment used in landfill operations would continue from 2013 through 2021, and would cease to occur after year 2021. Table 5.6-8 lists the estimated existing emissions from daily on-site equipment usage described above as well as waste/refuse trucks to and from Olinda Alpha Landfill. The waste/refuse trucks coming to Olinda Alpha Landfill are from both in-County and out-of-County sources.

Waste/Refuse Transfer Trucks

Based on the data collected by the IWMD, waste/refuse trucks coming to the Olinda Alpha Landfill are from both in-County and out-of-County sources. Table 5.6-8 lists emissions associated with haul trucks to and from the Olinda Alpha Landfill. It should be noted that emissions from waste/refuse transfer trucks coming to the Olinda Alpha Landfill would continue from 2013 through 2021, and would be diverted to other landfilling destinations after 2021. Diverted landfilling destinations would involve greater transportation related emissions as compared to the OAL site due to greater travel distances from the source area of MSW generation.

TABLE 5.6-8
LANDFILL OPERATIONS EMISSIONS
(pounds per day)

Source[1]	No. of Units	Hours of Operation	NO_X	ROC	PM_{10}	SO_X	CO
Waste Truck Trips[2]	1,784		516.1	24.2	10.9	5.8	259.1
Other deliveries[3]	384		10.0	1.2	0.3	0.1	31.7
Motor Grader	1	8	5.7	0.3	0.5	0.7	1.2
Loader	1	8	6.6	0.8	0.5	0.6	1.6
Compactor	2	10	34.0	3.0	2.8	2.9	13.5
Scrapers	2	8	61.4	4.3	6.6	7.4	20.0
Water Trucks	2	8	18.2	1.0	2.6	8.6	6.4
Dozer	5	10	63.0	6.0	5.6	7.0	17.5
Backhoe	1	8	13.6	1.2	1.1	1.1	5.4
Service Trucks	3	8	1.4	0.6	0.0	0.1	5.4
Wheel Dozer	2	10	69.5	6.6	1.7	6.6	33.1
Employee Commute/ Visitor Trips[4]	122		4.0	0.9	0.2	0.0	27.8
Subtotal Vehicular Emissions			**803.5**	**50.1**	**32.8**	**40.9**	**422.7**
Landfill Gas Fugitive[5]				533			
Gas-to-energy Facility[6]			216.0	65.0	3.0	22.0	438.0
Flare System[7]			196.1	9.4	77.5	48.2	48.6
Subtotal Stationary Source Emissions			**412.1**	**607.4**	**80.5**	**70.2**	**486.6**
Total Vehicular and Stationary Source Emissions			**1,215.6**	**657.5**	**113.3**	**111.1**	**909.3**
SCAQMD Threshold			**55**	**55**	**150**	**150**	**550**
Exceed Threshold?			**Yes**	**Yes**	**No**	**No**	**Yes**

Source: LSA Associates using source test data, EMFAC2002 and the SCAQMD CEQA Air Quality Handbook.

Notes:

1 Emission factors based on SCAQMD, *1993 CEQA Air Quality Handbook*, Tables A9-8-A and A9-9. Based on the USEPA's AP-42 emission factors.

2 Based on an average haul length of 25 11.4 miles each way using EMFAC2002 emission rates.

3 Based on an average haul length of nine miles each way using EMFAC2002 emission rates

4 Based on a commute length of 25 miles each way.

5 Assumes that 70 percent of the landfill gas will be captured by the landfill gas collection system. This is based on generally accepted methods of estimating landfill gas generation rates.

6 2004 Measured Emissions. Maximum permitted emissions are: 96 lb/day ROC, 822 lb/day NO_X, 550 lb/day CO, 36 lb/day SO_X and 3 lb/day PM_{10}.

7 Emissions from most current (2003) flare source test. Emissions vary year to year. Maximum permitted emissions are: 93.6 lb/day ROC, 339.4 lb/day NO_X, 106.1 lb/day SO_X, 407.4 lb/day CO, and 136.6 lb/day PM_{10}

On-Site Landfill Gas and Flare System

The Olinda Alpha Landfill is a Class III landfill permitted for the disposal of non-hazardous municipal solid waste (MSW). The SCAQMD regulates landfill operations related to landfill gas emissions, subsurface gas migration, and fugitive dust control for Orange County landfills. The CIWMB and LEA also regulate LFG subsurface migration. Environmental monitoring of air, landfill gas (LFG), and groundwater is conducted at all the sites to detect LFG migration or groundwater contamination. An existing LFG extraction system and flare station is located at the Olinda Alpha Landfill for LFG control. In addition, utilization of LFG for energy production currently is being conducted at Olinda Alpha Landfill. Table 5.6-8 lists the emissions associated

with fugitive landfill gas (30 percent of total generated), emissions from the flare system (based on the most recent source testing results) and the gas-to-energy facility.

Emissions associated with on-site LFG and flare systems for waste deposited through 2013 would continue to occur at the Olinda Alpha Landfill even if the project is not implemented. Emissions associated with LFG and flare systems from waste deposited between 2013 and 2021 would incrementally increase the quantity of landfill gas generation. These additional LFG and flare system emissions would occur regardless of which project alternative is selected because landfill gas emissions associated with decomposition of MSW are not site-specific and would continue to be generated as long as there is MSW generation and deposition in landfills. As such, there would be no increase in regional LFG associated with the proposed project as compared to existing conditions or the No Project Alternative. However, the proposed project would change the methane generation peak from 8,000 SCFM in year 2017 to 9,000 SCFM in year 2023 based on projections using existing landfill gas extraction rates (See Technical Memorandum at the end of Appendix G). As a result, the LFG extraction rate would increase from 11,200 SCFM to 12,600 SCFM (approximately 12% increase) at an assumed extraction efficiency of 70% and a methane concentration of 50% which are industry standard assumptions (See Technical Memorandum at the end of Appendix G). No additional flares beyond the third flare (which provides a total capacity of 12,600 SCFM) will be required to accommodate the additional LFG produced. Therefore, the increase in emissions will not exceed the levels required for the permitted landfill operations.

Total Project Related Air Pollutant Emissions. Table 5.6.8 shows that emissions associated with current landfill operations exceed the SCAQMD daily emission thresholds for three of the five criteria pollutants. These landfill operations related emissions would continue from year 2013 to approximately 2021 as a result of the proposed project. Because these emissions cannot be feasibly reduced to below the SCAQMD emission thresholds, the proposed project would have a significant long-term air quality impact. It should be noted that this significant impact to air quality would occur regardless of whether the project is developed or not (if the MSW that is currently disposed of at OAL is disposed of within the south coast air basin), simply because there will continue to be MSW generation and air pollutant emissions associated with the need to dispose of it. These SCAQMD emission thresholds signal that this is a significant emission source. Because these emissions will occur regardless of whether the project is developed or not, consideration of the magnitude of air pollution generated by MSW disposal under the different project alternatives should be considered in the evaluation of regional air pollution and is further discussed in Section 6.0 (Alternatives to the Proposed Project).

In terms of local concentrations of emissions from Olinda Alpha Landfill, monthly monitoring of all occupied structures within the landfill boundary is performed using an Organic Vapor Analyzer (OVA). IWMD P&P requires remedial action measures when methane registers ≥500 ppm in an on-site structure. The off-site receptors are at least 1,950 feet away from these site structures, therefore no impact would occur for off-site receptors.

Odor Impact Analysis

Existing On-Site Odor Control

Potential odor impacts associated with landfilling include the odors of fresh refuse and/or LFG. Landfill odors consist of two main types of odors. Fresh trash has a "wet paper" characteristic odor that occurs during initial oxygen-sufficient decomposition. After several weeks, the character of the odor changes to a "sickly sweet" odor typical of LFG. The conversion from one type of odor to the other depends on the nature of the refuse and the amount of moisture available in the landfill. A wet landfill creates a LFG odor impact much sooner than a very dry landfill.

Throughout the operating day or at the end of each operating day, sufficient cover material is transported by scrapers to the working face and is placed by either a crawler tractor or scrapers to cover all exposed refuse with a minimum six-inch thick cover of soil or alternative daily cover. The purpose of daily cover soil, or an equivalent alternative daily cover material approved by the LEA, is to provide a suitable barrier to the emergence of flies, prevent windblown refuse and debris, minimize the escape of odor, prevent excess infiltration of surface water run-off, and hinder the progress of fires within the landfill.

Odors from refuse are controlled by the operation of a comprehensive LFG collection and control system. Odors are further controlled by the application of daily soil or alternative cover placed over the refuse. Intermediate cover is applied as soon as possible on areas required by Title 27. In addition, the area of refuse placement is contained to as small an area as practicable to help control odors.

Odors Associated with Fresh Refuse

Fresh refuse has the odor most associated with household waste from a trash can when placed at the curb for collection. Unless the refuse contains materials that are very rapidly putrescible (i.e., prone to rotting) such as uncooked meat products or yard waste that has begun composting in the collection container, there is normally sufficient oxygen present to keep odor production at a slow rate during storage prior to pickup for disposal. In addition to the nature of the refuse, moisture and heat will also accelerate oxygen-sufficient (aerobic) decay and turn the process oxygen-deficient (anaerobic).

As the refuse packer truck blends an occasional barrel of foul smelling trash with less offensive trash, most truck loads of refuse take on a fairly similar odor character. The odor is generally unpleasant near the source, but daytime mixing dilutes the odor with clean air to a level where off-site complaints are infrequent, and ultimately to where people with even a high sensitivity to such odor can no longer detect the odor.

Odor Associated with LFG

Odor impacts at southern California landfills became most noticeable in the 1970s and early 1980s. Previous to that time, burning was used to destroy a substantial part of biodegradable

waste in the refuse stream. Conversion to sanitary landfills in response to prohibitions on burning both in backyard incinerators and at landfills led to accumulations of organic material in the waste disposed of in landfills. In the dry tombs of southern California landfills, the decay lifetime of such material is 30 to 40 years. Material placed in the 1960s is only now reaching the end of this decay cycle.

Passive systems of LFG dispersal (cover soil and vent pipes) were ineffective in preventing off-site odor detectability, especially as refuse was consolidated into fewer, larger landfills instead of many smaller ones. Active LFG collection and disposal systems became mandatory for larger landfills in southern California. Retrofit systems were installed in older sections of landfills. For current landfill operations, the collection system is installed concurrently with refuse filling operations at specified intervals. The collection efficiency of such newer systems tends to be higher than for retrofit systems because there are fewer "dead spots."

Landfill odor has historically been detectable as far as three to five miles from a site when winds are light and a low level inversion traps odors in a very shallow layer of air next to the surface of the landfill. These conditions typically occur at night and are called "night time drainage." With the installation of a comprehensive LFG collection and disposal system, odor complaints are minimized. Modern odor control technology thus appears capable of maintaining a very limited LFG odor footprint around a well-operated landfill.

As stated previously, the project proposes to continue landfill activities at the same rate as under existing conditions. Under the proposed project, the landfill will result in a maximum vertical increase of 115 feet and a maximum horizontal expansion of approximately 33 acres within the existing property boundary of Olinda Alpha Landfill. The proposed vertical expansion is to the north and the horizontal expansion area is to the northeast, away from nearby residences and well beyond the zone of probable odor impact. Therefore, the proposed expansion project is not anticipated to increase the potential for odor impacts.

With prevailing daytime southwest to northeast winds at Olinda Alpha Landfill, occasional fresh trash detection would be confined to on-site locations away from any off-site existing or planned residences. Consequently, daytime odors from landfilling are not expected to have any substantial impacts on any off-site sensitive receptor population. Control of the size of the working face as a means of fresh trash odor control would minimize odor detectability for any off-site sensitive receptor locations.

The combination of favorable daytime meteorology, a substantial nocturnal buffer zone for future operations in the expansion area and the effectiveness of mandatory LFG collection/disposal systems will combine to create a less than significant odor impact for future Olinda Alpha landfilling activities.

Operations at the landfill would continue to generate odor even though no waste would be left uncovered at the end of daily operations. However, because the minimum distance from the expansion area to the nearest off-site residences is more than 4,250 feet, no impacts from on-site odor due to the proposed expansion project would occur.

Screening Health Risk Analysis

The primary health risk from heavy duty trucks is diesel particulate exhaust. A screening level health risk analysis was conducted for existing and proposed residences along Valencia Avenue north of Carbon Canyon Road leading to the landfill property. The results of the screening level analysis show that existing and proposed residences along Valencia Avenue would be exposed to an unmitigated inhalation cancer risk of one to two in a million assuming a five year exposure period, which is lower than the ten in a million threshold. As further detailed in the Air Quality Technical Report, the risk of exposures was assessed in five year increments from five to 20 year exposures. With up to 20 years of exposure, the risk would go up to eight in a million, still below the ten in a million threshold. Exposures of less than 20 years would result in a risk of less than 8 in a million. Because the proposed project would extend the landfill operation by eight years (2013 to approximately 2021), no significant health risk would occur for existing and proposed residences along Valencia Avenue leading to the Olinda Alpha Landfill from landfill-related truck traffic.

In addition, a screening level health risk assessment was conducted for the on-site LFG flare system and equipment exhaust. Based on the current landfill operations, the inhalation carcinogenic health risk was found to be less than one in a million at a distance of 500 feet. The closest existing or planned residences are more than 1,500 feet from the LFG flare system, and more than 4,200 feet from the future expansion area. This range of health risk is lower than the ten-in-a-million threshold recommended for residential uses. However, as previously discussed, the operation of the LFG collection system and flare station will continue regardless of the proposed project as long as LFG is generated by the emplaced MSW in the landfill.

Similarly, the screening level health risk assessment conducted for the on-site flare system and heavy-duty, diesel-driven equipment exhaust showed that the level of health risk is less than one in a million for all receptors with a distance of 500 feet or more from these activities. Because the closest existing and proposed residences are more than 1,590 feet from the flare system and more than 4,200 feet from the future expansion area, potential health risks for these residents would be small and less than significant. No mitigation is necessary.

CO Hot Spots

The proposed project would result in the continuation of existing landfill related traffic to and from Olinda Alpha Landfill to approximately 2021. Vehicle turn volumes at intersections used for landfill related traffic would be lower without the proposed project. The following CO hot spot analysis applies to the proposed project. The increase in CO emissions or concentrations is 0.1 ppm or less as a result of the project. CO hot spot analyses were conducted for 2013 conditions. 2013 is the year with the project (landfill expansion) beginning, which would have the highest emission factors between 2013 and 2021. The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst case analysis. Modeling of the CO hot spot analysis was based on traffic volumes generated for the project traffic study (Bryan A. Stirrat & Associates, February 2004), which identified the peak traffic levels generated in the project area for 2013.

Table 5.6-9 shows the projected CO levels in 2013. For the future conditions, there is no exceedance of either the state or federal CO AAQS for the one-hour or eight-hour durations. The one-hour CO concentration ranges from 10.8 to 11.4 ppm in 2013. The eight-hour CO concentration ranges from 5.0 to 5.4 ppm in 2013. These are below the federal and state AAQS. Because no future CO levels would exceed the federal and state one-hour and eight-hour AAQS, no CO hot spots would occur. These future opening year conditions show that the project area would not have CO hot spots, with or without the project. Therefore, the proposed project would not have a significant adverse impact on local air quality for CO, and no mitigation is required.

TABLE 5.6-9
FUTURE WITHOUT AND WITH PROJECT VEHICULAR TRAFFIC INTERSECTION CO CONCENTRATIONS

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	2004 1 Hr CO Concentration [1] (ppm)	2004 8 Hr CO Concentration [2] (ppm)	Exceeds State Standards 1 hr	8 hr
Associated Road & Imperial Highway	19	11.2/11.2	5.2/5.2	No	No
	19	11.1/11.2	5.2/5.2	No	No
	20	11.1/11.1	5.2/5.2	No	No
	20	11.1/11.1	5.2/5.2	No	No
Placentia Avenue & Imperial Highway	12	11.4/11.4	5.4/5.4	No	No
	12	11.4/11.4	5.4/5.4	No	No
	14	11.4/11.4	5.4/5.4	No	No
	14	11.3/11.3	5.3/5.3	No	No
Kraemer Boulevard & Imperial Highway	20	11.4/11.4	5.4/5.4	No	No
	20	11.3/11.3	5.3/5.3	No	No
	20	11.2/11.3	5.2/5.3	No	No
	21	11.2/11.2	5.2/5.2	No	No
Valencia Avenue & Imperial Highway	15	11.1/11.2	5.2/5.2	No	No
	15	11.0/11.0	5.1/5.1	No	No
	16	11.0/11.0	5.1/5.1	No	No
	17	11.0/11.0	5.1/5.1	No	No
Valencia Avenue & Birch Street	12	11.0/11.0	5.1/5.1	No	No
	12	10.9/10.9	5.0/5.0	No	No
	14	10.9/10.9	5.0/5.0	No	No
	15	10.8/10.9	5.0/5.0	No	No
Valencia Avenue & Carbon Canyon Road	14	11.2/11.2	5.2/5.2	No	No
	14	11.1/11.2	5.2/5.2	No	No
	15	11.1/11.1	5.2/5.2	No	No
	16	11.1/11.1	5.2/5.2	No	No

Source: LSA Associates, Inc., February 2004.

1 Includes ambient one-hour CO concentration of 7.4 ppm. The state one-hour CO AAQS is 20 ppm. CO concentrations at all receptor locations would be the same with or without project.

2 Includes ambient eight-hour CO concentration of 4.8 ppm. The state eight-hour CO AAQS is 9.0 ppm. CO concentrations at all receptor locations would be the same with or without project.

CO poses a threat to human health in high concentrations. CO tends to be concentrated at the point of emission and disperses with distance from the source. CO generated from flares and IC engines are located more than 1,590 feet from the closest existing and proposed residences. Caltrans CO assessment protocol for traffic sources require modeling of traffic 10 feet from the edge of congested intersections. Due to the large distance of more than 1,590 feet from the closest existing and proposed residences to flares and IC engines, CO from these sources are not

anticipated to result in significant concentrations of CO that would exceed ambient air quality standards.

5.6.5 MITIGATION MEASURES

5.6.5.1 Short Term Impacts

The project would result in significant short term adverse construction-related impacts. The project would be required to comply with existing regional rules that assist in reducing short term air pollutant emissions with standard conditions and mitigation measures. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site.

AQ-1 Applicable dust suppression techniques from Rule 403 are summarized below. Additional dust suppression measures in the SCAQMD CEQA Air Quality Handbook are also included as part of the project's mitigation. Implementation of these dust suppression techniques will reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules will reduce impacts on nearby sensitive receptors.

Applicable Rule 403 measures:

a. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
b. Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earth moving).
c. All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
d. Pave construction access roads at least 100 feet onto the site from main road.
e. Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

Additional SCAQMD *CEQA Air Quality Handbook* dust measures:

a. Revegetate disturbed areas as quickly as possible.
b. All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 miles per hour (mph) and dust plumes are visible.
c. All on-site streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).
d. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

AQ-2 Dust generated by the construction activities shall be retained on-site and kept to a minimum by following the dust control measures listed below.

a. During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 miles per hour.

c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

e. Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped or maintain 6 inches of freeboard from the point of origin.

5.6.5.2 Long Term Impacts

The proposed project would, however, result in significant adverse air quality impacts even after implementation of mitigation measures AQ-1 and AQ-2.

5.6.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Construction operations would generate emissions exceeding the SCAQMD daily construction emissions thresholds. Implementation of measures AQ-1 and AQ-2 would reduce construction related emissions, as required by SQAQMD. However, subsequent to the application of mitigation measures, construction of the project would entail PM10 generation that would continue to exceed SCAQMD construction emission thresholds and would constitute a significant short term adverse impact on regional air quality.

In the operational phase, the project would result in a continuation of emissions over a longer period of time which would exceed emissions thresholds for the operation of the proposed project. Mitigation measures would not result in reductions in emissions which would be below the SCAQMD operation phase thresholds. Consequently, the operational phase of the project would result in significant adverse air quality impacts.

5.7 NOISE

This Section of the EIR is based on the Noise Impact Analysis for the Regional Landfill Options for Orange County, California (LSA Associates, 2004). The Noise Impact Analysis, which is provided in Appendix H of this EIR, was prepared to evaluate the potential noise impacts and mitigation measures associated with the Olinda Alpha Landfill expansion project.

5.7.1 EXISTING CONDITIONS

5.7.1.1 Noise Descriptors

Characteristics of Sound

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation and sleep. To the human ear, sound has two important characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent noise sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels (dB) are measured on a logarithmic scale representing points on a sharply rising curve. For example, 10 dB are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. Thirty dB represent 1,000 times as much acoustic energy as one dB. The dB scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives an approximate connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound

decreases 3 dB for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. The predominant rating scales for human communities in California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 PM to 10:00 PM (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 PM to 7:00 AM (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short term noise impacts are specified in terms of maximum levels denoted by L_{max}. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tension, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When noise levels reach 120 dBA, a tickling sensation occurs in the human ear even with short term exposure. This level of noise is called the threshold

of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 190 dBA will rupture the eardrum and permanently damage the inner ear. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in less developed areas.

Table 5.7-1 provides definitions of acoustical terms. Table 5.7-2 shows common sound levels and their sources. Table 5.7-3 shows land use compatibility for exterior community noise recommended by the California Department of Health, Office of Noise Control.

Ground-Borne Vibration

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Motion may be discernable outdoors but, without the effects associated with the shaking of a building, there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors and ceilings radiating sound waves. Vibration induced structural damage is not a factor for normal transportation projects, including highways, but may be an issue if blasting and pile driving occur during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 decibels or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving and operating heavy duty earth-moving equipment), steel-wheeled trains and occasionally traffic on rough roads. When roads are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the road surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, heavy truck traffic associated with a project could result in ground-borne vibration that could be perceptible and annoying. Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than ground-borne noise.

Groundborne vibration has the potential to disturb people as well as to damage buildings. Although it is very rare for train or road traffic-induced groundborne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (Federal Transit Administration (FTA), 1995). Groundborne vibration is usually measured in terms of vibration velocity, either the root-mean-square (rms) velocity or peak particle velocity (PPV). Rms is best for characterizing human response to building vibration and PPV is used to characterize the potential for damage to buildings. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

TABLE 5.7-1
DEFINITIONS OF ACOUSTICAL TERMS

Term	Definitions
Decibel (dB)	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency (Hz)	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level (dBA)	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent and 90 percent of a stated time period.
Equivalent Continuous Noise Level (L_{eq})	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level (CNEL)	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 PM to 10:00 PM and after the addition of 10 dBA to sound levels occurring in the night between 10:00 PM and 7:00 AM.
Day/Night Noise Level (L_{dn})	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 PM and 7:00 AM.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control 1991.

TABLE 5.7-2
COMMON SOUND LEVELS AND THEIR NOISE SOURCES

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations [1]
Near jet engine	140	Deafening	128 times as loud
Civil defense siren	130	Threshold of Pain	64 times as loud
Hard rock band	120	Threshold of Feeling	32 times as loud
Accelerating motorcycle at a few feet away	110	Very Loud	16 times as loud
Pile driver; noisy urban street/heavy city traffic	100	Very Loud	8 times as loud
Ambulance siren; food blender	95	Very Loud	
Garbage disposal	90	Very Loud	4 times as loud
Freight cars; living room music	85	Loud	
Pneumatic drill; vacuum cleaner	80	Loud	2 times as loud
Busy restaurant	75	Moderately Loud	
Near freeway auto traffic	70	Moderately Loud	Reference Noise Level
Average office	60	Quiet	One-half as loud
Suburban street	55	Quiet	
Light traffic; soft radio music in apartment	50	Quiet	One-quarter as loud
Large transformer	45	Quiet	
Average residence without stereo playing	40	Faint	One-eighth as loud
Soft whisper	30	Faint	
Rustling leaves	20	Very Faint	
Human breathing	10	Very Faint	Threshold of hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc. 2002.
1. Subjective evaluations are based on reference noise level of 70 dB.

TABLE 5.7-3
LAND USE COMPATIBILITY FOR EXTERIOR COMMUNITY NOISE

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50-55	55-70	70+
Auditoriums, concert halls, amphitheaters	45-50	50-65	65-70	70+
Residential: low-density single-family, duplex, mobile homes	50-55	55-70	70-75	75+
Residential: multifamily	50-60	60-70	70-75	75+
Transient lodging: motels, hotels	50-60	60-70	70-80	80+
Schools, libraries, churches, hospitals, nursing homes	50-60	60-70	70-80	80+
Actively used open spaces: playgrounds, neighborhood parks	50-67	C	67-73	73+
Golf courses, riding stables, water recreation, cemeteries	50-70	C	70-80	80+
Office buildings, business commercial and professional	50-67	67-75	75+	C
Industrial, manufacturing, utilities, agriculture	50-70	70-75	75+	C

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Office of Noise Control, California Department of Health 1976.

$$L_V = 20 \log_{10} [V/V_{ref}]$$

Where L_V is the velocity in decibels (VdB), V is the rms velocity amplitude, and V_{ref} is the reference velocity amplitude, or $1x10^{-6}$ inches/second used in the United States. Table 5.7-4 illustrates human response to various vibration levels as described in the FTA Transit Noise and Vibration Impact Assessment (FTA, April 1995).

Factors that influence groundborne vibration and noise include:

- Vibration source: vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure and depth of vibration source.
- Vibration path: soil type, rock layers, soil layering, depth to water table and frost depth.
- Vibration receiver: foundation type, building construction and acoustical absorption.

TABLE 5.7-4
HUMAN RESPONSE TO DIFFERENT LEVELS OF GROUNDBORNE NOISE AND VIBRATION

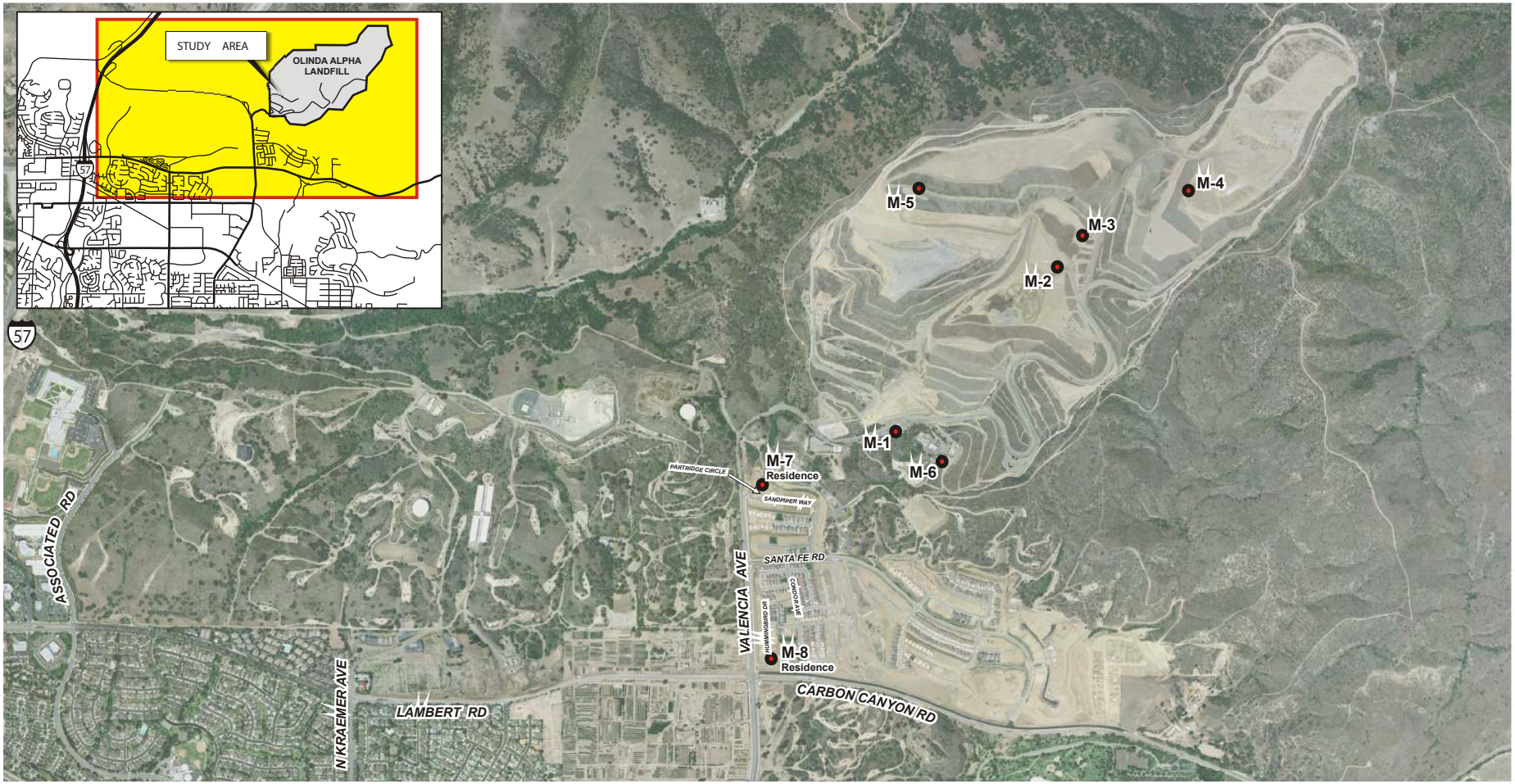
Vibration Velocity Level	Noise Level		Human Response
	Low Freq [1]	Mid Freq [2]	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level unacceptable. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there is an infrequent number of events per day. Low-frequency noise unacceptable for sleeping areas, mid-frequency noise unacceptable even for infrequent events with institutional land uses such as schools and churches.

Source: Federal Transit Administration, 1995, and Federal Railroad Administration, 1998.
1. Approximate noise level when vibration spectrum peak is near 30 hertz (Hz).
2. Approximate noise level when vibration spectrum peak is near 60 Hz.

Among the factors listed above, there are substantial differences in the vibration characteristics when the source is underground compared to when it is at ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience with groundborne vibration is that vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at far distances from a rail track. Factors such as layering of the soil and depth to water table can have substantial effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

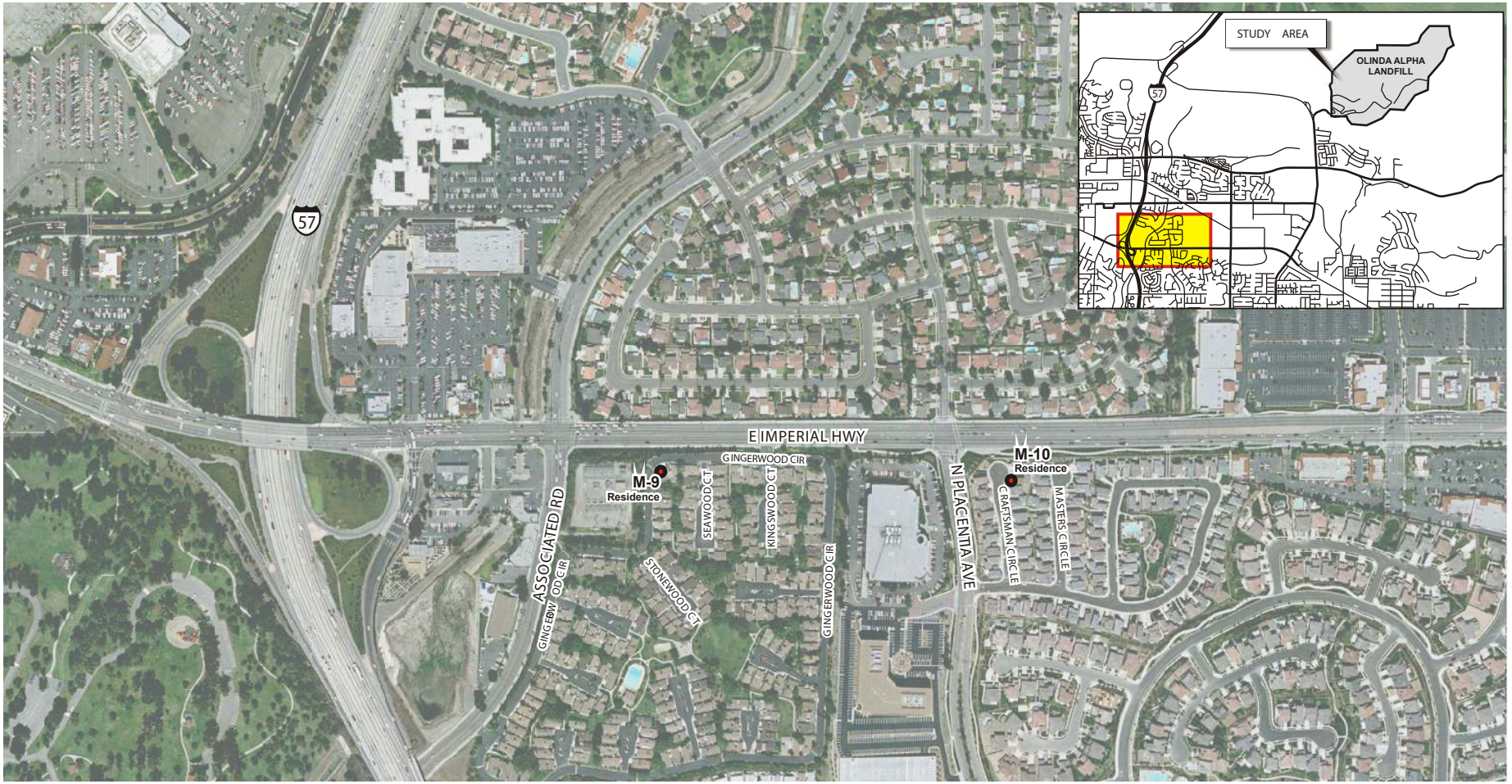
5.7.1.2 Existing Noise Levels

Eleven locations were surveyed on and adjacent to the existing Olinda Alpha Landfill and included noise measurements at the project site and adjacent to nearby existing and planned future noise sensitive receptors as seen in Figures 5.7-1A, 5.7-1B and 5.7-1C. On-site noise measurements were conducted to quantify noise levels from existing landfill operations, while the off-site measurements focused on ambient noise conditions at nearby existing and planned residential uses. Table 5.7-5 lists the measured ambient noise levels on the landfill property which were dominated by the landfill-related operations, and off-site areas which were dominated by existing vehicular traffic. Light aircraft noise was found to be an occasional contributor to the noise environment, both on and off-site. Noise from on-site landfill activities was not audible at nearby existing and planned future residences during the noise survey.



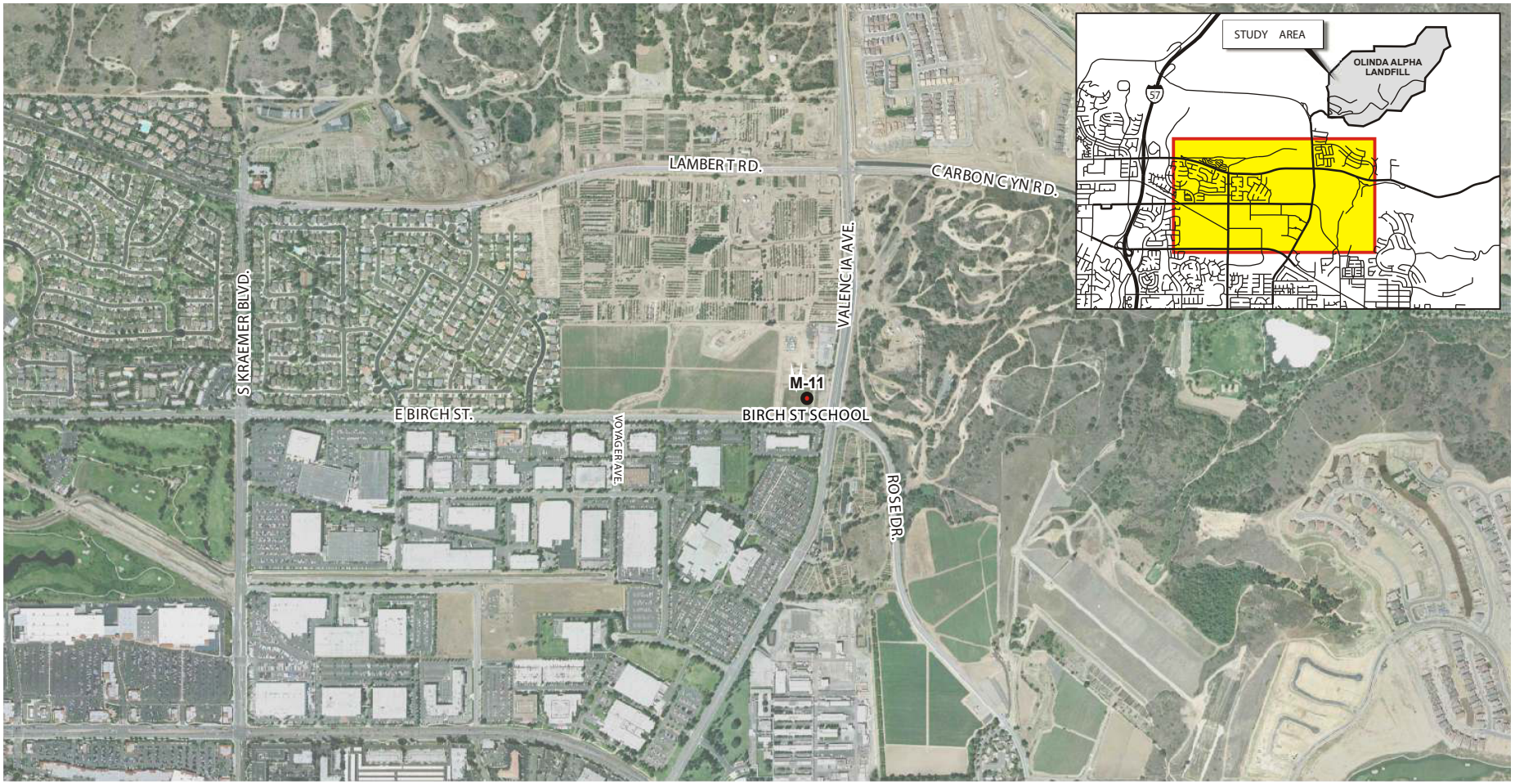
Source: LSA and Eagle Aerial (2004).

Figure 5.7-1A
Noise Monitoring Locations



Source: LSA and Eagle Aerial (2004).

Figure 5.7-1B
Noise Monitoring Locations



Source: LSA and Eagle Aerial (2004).

Figure 5.7-1C
Noise Monitoring Locations

TABLE 5.7-5
AMBIENT NOISE LEVELS ON AND ADJACENT TO OLINDA ALPHA LANDFILL IN DBA

Receptor Location/Date	L_{eq}	L_{max}	L_2	L_8	L_{25}	L_{50}
M-1/2-5-04	69.8	87.3	77.3	73.5	70.2	66.0
M-2/2-5-04	71.9	84.0	78.4	76.5	72.5	69.6
M-3/2-5-04	76.6	88.6	82.6	79.6	76.9	75.3
M-4/2-5-04	59.8	71.4	65.8	64.0	61.8	57.1
M-5/2-5-04	52.3	66.2	61.0	57.8	50.6	47.3
M-6/2-5-04	67.8	69.7	69.1	68.7	68.2	67.7
M-7/2-10-04	50.6	62.2	58.9	54.5	50.5	47.0
M-8/2-10-04	55.0	68.2	59.8	57.5	55.5	53.7
M-9/2-10-04	59.1	69.0	64.8	62.8	59.8	57.5
M-10/2-10-04	58.4	71.0	63.8	62.2	59.9	55.9
M-11/2-27-04	65.0	76.3	724	69.9	64.9	62.3

Source: LSA Associates, Inc., February 5 and 10, 2004.

The existing on-site noise levels are relatively high in areas close to where active landfill activities occur (M-1, M-2, M-3 and M-6) and moderate in areas at a greater distance from these activities (M-4 and M-5). Off-site noise levels are low in areas away from major arterials (M-7) and moderate in areas adjacent to major roads (M-8, M-9, M-10 and M-11). The residences are shielded acoustically from the landfill by several ridgelines. Noise that may be discernable from the landfill by residents may include distant "cracker shell" (i.e., gun shot) noise which is used by the landfill operators as a bird deterrent in the tipping and filling area as well as from flares and the gas-to-energy plant.

Existing Noise Control

Site operations are conducted in compliance with Cal-OSHA regulations. Noise levels of on-site equipment are controlled by installation and proper maintenance of mufflers on all motorized vehicles. Noise from on-site operations is not likely to create a health hazard for persons using the site due to their limited exposure. Site personnel are provided with earplugs to reduce potential impacts from continued exposure to on-site noise levels.

The site's physical setting minimizes the majority of the noise resulting from landfill operations. Natural canyon topography acts to shield noise generated by routine operations at the landfill.

5.7.1.3 Existing Vehicular Traffic Noise

Table 5.7-6 lists the calculated traffic noise levels along road segments in the vicinity of existing Olinda Alpha Landfill. Highway traffic related noise conditions along Valencia Avenue, Carbon Canyon Road, Imperial Highway, Lambert Road, Birch Street and Rose Drive were evaluated. Table 5.7-6 shows that noise levels along most road segments in the project vicinity are high. The noise contour for the specified CNEL is expressed as distance from the centerline in each direction of the road segment.

TABLE 5.7-6
EXISTING TRAFFIC NOISE LEVELS

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane
Valencia Avenue					
North of Santa Fe Avenue	3,940	51	110	236	69.4
Carbon Canyon Road to Santa Fe Avenue	5,340	53	113	244	69.6
Between Birch Street and Carbon Canyon Road	18,370	75	158	338	70.7
Between Imperial Highway and Birch Street	11,800	57	118	252	68.8
Imperial Highway					
Between SR 57 and Associated Road	58,800	186	397	854	75.9
Between Associated Road and Kraemer Boulevard	45,030	157	333	715	74.8
Between Kraemer Boulevard and Valencia Avenue	44,550	154	330	710	75.5
East of Valencia Avenue	38,580	140	300	645	74.9
Carbon Canyon Road					
East of Valencia Avenue	18,180	54	112	239	68.4
Lambert Road					
West of Valencia Avenue	17,900	74	155	332	70.6
Between SR 57 and Associated Road	45,100	133	285	614	74.6
Birch Street					
West of Valencia Avenue	12,450	41	88	186	66.8
Rose Drive					
East of Valencia Avenue	17,010	50	107	229	68.1

Source: LSA Associates, Inc., February 2004.

Traffic Noise Monitoring Conducted for the Proposed Birch Intermediate School

This proposed intermediate school is located directly adjacent to Birch Street, but is approximately 1,645 feet from the edge of Valencia Avenue, separated by a sports park. The proposed intermediate school will have classroom buildings and an outdoor sports activity area adjacent to Birch Street.

Ambient noise monitoring was conducted near the proposed Birch Intermediate School (LSA, February 27, 2004). The noise monitoring was conducted from 8:26 AM to 8:41 AM at a location on the northwest corner of the intersection of Birch Street and Valencia Avenue, approximately 45 feet from the centerline of both streets. The monitored results are as follows: 65 dBA L_{eq}, 76.3 dBA L_{max}, 49.3 dBA L_{min}, 72.4 dBA L_2, 69.9 dBA L_8, 64.9 dBA L_{25} and 62.3 dBA L_{50}. Vehicular traffic, including heavy trucks, on Valencia Avenue contributed to most of the ambient noise, with a minor contribution from traffic on Birch Street.

5.7.2 THRESHOLDS OF SIGNIFICANCE

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted

environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the County's GP Noise Element and its Noise Ordinance. Because the project site is adjacent to residences in the City of Brea, the City's noise standards are also discussed in this analysis.

5.7.2.1 County of Orange

General Plan Noise Element

The Noise Element of the County of Orange GP includes noise standards for mobile noise sources. These standards address the impacts of noise from adjacent roads and airports. The County specifies outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, commercial and other land uses. The noise standard for exterior living areas is 65 dBA CNEL. The County prohibits new residential uses within the 65 dBA CNEL contour from any airport or air station. Non-residential noise sensitive uses, such as hospitals, rest homes, convalescent hospitals, places of worship and schools, will not be permitted within the 65 dBA CNEL area from any source unless appropriate mitigation measures are included such that the standards in the Noise Element and in appropriate state and federal codes are met. The indoor noise standard is 45 dBA CNEL, which is consistent with the California Noise Insulation Standard. The County also enforces building sound transmission and indoor air ventilation requirements specified in Chapter 35 of the Uniform Building Code. However, for commercial uses, the County only specifies interior noise standards in terms of the hourly L_{eq}.

Noise Ordinance

The County's Noise Control Ordinance states that exterior noise levels for residential properties shall not exceed the basic noise standard of 55 dBA between the hours of 7:00 AM and 10:00 PM and shall not exceed 50 dBA between the hours of 10:00 PM and 7:00AM, plus the following limits:

- Basic noise level for a cumulative period of not more than 30 minutes in any 1 hour; or
- Basic noise level plus 5 dBA for a cumulative period of not more than 15 minutes in any 1 hour; or
- Basic noise level plus 10 dBA for a cumulative period of not more than 5 minutes in any 1 hour; or
- Basic noise level plus 15 dBA for a cumulative period of not more than 1 minutes in any 1 hour; or
- Basic noise level plus 20 dBA for any period of time.

The basic interior noise standard for residential uses is set as 45 dBA between 10:00 PM and 7:00 AM, and 55 dBA between 7:00 AM and 10:00 PM, plus the following limits:

- Basic noise level for a cumulative period of not more than five minutes in any one hour; or
- Basic noise level plus five dBA for a cumulative period of not more than one minute in any one hour; or

- Basic noise level plus 10 dBA for any period of time.

5.7.2.2 City of Brea

Noise Element of the General Plan

The City's GP Noise Element states that "The City will use land use compatibility standards when planning and making development decisions in order to ensure that noise producers do not adversely affect sensitive receptors." The Noise Element also indicates that "Contours of 60 dBA (CNEL) or greater define noise impact areas." Based on the Noise/Land Use Compatibility chart in the Noise Element, residential uses are normally acceptable in areas up to 60 dBA CNEL, conditionally acceptable in areas between 60 and 65 dBA CNEL, normally unacceptable in areas from 65 to 75 dBA CNEL, and clearly unacceptable in areas above 75 dBA CNEL.

5.7.2.3 California Department of Transportation

The California Department of Transportation has established a significance threshold in their Noise Abatement Criteria (NAC) within their Traffic Noise Analysis Protocol. The NAC for interior school noise is 52 dBA Leq. This is an hourly noise standard for which noise abatement must be evaluated if noise levels exceed this NAC.

5.7.2.4 Vibration Impact Criteria

The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event. Because there are no adopted vibration thresholds for areas adjacent to highways, vibration criteria recommended for areas adjacent to railroad tracks by the FTA and Federal Railroad Administration (FRA) are listed below as guidelines.

Federal Transit Administration and Federal Railroad Administration

Both the FTA in its Transit Noise and Vibration Impact Assessment (FTA, April, 1995) and the FRA in its High-Speed Ground Transportation Noise and Vibration Impact Assessment (FRA, December, 1998) included ground-borne vibration and noise impact criteria guidance, as shown in Table 5.7-7. The criteria in Table 5.7-7 account for variation in project types as well as the frequency of events, which differ widely among projects, by distinguishing between projects with frequent and infrequent events, where frequent events is defined as more than 70 events per day.

5.7.3 METHODOLOGY RELATED TO NOISE AND VIBRATION

The evaluation of noise impacts associated with the proposed project included:

- Determine the short term construction and long term on-site operational noise and vibration impacts on off-site noise sensitive uses. This was based on published noise emission data of construction equipment and use of calculations to account for distance attenuation between the source of the noise and the receiver. Vibration impacts were assessed based on methodologies developed by the Federal Transit Administration.

TABLE 5.7-7
GROUND-BORNE VIBRATION AND NOISE IMPACT CRITERIA

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent[1] Events	Infrequent[2] Events	Frequent[1] Events	Infrequent[2] Events
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[3]	65 VdB[3]	B[4]	B[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Source: Federal Transit Administration (1995).

1. Frequent Events is defined as more than 70 events per day.
2. Infrequent Events is defined as fewer than 70 events per day.
3. This criterion is based on levels that are acceptable for most moderately-sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation and cooling (HVAC) systems and stiffened floors.
4. Vibration-sensitive equipment is not sensitive to ground-borne noise.

- Determine the long term noise and vibration impacts, including refuse truck traffic, on off-site uses. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions in proximity to the project site. Vibration impacts were assessed based on methodologies developed by the Federal Transit Administration. The noise modeling for the project is based on the Community Noise Equivalent Level (CNEL) noise metric which takes into account increased noise sensitivity to the different portions of the day by penalizing noise by 10 dB which occurs from 10 p.m. to 7 a.m. and by 5 dB from 7 p.m. to 10 p.m. These noise levels based on CNEL were then evaluated against the City's noise compatibility for land uses.

- Determine the required mitigation measures to reduce long term noise and vibration impacts from all sources if necessary.

5.7.4 POTENTIAL IMPACTS

5.7.4.1 Short Term Construction Related Impacts

The proposed project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional LFG control facilities. The existing surface water drainage systems, LFG collection and control systems, and LCRS will be expanded, as necessary, and a prescriptive or alternative liner and subdrain system for the lateral expansion will accommodate the proposed expansion of the landfill operations. Because the proposed horizontal expansion area is in the northeast part of the existing landfill property, it is farther from existing and planned residences in the project vicinity than the existing landfilling areas. Noise levels from construction activities on the project site would be below 50 dBA L_{max} at the nearest residences for very limited times. Construction-related noise impacts from the proposed

project would comply with the County's Noise Control Ordinance and would be less than significant.

Short term noise impacts would be associated with excavation, grading and backfilling to construct the prescriptive or alternative liner and subdrain systems, surface water drainage systems, LFG collection and control systems, and LCRS during construction of the proposed project. Construction related short term noise levels would be higher than existing ambient noise levels in the project area but would no longer occur once construction was completed.

Because the project does not propose an increase in daily tonnage rates, the equipment used for daily landfill operations will also be used during the expansion operations. Therefore, there will be no need to transport additional construction equipment to the landfill for daily operations. Landfill operations occur in discrete areas which move from day to day and consequently, create their own noise characteristics. These phases would change the character of the noise generated on-site and, therefore, the noise levels surrounding the site as operations progress. Despite the changing location of landfill equipment, similarities in the dominant noise sources and patterns of operation allow operation-related noise ranges to be categorized by work phase. Table 5.7-8 lists typical construction equipment noise levels recommended for noise impact assessments based on a distance of 50 feet between the equipment and a noise receptor. Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers and front loaders. Earthmoving and compacting equipment includes compactors, scrapers and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the proposed project improvements is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. Based on the information in Table 5.7-8, the maximum noise level generated by each earthmover or bulldozer is assumed to be 88 dBA L_{max} at 50 feet from the earthmover. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound source with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

TABLE 5.7-8
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow [1]	81 to 96	93
Rock Drills	83 to 99	96
Jack hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Dozers	77 to 90	85
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman 1987.
1. foot-pound per blast of air.

The nearest noise sensitive uses to the landfill property are those to the southwest approximately 4,500 feet from the proposed expansion area, which would provide a 39 dBA noise reduction by distance divergence alone. In addition, the intervening ridgeline between the expansion area and the off-site residences acts as a barrier and provides a minimum 5 dBA reduction. Therefore, these nearest off-site residences may be subject to short term intermittent maximum noise reaching 47 dBA L_{max}, generated by construction activities on the landfill property. This range of construction noise levels would be below the County's 75 dBA L_{max} for daytime hours and 70 dBA L_{max} for nighttime hours. They would also be lower than the 55 dBA L_{50} for daytime hours and 50 dBA L_{50} for nighttime hours in the nearest residential areas. In addition, on-site construction activity would comply with the County's Noise Control Ordinance requirements. Therefore, project related construction noise impacts would be less than significant.

5.7.4.2 Long Term on-site Stationary Noise Impacts

The proposed landfill expansion area is in the northeast part of the landfill property. Tipping/filling activities generate approximately 88.6 dBA L_{max} at a distance of 50 feet. Scraping and bulldozing activities generate approximately 84 dBA L_{max} at a distance of 100 feet or approximately 90 dBA L_{max} at a distance of 50 feet. Power plant-related operations generate approximately 69.7 dBA L_{max} at a distance of 50 feet. The nearest residences are more than 1,590 feet from the power plant and 4,500 feet from the tipping/filling area in the proposed expansion area. Distance divergence alone would provide these residences a minimum of 30 and 39 dBA, respectively, in noise attenuation. The intervening ridgelines would provide an

additional noise reduction of 5 dBA or more. Therefore, noise associated with power plant operations on the landfill property would be reduced to 35 dBA L_{max} or lower. Noise associated with landfill activities (including the cracker shell noise) in the proposed expansion area would be reduced to 46 dBA L_{max} or lower. This range of noise levels would be lower than the County's and the City of Brea's Noise Ordinances maximum noise levels for daytime and nighttime periods. This range of noise levels is also lower than the County's and the City of Brea's Noise Ordinances medium (L_{50}) noise levels for daytime and nighttime periods. In addition, in the neighborhood of these residences, this range of noise would be below the existing traffic and other community noises combined. No significant stationary noise impact from the proposed project would occur. No mitigation measures are required.

5.7.4.3 Long Term Traffic Noise Impacts

The proposed project would result in the continuation of landfill-related vehicular trips to and from Olinda Alpha Landfill. Along road segments with existing and/or projected heavy volumes of traffic, project-related traffic would not contribute to significant changes in the traffic noise levels. Along road segments with relatively low traffic volumes, there would be a higher percentage of traffic from project-related vehicle trips. Although traffic noise along these less traveled road segments would be much lower than those road segments which are more heavily traveled, project-related traffic noise impacts would be potentially significant due to the high percentage of truck traffic.

Based on the traffic study prepared for this project, the proposed project would generate 2,168 daily vehicle trips. These trips would be distributed to Valencia Avenue, Imperial Highway, Lambert Road and SR 57. The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic related noise conditions along Valencia Avenue, Imperial Highway, Lambert Road, Birch Street, Rose Drive and Carbon Canyon Road in the vicinity of Olinda Alpha Landfill. The standard vehicle mix for Orange County roads was used for traffic on Carbon Canyon Road, Birch Street and Rose Drive. The traffic mix along Imperial Highway in the project area included in Caltrans Annual Average Daily Truck Traffic on the California State Highway System was used for Imperial Highway and Lambert Road. Truck percentages on Valencia Avenue were increased based on the daily vehicular trips related to landfill operations. The modeled 24-hour CNEL levels are shown in Tables 5.7-9 and 5.7-10. These noise levels represent the worst case scenario, which assumes no shielding is provided between the traffic and the location where the noise contours are drawn.

Table 5.7-9 shows that traffic noise along road segments in the project vicinity under the future baseline (no project) scenario would continue to be relatively high, except along Valencia Avenue and Birch Street. Table 5.7-10 shows that project-related traffic noise level increases would be small (3 dBA or less) and would not be perceptible to the human ear along most of the road segments in the project vicinity, except along Valencia Avenue north of Carbon Canyon Road leading to the landfill. Along this segment of Valencia Avenue, landfill-related traffic accounts for approximately half of the daily traffic volume. Without the truck-dominated landfill traffic, noise along this segment of Valencia Avenue would be approximately 11 to 12 dBA lower compared to the levels with landfill traffic included.

TABLE 5.7-9
FUTURE BASELINE (NO PROJECT) TRAFFIC NOISE LEVELS

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane
Valencia Avenue					
North of Santa Fe Avenue	2,675	< 50 [1]	< 50	< 50	58.5
Carbon Canyon Road to Santa Fe Avenue	2,675	< 50	< 50	< 50	58.5
Between Birch Street and Carbon Canyon Road	20,026	58	119	255	68.8
Between Imperial Highway and Birch Street	10,078	< 50	77	162	65.8
Imperial Highway					
Between SR 57 and Associated Road	59,496	188	400	861	76.0
Between Associated Road and Kraemer Boulevard	48,496	165	350	751	75.1
Between Kraemer Boulevard and Valencia Avenue	48,389	163	349	751	75.9
East of Valencia Avenue	44,764	155	331	713	75.5
Carbon Canyon Road					
East of Valencia Avenue	38,965	87	185	396	71.7
Lambert Road					
West of Valencia Avenue	35,684	82	174	374	71.3
Between SR 57 and Associated Road	47,684	99	211	453	72.6
Birch Street					
West of Valencia Avenue	17,000	< 50	107	229	68.1
Between SR 57 and Associated Road	28,000	71	149	318	70.3
Rose Drive					
East of Valencia Avenue	21,949	61	127	271	69.2
SR 57					
North of Lambert Road	330,557	1,059	2,280	4,911	86.7
Imperial Highway to Lambert Road	317,473	1,031	2,220	4,780	86.5
South of Imperial Highway	316,827	1,030	2,217	4,774	86.5

Source: LSA Associates, Inc., February 2004.
1. Traffic noise within 50 feet of road centerline requires site-specific analysis.

TABLE 5.7-10
FUTURE WITH PROJECT TRAFFIC NOISE LEVELS

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane	Increase from Baseline Level, dBA
Valencia Avenue						
North of Santa Fe Avenue	5,000	60	129	277	70.5	12.0
Carbon Canyon Road to Santa Fe Avenue	5,000	51	108	233	69.3	10.8
Between Birch Street and Carbon Canyon Road	22,000	84	177	381	71.5	2.7
Between Imperial Highway and Birch Street	12,000	58	119	254	68.8	3.0
Imperial Highway						
Between SR 57 and Associated Road	61,000	191	407	875	76.1	0.1
Between Associated Road and Kraemer Boulevard	50,000	168	357	767	75.2	0.1
Between Kraemer Boulevard and Valencia Avenue	50,000	166	357	767	76.0	0.1
East of Valencia Avenue	45,000	155	332	715	75.6	0.1
Carbon Canyon Road						
East of Valencia Avenue	39,000	87	185	397	71.7	0.0
Lambert Road						
West of Valencia Avenue	36,000	83	175	376	71.4	0.1
Between SR 57 and Associated Road	48,000	100	212	455	72.6	0.0
Birch Street						
West of Valencia Avenue	17,000	< 50	107	229	68.1	0.0
Between SR 57 and Associated Road	28,000	71	149	318	70.3	0.0
Rose Drive						
East of Valencia Avenue	22,000	61	127	271	69.2	0.0
SR 57						
North of Lambert Road	331,000	1,060	2,282	4,915	86.7	0.0
Imperial Highway to Lambert Road	318,000	1,032	2,222	4,786	86.5	0.0
South of Imperial Highway	318,000	1,032	2,222	4,786	86.5	0.0

Source: LSA Associates, Inc., February 2004.

However, residences along this segment of Valencia are protected by an existing six-foot sound wall and, are not exposed to outdoor noise levels exceeding the 65 dBA CNEL standard. Without landfill traffic, residences along Valencia Avenue north of Carbon Canyon Road would be exposed to noise levels lower than the 53 dBA CNEL. With landfill traffic, these frontline residences would be exposed to traffic noise lower than 65 dBA CNEL (with a 6-foot sound wall). Though the project will not increase noise above existing conditions or the 65 dBA CNEL standard because it would not change the volume of traffic as it is occurring in 2004, the continuation of landfill activities due to the project at 2013 would result in a 12 dBA increase above the no project scenario. As such, the 12 dBA increase in noise is considered substantial and is a potentially significant adverse impact related to long term transportation noise. This

applies particularly for residential development along Valencia Avenue north of Carbon Canyon Road approved before the proposed expansion approval but not built until after 2013.

The proposed project will not increase the rate of daily traffic compared to existing conditions and thus will not increase noise levels on the roads leading to the project site beyond those currently experienced. The nearest existing and planned residential uses are located adjacent to Valencia Avenue and Carbon Canyon Road. Valencia Avenue is the existing access road to and from Olinda Alpha Landfill. The City of Brea, as the lead agency for this nearby residential development project, has placed noise standards on the developer of the residential project as a condition of approval. Noise abatement measures such as landscaped berms or sound walls have been or will be constructed as necessary to ensure that noise levels for all low- and medium-density residential property will not exceed 65 dBA CNEL. There is an existing six-foot tall sound wall along Valencia Avenue for existing residences in this area. In addition, future residential development anticipated to be built before 2013 near the landfill property will be mitigated for noise from traffic on local roads. For future residences along Valencia Avenue that will be built between 2013 and 2021 and have outdoor active use areas within the 65 dBA CNEL impact area as shown in Table 5.7-10, a sound wall is required along the property line.

However, trucks passing by would result in relatively high single event noise exposure levels at residences along the access roads leading to the landfill property, including Imperial Highway, Lambert Road and Valencia Avenue. Although the single event noise exposures would cause annoyance to residences along these access roads, the noise impacts would not be considered significant based on the County's and City of Brea's long term noise standards for transportation related noise.

Potential Noise from Vehicular Traffic on the Proposed Birch Intermediate School

As shown in Table 5.7-10, the 70, 65 and 60 dBA CNEL noise contours would extend to 84, 177 and 381 feet, respectively, from the centerline of Valencia Avenue. Taking into account the greater distance of the school location, the proposed school site would be exposed to traffic noise up to 50 dBA CNEL from Valencia Avenue, when no manmade or natural intervening barrier exists. This range of traffic noise levels is much lower than the 65 dBA CNEL normally acceptable exterior noise standard for school uses. Standard building attenuation in southern California would reduce the exterior noise by 12 dBA with windows open and by 24 dBA with windows closed. Therefore, with windows closed, traffic noise on Valencia Avenue would be reduced to 26 dBA CNEL. With windows open, this noise is reduced to 38 dBA CNEL. This range of noise levels is lower than the 24-hour daily 45 dBA CNEL noise level normally acceptable inside classrooms.

Heavy duty refuse/waste trucks would result in approximately 89 dBA L_{max} when passing by at a distance of 50 feet. At 1,645 feet, this maximum noise level associated with refuse/waste trucks would be reduced to 59 dBA L_{max} from distance attenuation alone (point sources receive 6 dBA noise reduction per doubling of the distance from the source). This maximum noise level is lower than traffic noise on Birch Street and would be reduced further inside the classrooms or other noise-sensitive buildings on the school site. Therefore, with windows closed, refuse/waste truck noise on Valencia Avenue would be reduced to 35 dBA L_{max}. With windows open, this

noise is reduced to 47 dBA L_{max}. This range of maximum noise levels is lower than the 70 dBA Lmax maximum noise level or the Caltrans 52 dBA Leq noise level normally acceptable inside classrooms. As such, noise from vehicle traffic along Valencia Avenue would be below both the 24-hour average daily interior noise standard of 45 dBA CNEL and Caltrans hourly average of 52 dBA and would not represent a significant noise impact to classroom interior noise levels.

As shown in Table 5.7-10, the 65 and 60 dBA CNEL noise contours would extend to 107 and 229 feet, respectively, from the centerline of Birch Street. Therefore, the proposed school site would be exposed to traffic noise up to 65 dBA CNEL from Birch Street, when no manmade or natural intervening barrier exists. The proposed intermediate school would place staff and visitor parking along the southern perimeter of the site along Birch Street. This layout would minimize traffic noise impact from Birch Street on classrooms. Noise impacts from Birch Street traffic would need to be evaluated for the proposed intermediate school outdoor activity areas when the school site plan is available. However, because no landfill related truck traffic is permitted to use Birch Street, no landfill related off-site traffic noise impacts would occur on the proposed intermediate school site.

Potential Noise from On-Site Landfill Operations on the Proposed Birch Intermediate School

The proposed intermediate school is approximately 4,300 feet from the residences near Sandpiper Way, the residences nearest the landfill site. These residences are more than 4,250 feet from the landfill expansion area in the northeastern part of the landfill. Therefore, noise associated with daily landfill operations would be attenuated by more than 40 dBA at these residences. The Birch Intermediate School is located much further away than these residences. Intervening terrain (local ridgelines) and manmade structures between the school site and the landfill expansion area would provide additional noise attenuation. Due to the large distance between the proposed school and landfill activities, no landfill noise would be perceived at the school site. No significant noise impacts would occur due to the landfill expansion project.

5.7.4.4 Vibration Impacts

On-Site Construction and Landfill Related Activities

The proposed project would result in the continued landfilling operations in the expansion area in the northeast part of the landfill property. The proposed project does not propose blasting or pile driving during construction. Groundborne vibration from on-site construction and landfill related activities would be mostly low to moderate, and would not be perceptible at any off-site sensitive receptor locations.

Construction Vibration

Bulldozers and other heavy-tracked construction/landfill equipment generates approximately 92 VdB of groundborne vibration when measured at 50 feet, based on the Transit Noise and Vibration Impact Assessment (FTA, April 1995). This level of groundborne vibration exceeds the threshold of human perception, which is around 65 VdB. Based on the Caltrans Transportation Related Earthborne Vibration, Technical Advisory (Rudy Hendricks, July 24, 1992), vibration level at 100 feet is approximately 6 VdB lower than the vibration level at 50

feet. Vibration at 200 feet from the source is more than 6 VdB lower than the vibration level at 100 feet, or more than 12 VdB lower than the vibration level at 50 feet. Therefore, the nearest residences to the landfill, which are located 1,590 feet from the construction activity, may be exposed to groundborne vibration up to 62 VdB. This level of vibration is lower than the human perception threshold of 65 VdB for buildings where low ambient vibration is essential for interior operations. No annoyance at the nearest residences or any damage to the buildings would occur from on-site construction and landfill related activities.

On Road Truck Vibration

The proposed project would result in the continuation of truck traffic to and from Olinda Alpha Landfill on access roads leading to the landfill property from 2013 to 2021. Because the rubber tires and suspension systems of refuse trucks and other on road vehicles provide vibration isolation, it is unusual for on road vehicles to cause groundborne noise or vibration problems. When on road vehicles cause effects such as rattling of windows, the source is almost always airborne noise. Most problems with on road, vehicle related vibration can be directly related to a pothole, bump, expansion joint or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. In addition, maximum highway truck traffic vibration levels would be approximately 0.06 inches per second at 25 feet, or 60 VdB (Caltrans Technical Advisory, 1992). In the project area, there are no residences within 25 feet of a roadway centerline along the travel routes for trucks to the landfill site. Therefore, levels of vibration are below the threshold of human perception and no vibration impacts would occur

5.7.5 MITIGATION MEASURES

5.7.5.1 Construction Impacts

Although construction of the proposed expansion project would not result in significant adverse short term noise impacts, the following measures will further reduce short term construction related noise levels.

N-1 During all project site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

N-2 The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active construction areas.

N-3 The construction contractor shall locate equipment staging in areas to result in the greatest distance between construction related noise sources and noise sensitive receptors nearest the active construction areas during all project construction.

N-4 The construction contractor shall restrict all construction-related activities that would result in high noise levels between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

5.7.5.2 Traffic Noise Impacts

N-5 For residential units on Valencia Avenue north of Carbon Canyon Road which are approved prior to any approval of an expansion at Olinda Alpha Landfill, which are constructed and occupied before 2013 and which would be impacted by 65 dBA CNEL or higher traffic noise, the County of Orange IWMD will contribute a fair share to a road noise reduction program for these residences, if such a program is implemented by the City of Brea. This program could potentially implement a variety of road noise reduction measures which may include reduction in road speeds on the segment of Valencia Avenue north of Carbon Canyon Road, construction of sound walls adjacent to the affected residences and/or installation of rubberized asphalt concrete on Valencia Avenue north of Carbon Canyon Road.

5.7.5.3 Vibration Impacts

No mitigation measures are required for vibration impacts.

5.7.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Identified construction related mitigation measures will further reduce noise even though impacts are not considered significant. Therefore, construction noise impacts are less than significant. With implementation of the identified mitigation measure, potential long term noise impacts associated with traffic would be reduced to below the level of significance.

5.8 AESTHETICS

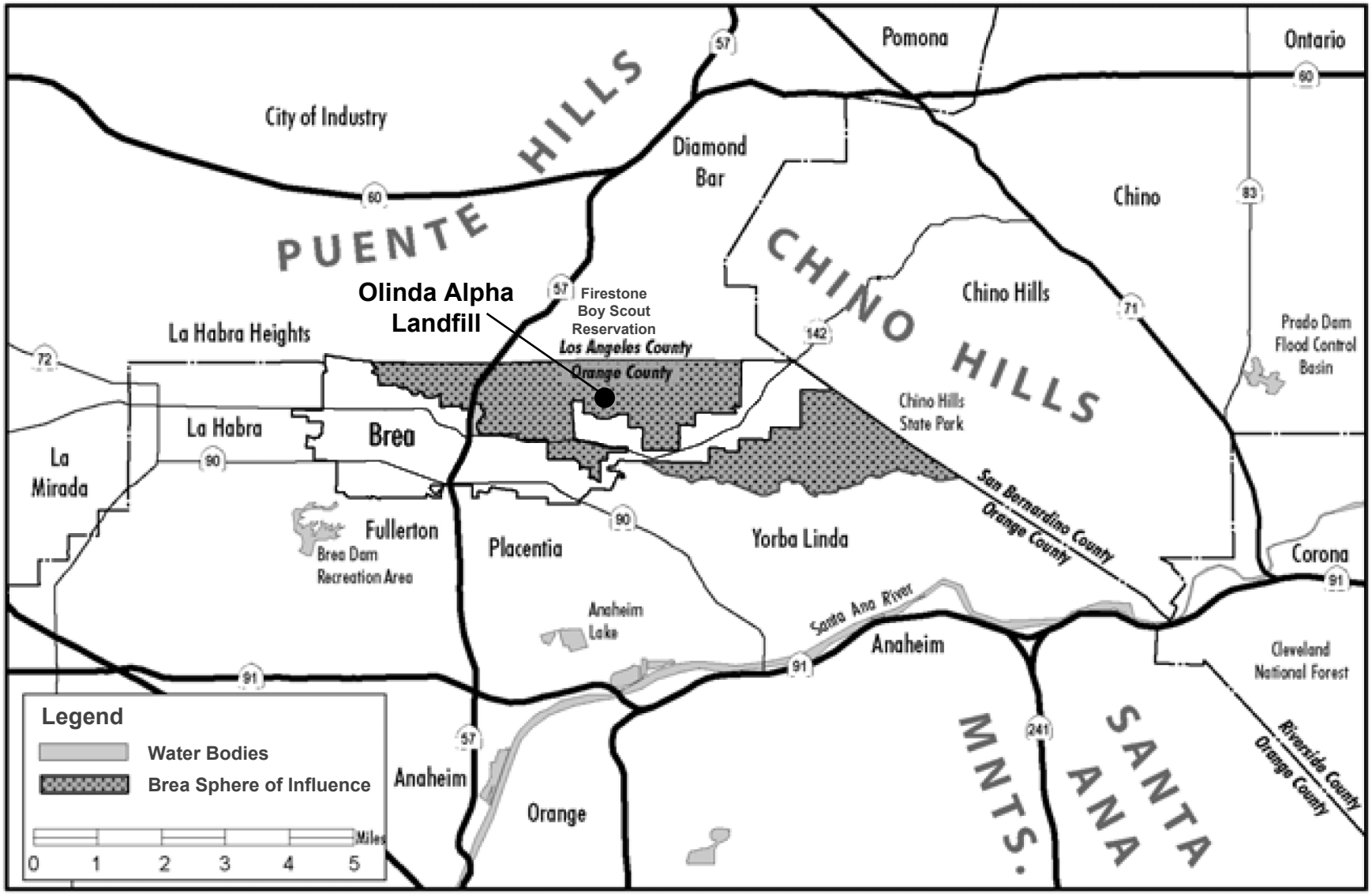
5.8.1 EXISTING CONDITIONS

5.8.1.1 Existing Views

Olinda Alpha Landfill is in unincorporated Orange County, north of the City of Brea jurisdictional boundary but within the City's SOI, as shown on Figure 5.8-1. The landfill is east of SR 57, north of State Route (SR 91), south of the Los Angeles/Orange County line and west of the San Bernardino/Orange County line. Cities and jurisdictions within three miles of the landfill include unincorporated Los Angeles County to the north and northwest; Diamond Bar to the north beyond unincorporated Los Angeles County; Chino Hills to the northeast and east in San Bernardino County; Brea to the south, southeast and southwest; Yorba Linda to the south and southeast beyond Brea; and Placentia and Fullerton to the southwest beyond Brea. The landfill property covers approximately 565 acres with approximately 420 acres currently permitted for refuse disposal under the existing permit. The 420 acres have been graded and/or excavated for landfill purposes and most of the area has been filled with MSW, covered and in some areas vegetated. The currently permitted height of the landfill is 1,300 feet. At this time, the highest elevation within the active landfill area is approximately 1,240 feet in the northeast part of the site.

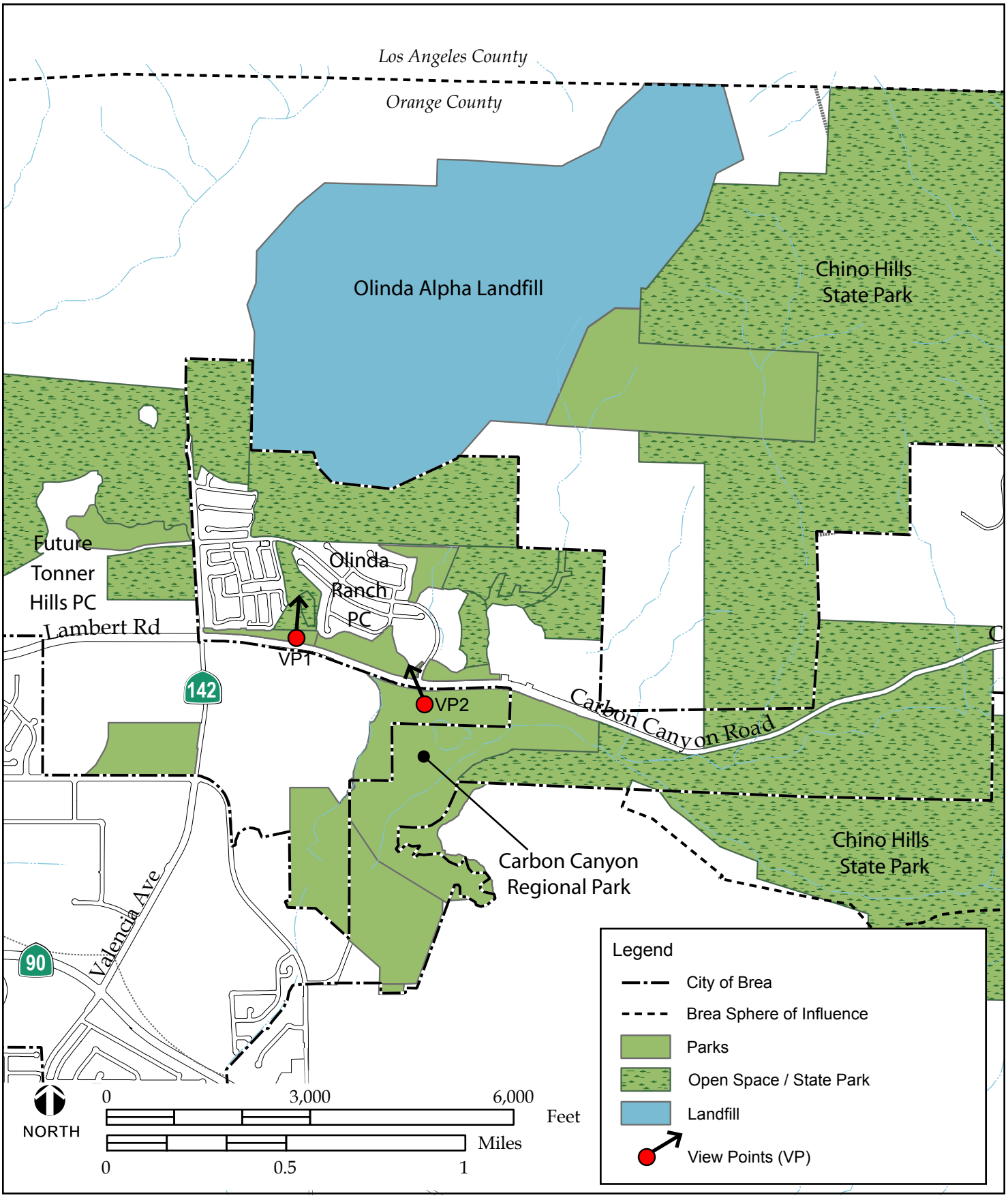
Existing land uses in the vicinity of the landfill include petroleum extraction activities (and associated infrastructure including active and abandoned well rigs, pipelines and storage facilities), industrial, park and residential uses. The Firestone Boy Scout Reservation in the County of Los Angeles is north of the landfill property, as shown on Figure 5.8-1. Chino Hills State Park is east and southeast of landfill property. Olinda Ranch PC abuts the south edge of the landfill property and Carbon Canyon Regional Park is southeast of the landfill, south of Carbon Canyon Road, as shown on Figure 5.8-2. The future Tonner Hills PC, west of the landfill, north of Lambert Road, will include 789.8 acres of residential, open space, recreational, public/institutional and mixed uses. Approximately 684.2 acres of this PC are east of SR 57 and approximately 105.6 acres are west of SR 57. A 55-lot, single family residential development is proposed west of the landfill property, north of Lambert Road between Kraemer Boulevard and Valencia Avenue and just south of the future Tonner Hills PC. Existing single family residences are located further to the south of Olinda Alpha Landfill in the Cities of Fullerton, Brea and Yorba Linda.

The landfill property, including an on-site soil stockpile and some existing graded and filled areas, is visible from the following locations where topography, vegetation or structures do not obstruct views: points along SRs 55, 57 and 91; points along Lambert Road and Carbon Canyon Road; Carbon Canyon Regional Park; areas in the west part of Chino Hills State Park north and south of Carbon Canyon Road; and areas in the Firestone Boy Scout Reservation. Residential areas in the south part of Diamond Bar have views of the soil stockpile and some operational traffic on the landfill property. The landfill is also visible from some points within residential areas south of the landfill property including areas in Fullerton, Brea, Placentia and the west part of Yorba Linda.



Source: City of Brea General Plan (2003) and P&D Consultants, Inc. (2004).

Figure 5.8-1
Landfill and Surrounding Area



Source: City of Brea General Plan (2003) and P&D Consultants, Inc. (2004).

Figure 5.8-2
View Points

In addition to views of the soil stockpile, and graded and filled areas of the landfill, a few land uses have views of the existing landfilling operations including refuse deposition, application of daily cover, trash trucks and operations equipment including compactors, bulldozers and earthmovers. Some locations in Chino Hills State Park east of the landfill property and north of Carbon Canyon Road and points in the Firestone Boy Scout Reservation at higher elevations than the ridgelines on the landfill property have existing views of the landfilling operations. These operations are not visible from developed campsites in the Firestone Boy Scout Reservation or from Chino Hills State Park south of Carbon Canyon Road. Residents in Olinda Ranch and along Imperial Highway have views of waste hauling vehicles and seagulls traveling to and from the landfill.

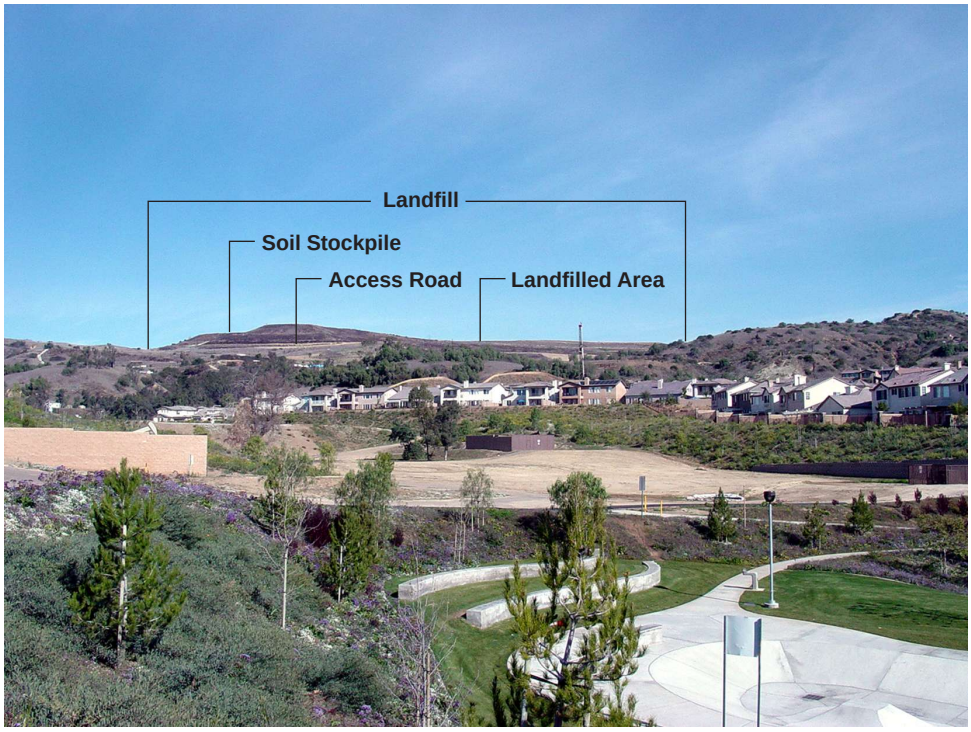
The landfill is not visible from any points in the City of Chino Hills in San Bernardino County or from Olinda Village in the City of Brea, east of the landfill, as intervening topography obstructs views of the landfill from these locations.

Two photographs of existing views of the landfill from nearby locations are provided. Figure 5.8-2, shown previously, identifies the locations from which these photographs of the landfill were taken and Figure 5.8-3 shows the existing views.

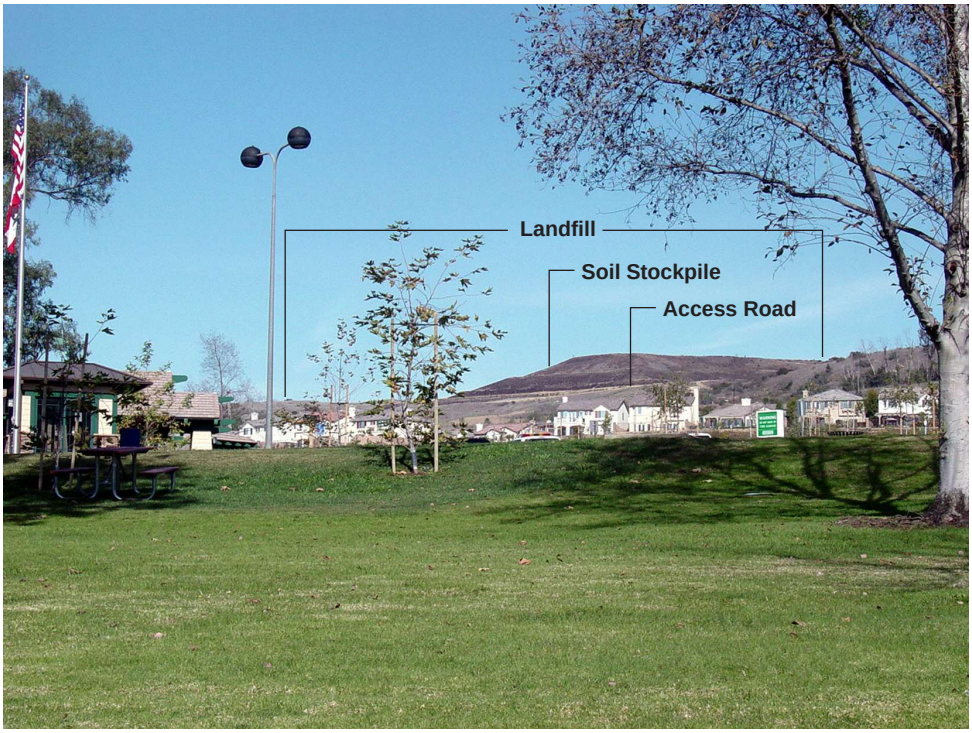
5.8.1.2 View 1

View 1 of Figure 5.8-3 is from the south edge of Olinda Ranch Neighborhood Park looking north toward the landfill. This Park is immediately adjacent to the north side of Carbon Canyon Road and is within the south part of the Olinda Ranch PC. The foreground of the view is the west end of the Park with landscaped slopes, low seating walls, turf and hardscape. Just beyond the Park is a graded area that transitions to the landscaped slopes and single family residences in the Olinda Ranch PC. Undeveloped hills are visible immediately behind these residences. These hills are dedicated open space in the City of Brea General Plan. The landfill is visible as the most distant element of the view in the center and left of center of the photograph. The vegetated soil stockpile is in the left of the photo above the access road that is visible as a light-colored line in this view.

The current landfilling operations are hidden from view behind this stockpile. An area that has previously been landfilled is to the right of the stockpile. Under the currently permitted landfill plan, landfilling operations will be visible in the area to the right of the soil stockpile as new layers or lifts are constructed. The south edge of the new lift will be constructed from east to west across the landfill in a series of cells approximately 18 to 20 feet high. Each cell is composed of trash that is compacted and covered daily with soil or other approved cover material. This operation activity will be visible from viewpoints south of the landfill for approximately two weeks until the cells comprising the south edge of the lift are complete across the landfill. Once the south edge of the lift is complete, continuing operations to the north will be hidden behind the front cells (front edge of the lift) for about 10 months until the entire lift is complete. Then work on the next lift would begin and operations would be visible for approximately two weeks until they are hidden behind the south edge of the new lift. This same process would continue until landfilling is complete.



View 1. From north of Carbon Canyon Road looking north toward the Landfill.



View 2. From Carbon Canyon Regional Park looking northwest toward the Landfill.

Source: P&D Consultants, Inc. (2004).

Figure 5.8-3
Existing Views

5.8.1.3 View 2

View 2 of Figure 5.8-3 is from a picnic area in Carbon Canyon Regional Park looking northwest toward the landfill. A picnic table and Park Office are in the left of the view. The residences beyond the Park are in Olinda Ranch PC north of Carbon Canyon Road, which is not visible from this view point. The vegetated soil stockpile of the landfill is in the background in the center part of the view. The landfill access road is visible below the soil stockpile. As described for View 1, the soil stockpile hides the current landfilling activities from this view point.

5.8.1.4 Scenic Highways, View Points and Resources

Carbon Canyon Road, south of Olinda Alpha Landfill, is a State highway that is not eligible for designation as a State Scenic Highway. However, the City of Brea General Plan identifies this road as having scenic value because it provides motorists with views of natural landscapes with vegetated valleys, riparian corridors and steep topographical features.

There are no designated scenic view points within the proposed expansion area of the landfill property or within other parts of the landfill property boundary. The closest designated scenic view point is Gilman Peak in Chino Hills State Park. This scenic view point, designated as such in the City of Brea GP, is over three miles from the landfill property.

Within the area proposed for the horizontal expansion, there is approximately 0.5 acre of land that contains mature oak trees, which are identified in the City of Brea and County of Orange GPs as a scenic resource. Two ridgelines, in the SOI of the City of Brea, form the northwest and east boundaries of the landfill property. These ridgelines are identified in the City of Brea GP as Prominent Ridgelines, which the City considers a scenic resource.

5.8.1.5 Existing Light and Glare

The landfill is open Monday through Saturday from 6:00 AM to 4:00 PM. Therefore, existing sources of night light at the landfill are minimal because the landfill is not operational after daylight hours. The scale booth and offices in the southwest part of the property have outdoor lights, and there is a LFG flare station in this area. These light sources are sited and designed so that light from the landfill site does spill over onto adjacent land uses. There are small amounts of glare associated with light reflecting off of vehicles traveling to and from the landfill and using the on-site access road to deposit refuse. IMWD planted trees along part of the on-site access road. Plans are to continue planting trees along the entire length of the access road that is visible to off-site uses to the south. As these trees mature, they will screen views of the access road, haul trucks and potential glare associated with these vehicles.

5.8.2 THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines indicates that a project will normally have a significant effect on the environment related to aesthetics, light and glare if it will:

- Have a substantial adverse effect on a scenic vista.

- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

- Substantially degrade the existing visual character or quality of the site and its surroundings.

- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.8.3 METHODOLOGY RELATED TO AESTHETICS

To determine the visual impacts related to the proposed landfill expansion, sensitive viewers who would have views of the expansion areas of the landfill property were identified. These sensitive viewers include viewers from residential and park uses. Two sensitive viewer locations close to the landfill were selected as locations for visual simulations. Visual simulations were developed from each of these locations that represent what the views of the landfill will be when the currently permitted height of 1,300 feet is reached and the views with the proposed expanded height of 1,415 feet. The change in the view between the currently permitted height and the proposed height was evaluated for each location against the thresholds of significance for aesthetics.

The visual simulations were prepared through computer modeling and digital compositing with base photographs taken from each viewpoint. The first step of the simulation process was to photograph existing conditions. Next, three-dimensional computer models of the landfill were built using CADD data provided by the project engineers. The computer models were scaled and matched to the site photographs using common reference points. After electronically compositing the computer model with the site photograph, vegetation cover was manually added using digital editing software.

To determine the impacts of the proposed landfill expansion related to light and glare, uses sensitive to light and glare in the vicinity of the proposed project were identified. These sensitive uses include residential uses and undeveloped or Park areas that provide habitat for wildlife. The sources and amounts of light and glare that would occur on the landfill site until 2013 were compared with the amount of light and glare that would occur at the landfill between 2013 and the closure of the proposed landfill in 2021.

5.8.4 POTENTIAL IMPACTS

5.8.4.1 View Impacts

Figure 5.8-4 shows visual simulations of the landfill with the currently permitted 1,300 foot elevation and the proposed 1,415 foot expansion from the two locations shown previously on Figure 5.8-2. The existing views of the landfill from these two locations were shown previously in Figure 5.8-3. The landfill in these simulations is shown as it would appear approximately four years following vegetation of the slopes with native plant species occurring on nearby hillsides.

Visual Simulation 1A - Permitted (1300 foot) Landfill from north of Carbon Canyon Road looking north.

Visual Simulation 1B - Proposed (1415 foot) Landfill from north of Carbon Canyon Road looking north.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

Figure 5.8-4
Visual Simulations

Visual Simulation 2A - Permitted (1300 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Visual Simulation 2B - Proposed (1415 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

Figure 5.8-4
Visual Simulations

The color is representative of the winter-time hues of these plants which would be greener later in the spring. Over time, larger evergreen shrubs would increase in size and number, and the color of the vegetated landfill would become darker and greener-hued.

The visual impacts of the proposed landfill would have the potential to be adverse if the surface of the landfill were vegetated with plant species that would highly contrast with the surrounding undeveloped hills. Mitigation measure AS-1 later in this Section addresses vegetation of the slopes during landfill construction and following closure to assist in blending the landfill property with the surrounding undeveloped hillsides. This Landscape Plan includes a phased interim plan that requires that the landfill slopes are seeded on an annual basis during construction of the landfill. This seeding assists in blending the slopes with adjacent open space areas while the landfill is still under construction. The final Landscape Plan ensures that the landfill blends with the surrounding open space following closure.

The existing soil stockpile, shown previously in Figure 5.8-3, would continue to hide the operations behind it until the landfill reaches the currently permitted 1,300 foot height. Under the proposed landfill expansion, the soil stockpile will be removed so that the area where it is located can be landfilled. Therefore, under the proposed landfill expansion, landfilling operations will be visible in the area of the soil stockpile until the south edge of each lift is complete and hides operations behind it to the north. Landfilling operations would be visible in this area for approximately two weeks every 10 months, as described previously for existing conditions. This adverse view impact would be considered less than significant because it is temporary, and views of operations will be hidden once the "up front" or "southerly" parts of the lifts are higher than the operations activities.

5.8.4.2 Visual Simulations 1A and 1B from the Park North of Carbon Canyon Road

Visual Simulations 1A and 1B of Figure 5.8-4 are from the south edge of a City of Brea park looking north toward the landfill. The vegetated landfill is visible as the most distant element of the view in the center of the photograph. Visual simulation 1A shows the currently permitted 1,300 foot elevation of the landfill and 1B shows the proposed 1,415 foot height. The difference in appearance between the two heights is minimal. The landfill in Simulation 1A has a flatter profile, while Simulation 1B has a more rounded appearance. The 1,415 foot proposed expansion would obscure slightly more of the sky in the view but otherwise the two views are similar. Because the views are so similar between the 1,300 and 1,415 foot elevations, the visual impact of the vegetated proposed expansion would not be considered to be adverse from this view point.

5.8.4.3 Visual Simulations 2A and 2B from Carbon Canyon Regional Park

Visual Simulations 2A and 2B of Figure 5.8-4 are from a picnic area in Carbon Canyon Regional Park looking northwest toward the landfill. The vegetated landfill is the farthest element in the simulation behind the undeveloped hillside in the extreme right side of the simulations. Simulation 2A depicts the currently permitted 1,300 foot elevation and 2B shows the proposed 1,415 foot elevation. By looking at the heights of the landfill in relation to the tree in the foreground on the extreme right of the simulation, the viewer can discern that the landfill in

Simulation 2B (1,415 foot height) is slightly taller than the landfill in Simulation 2B. Because the views are so similar between the 1,300 and 1,415 foot elevations, the visual impact of the vegetated proposed expansion would not be considered to be adverse from this viewpoint.

5.8.4.4 Views from Other Locations

The differences between the 1,300 foot and 1,415 foot elevations would be even more difficult to discern from more distant view points than those used for the visual simulations. This is because the landfill would appear as a much smaller element in views from more distant locations. Therefore, visual impacts of the expansion from other existing residential areas in Brea, Fullerton, Placentia, Yorba Linda and Diamond Bar and from Chino Hills State Park south of Carbon Canyon Road would not be considered to be adverse.

There may be views of the landfill from some locations within the areas proposed for development west of the landfill property. The potential visual impacts of the expansion related to these views would be anticipated to be similar to the impacts described previously for visual simulations 1B and 2B. Therefore, the potential impacts would not be considered to be adverse.

There may be locations south of the landfill that currently do not have views of the landfill that may see part of the landfill expansion. If so, these locations would see the expansion as a very small, narrow area on the horizon line of their existing views. As described previously for distant locations that have current views of the landfill, the view of the expansion would be a very small element of the total view scene from these locations. Therefore, visual impacts of the expansion on these distant views would not be considered to be adverse.

Views of the proposed expansion from locations in the Firestone Boy Scout Reservation and Chino Hills State Park which currently have views of the existing landfill operations would be similar to views with the permitted landfill, as these locations would have views of operations under both the permitted landfill and the proposed expansion. Views of the landfill with the proposed expansion after closure would be of a higher profile than with the currently permitted landfill. However, as described previously, the landfill expansion area will be vegetated to blend with the existing undeveloped hills. Therefore, the visual impacts from these locations would not be considered to be adverse.

Locations above the 1,300 foot elevation in Chino Hills State Park north of Carbon Canyon Road that do not currently have views of the landfill operations to the west will have views of the proposed 1,415 foot landfill expansion where intervening topography does not obscure views. From these locations, the proposed expansion will appear as a narrow band on the horizon line of the existing view. As the vegetation on the slopes becomes established, the expansion will appear as a ridge in the background of the view beyond the hills and ridges closer to the viewer. As stated previously, mitigation measure AS-1 requires that the slopes are vegetated prior to closure as part of the interim Landscape Plan. Views from these elevated locations in the Park include existing urbanized uses to the south, southwest and west. The impact of the proposed expansion on these views would not be considered to be adverse because the proposed expansion will be a small, narrow element of the view scene which includes urban elements; and will appear to be an open space ridge when the vegetation becomes established.

5.8.4.5 Interim View Impacts Prior to Landfill Closure

The technique for landfilling operations was described previously in Existing Conditions. As the south edge of each new lift is constructed, this activity and the lift will be visible from points south of the landfill. Also, these lifts will appear like soil piles until vegetation becomes established. It will be eight years between the time that the expansion begins until the proposed final height of landfilling under the proposed landfill expansion project is achieved. Therefore, the appearance of the expansion during this period will be similar to the appearance of the existing conditions. Mitigation measures provided later in this Section require interim vegetation of the slopes of the lifts.

5.8.4.6 Impacts to Scenic Highways, View Points and Resources

The City of Brea considers Carbon Canyon Road to have scenic value. Motorists on Carbon Canyon Road between Valencia Avenue and approximately the east edge of the Olinda Ranch PC have views of the existing landfill and would have views under the currently permitted and proposed expanded landfill plans. There would be no views of the landfill at the permitted or proposed heights along Carbon Canyon Road from points east of Carbon Canyon Regional Park. The view impacts of the proposed expansion from Carbon Canyon Road would be similar to the impacts for Visual Simulations 1A and 1B, because the view location of these simulations is from the edge of Carbon Canyon Road. As described for Simulations 1A and 1B, the 1,415 foot proposed expansion would obscure slightly more of the sky in the view but otherwise the two simulations are similar. Because the views are so similar between the permitted 1,300 foot and proposed 1,415 foot elevations, the visual impact of the proposed expansion on views from Carbon Canyon Road would not be considered to be adverse.

There are no designated scenic vistas or view points on or adjacent to the landfill property. The closest designated scenic view point is Gilman Peak in Chino Hills State Park, three miles from the landfill. From this distance, any view of the landfill would be a very small element in the view scene which includes many urbanized land uses to the west. The difference between the 1,300 foot and 1,415 elevations would not be discernible from this distance. Therefore, there would be no adverse impacts on designated scenic view points related to the proposed landfill expansion.

The proposed expansion will result in the removal of approximately 0.5 acre of land containing mature oak trees. According to the City of Brea and County of Orange General Plans, these mature oak trees are considered a scenic resource. However, these oak trees are not visible from any off-site location and are immediately adjacent to the filled area of the landfill and to areas that have been previously graded and vegetated. Therefore, the removal of these trees would be considered an adverse but less than significant impact on scenic resources.

The City of Brea-designated prominent ridgeline that forms the northwest boundary of the landfill will not be altered for the proposed landfill expansion. The north part of the City-designated prominent ridgeline that forms the east boundary of the landfill will be altered for the horizontal expansion. The west slope of this part of the ridge that faces the active landfill will be

excavated for the horizontal expansion. However, the crest of the ridge will not be graded or altered and the appearance of the ridge from off-site views will not change. Therefore, the visual impact of the expansion on this ridgeline would not be adverse.

5.8.4.7 Light and Glare Impacts

The same types of night lighting will be used for the proposed expansion as currently exist on the landfill site. However, the potential exists for additional lighting to be installed with the proposed expansion. Impacts associated with this additional lighting would be considered substantially adverse if the light spilled over onto adjacent sensitive residential and wildlife habitat areas. Mitigation measure AS-2 is provided to reduce this impact.

5.8.5 MITIGATION MEASURES

AS-1 The existing Olinda Alpha Landfill Landscape Master Plan (LMP) that was developed in concert with IWMD and the City of Brea Citizens Advisory Committee in 1994 to address minimization of interim and permanent visual impacts will be revised to include the proposed vertical and horizontal expansion. The current seed mixes in the LMP will be identified for use on the appropriate areas of the expansion. The revised LMP will execute the original goal of blending the landfill property with the adjacent native open space area. The revised plan will be approved by IWMD and the City of Brea and will be included in the Closure Plan for the site as part of the SWFP and WDR revision application.

The phased interim landscape plan included as part of the LMP will be revised to continue visual screening of the landfill operations and facilities for the expansion and to assist in blending the manufactured slopes with surrounding open space prior to landfill closure.

AS-2 All outdoor lighting, including any construction-related lighting, shall be designed, installed and operated in a manner that ensures that all direct rays from project lighting are contained within the landfill property, and that residences and undeveloped areas that may provide wildlife value are protected from spillover light and glare.

5.8.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Mitigation measure AS-1 requires that the landfill expansion areas be vegetated with native species occurring in adjacent areas to assist in blending the expanded landfill with surrounding undeveloped hills. With implementation of this measure, the appearance of the expanded landfill will be as shown in the visual simulations on Figure 5.8-4. As shown in these simulations, the proposed expansion would obscure slightly more of the sky in the views, but otherwise the views of the currently permitted and proposed expanded landfill would be similar. Therefore, with implementation of mitigation measure AS-1, the adverse visual impacts of the proposed expansion would be less than significant. In addition, mitigation measure AS-1 would ensure that the visual impacts prior to closure and prior to implementation of the final landscape plan would be less than significant.

Removal of mature oak trees occurring on 0.5 acre would be an adverse impact on scenic resources. However, this adverse impact would be less than significant because the trees are not visible from any off-site location and are immediately adjacent to the filled area of the landfill and to areas that have been previously graded and vegetated. No mitigation is necessary.

There will be no adverse impacts of the proposed landfill expansion related to scenic highways or scenic view points. No mitigation is necessary.

Mitigation measure AS-2 will reduce potential adverse impacts related to light to below a level of significance.

5.9 CULTURAL AND SCIENTIFIC RESOURCES

This Section describes the existing cultural and scientific resources in the project area, potential environmental impacts, recommended mitigation measures to help reduce or avoid impacts to identified cultural and scientific resources, and the level of significance after mitigation. The analysis in this Section was summarized from the Cultural Resource Assessment for the Olinda Alpha Landfill Expansion (LSA, 2004) and the Paleontological Resource Assessment for the Olinda Alpha Landfill Expansion (LSA, 2004). These studies are included as Appendices I and J, respectively, of this EIR.

5.9.1 EXISTING CONDITIONS

5.9.1.1 Cultural Resources

Prehistoric

The development of a regional chronology marking the major stages of cultural evolution in the southern California area has been an important topic of archaeological research. In general, cultural developments in southern California have occurred gradually and have shown long term stability. Therefore, developing chronologies and applying them to specific locales has often been problematic. Southern California researchers have used changing artifact assemblages and evolving ecological adaptations to divide regional prehistory into four stages. Wallace (1955, 1978) and Warren (1968) have developed the two chronologies most commonly cited. Wallace (1955) uses major cultural developments to divide area prehistory into four time periods or cultural horizons: the Early Period, the Milling Stone Period, the Intermediate Period and the Late Period. The following overview is based primarily on Wallace's chronology, which has been revised slightly by Koerper (1981) and Koerper and Drover (1983).

The Early Period (Prior to 6000 BC)

The Early Period covers the interval from the first presence of humans in southern California until post-glacial times (5500 to 6000 BC). Artifacts and cultural activities from this period represent a predominantly hunting culture. Diagnostic artifacts include extremely large, often fluted bifaces associated with use of the spear and the atlatl. In southern California, important Early Period sites have been found near prehistoric Lake Mohave and along the San Dieguito River (Wallace 1955, 1978:27; Moratto 1984:81, 93-99).

The Milling Stone Period (6000 BC to 3000 BC)

The transition from the Early Period to the Milling Stone Period is marked by an increased emphasis on the processing of seeds and edible plants and is estimated to have occurred between 6000 BC and 3000 BC. According to Wallace (1978:28), wild seeds and edible plants formed the primary food source during this period, with only limited use of shellfish and faunal resources. Plant resources were processed using deep-basined mills and handstones, hence the term Milling Stone Period. Milling Stone Period settlements were larger and were occupied for longer periods of time than those of the Early Period, and mortuary practices included both

flexed and extended burials, as well as reburials. Grave offerings were few, although rock cairns were sometimes placed over the bodies (Wallace 1955:192, Table 1; 1978:28).

Diagnostic artifacts recovered from Milling Stone Period archaeological sites include metates and manos, and large projectile points indicating the continued use of darts and atlatls. Among the more enigmatic artifacts from this period are discoidals and cogged stones. Discoidals are round to ovoid ground stones with flat or slightly convex faces and edges, while cogged stones are discoidals with serrated edges resembling the teeth on gears. Both types of artifacts appear sometime around 4000 BC, and are dated to the Milling Stone Period. Their use remains unclear, and they may have had a ceremonial function (Moratto 1984:149-150).

Wallace (1978:28) offers two possible scenarios to explain the cultural changes that occurred during the Milling Stone Period: quite possibly, both processes occurred simultaneously in different geographical areas. In some regions (such as western San Diego County), Milling Stone cultures may have evolved gradually as the earlier hunting peoples learned to exploit a wider variety of food resources. In other areas, people migrating from interior regions may have introduced to coastal areas the technology for processing seeds and plant foods. Evidence for such migrations may be found in climatic data. The onset of the Milling Stone Period corresponds to an interval of warm, dry weather known as the Altithermal. During the Altithermal, many of the inland lakes disappeared, and the region became less habitable, perhaps triggering the coastal migrations believed to have occurred at this time (Wallace 1978:28).

The Intermediate Period (3000 BC to AD 500)

By approximately 3000 BC, the inhabitants of southern California were exploiting a diverse array of food resources including seeds and edible plants, shellfish, fish and mammals. Along the coast, greater reliance was placed on marine food resources as evidenced by the recovery of near shore and deepwater fish remains from archaeological sites. In interior regions such as the Mojave Desert, the return of cooler, moister conditions led to increased populations along streams and lakes. Hunting appears to have been the primary food gathering activity in these interior areas. The best known sites in this region are located at Pinto Basin in northeastern Riverside County (Moratto 1984:153; Wallace 1978:30-31).

Intermediate Period sites are characterized by the appearance of the mortar and pestle (although the mano and metate continued in use) and small projectile points. The use of the mortar and pestle may indicate an increased reliance on acorns as a food source, while the small projectile points suggest that the bow and arrow was in limited use (Elsasser 1978:55; Wallace 1978:30-31). The circular shell fishhook also makes its appearance in coastal sites during this period. The circular fishhook is found most abundantly in areas adjacent to a rocky coastline and may have been less subject to fouling than gorges and other types of hooks (Strudwick 1986:283-284). Intermediate Period burials were generally by interment in a flexed position, face down, although a site at Big Tujunga Wash in the San Fernando Valley contained both reburials under stone cairns and cremations (Elsasser 1978:55; Wallace 1955:193-195).

Researchers have had difficulty distinguishing Intermediate Period sites, because many of the tool types appear in earlier and later periods. The few known sites have often been identified using radiocarbon or obsidian hydration methods.

The Late Period (AD 500 to 1769)

The Late Period witnessed a number of important cultural developments in southern California, including the concentration of larger populations in settlements and communities, greater utilization of the available food resources and the development of regional subcultures. Cremation was the preferred method of burial during the Late Period and elaborate mortuary customs with abundant grave goods were common. Other cultural traits diagnostic of the Late Period include increased use of the bow and arrow, steatite containers, circular shell fishhooks, asphaltum (as an adhesive), bone tools and personal ornaments of bone, shell and stone (Bean and Smith 1978; Elsasser 1978:56; Moratto 1984:159; Wallace 1955:195). Because many of these artifacts are also recovered from earlier periods, other indicators must sometimes be used to distinguish Late Period sites. Among the most useful of these indicators are lithic artifacts manufactured from obsidian and fused shale. Obsidian from Obsidian Buttes near the Salton Sea was used sporadically in the manufacture of lithic artifacts until sometime after AD 1000. In Orange County, Grimes Canyon fused shale obtained from Ventura County was also used in tool manufacture (Demcak 1981; Hall 1988).

A number of the cultural elements found in southern California during the Late Period have been linked to the migration of Uto-Aztecan speaking peoples from the Great Basin. These traits include the manufacture of ceramics, the use of small triangular arrow points and interment by cremation. The date of the Uto-Aztecan migration, which probably occurred in several successive waves over an extended period of time, remains uncertain. It has been dated as early as 2000 BC and as late as AD 700. Linguistic evidence suggests a date of AD 1 to 500 (Koerper 1979; Kroeber 1925:574-580; Moratto 1984:161). The Los Angeles-Orange County region was home to one Uto-Aztecan speaking group known as the Gabrielino, the name derived from the incorporation of these Indian peoples into Mission San Gabriel. The Olinda Alpha Landfill property is located within the traditional territory of the Gabrielino.

Ethnography: The Gabrielino

The Gabrielino practiced a hunter-gatherer lifestyle and lived in permanent communities located near the intersection of two or more environmental zones (habitats). Commonly chosen sites included rivers, streams and inland watercourses; sheltered coastal bays and estuaries; and the transition zone marking the interface between prairies and foothills. The most important factors in choosing a community site were the presence of a stable food supply and some measure of protection from flooding. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. Gabrielino communities in the interior regions maintained permanent geographical territories or usage areas that may have averaged 30 square miles. However, it is unclear whether this pattern also held for the coastal settlements, where food resources may have been more plentiful (White 1963:117; Oxendine 1983:44). In addition to these permanent settlements, the Gabrielino occupied temporary campsites that were used on a

seasonal basis for hunting, fishing and gathering wild plant foods and shellfish (McCawley 1996:25).

Three distinctive settlement-subsistence patterns have been identified for the Gabrielino communities. The first was found in the interior mountains, where primary settlements were located in the lower reaches of canyons that offered protection against cold winter weather. During spring and summer, individual families traveled to seasonal camps to gather bulbs, seeds and plant foods. In the fall they moved to oak groves to gather acorns. A second prevailed on the inland prairies where each winter, the populations of these communities divided into family units and migrated to coastal shellfish-gathering camps. The third was found among the coastal settlements in the region north of San Pedro. During the winter season when the seas were too rough for fishing, the inhabitants of these communities dispersed to inland camps to hunt and gather acorns and plant foods (Hudson 1971).

Politically, each Gabrielino community comprised one or more kinship groups (known as lineages), which were united under the leadership of a *tomyaar,* or chief. Each lineage comprised several related nuclear families. Membership in a lineage was traced through the father and allowed an individual to claim use rights over the territory owned by that group. The *tomyaar* was the focus of the religious and secular life of the community and served as chief administrator, fiscal officer, war leader, legal arbitrator and religious leader (Bean and Smith 1978; Harrington 1942:32, item 1263; 1986:R102 F642). The *tomyaar* was aided in his duties by a Council of Elders, which consisted of the leaders of the lineages residing in the community as well as other wealthy and influential individuals. Council positions were hereditary and descended from father to son. Shamans also played an important role in Gabrielino society, serving as the principal doctors, psychotherapists, philosophers and intellectuals. Often, the *tomyaar* himself was an important and influential shaman (Bean 1974:25-26).

The Gabrielino culture was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies and participation in the widespread *Chengiichngech* cult. The cult of the culture hero, *Chengiichngech*, was observed and recorded by Franciscan Friar Gerónimo Boscana during his residences at Missions San Juan Capistrano and San Luis Rey (Harrington 1933; Boscana 1933).

The Franciscans' goal was to convert the Indians to Christianity and incorporate them into Spanish society. The Gabrielino and other Indian groups learned metallurgy, plant and animal domestication, and Spanish construction methods. In turn, the Spanish learned how and where indigenous peoples lived, and gathered information about native life ways and ceremonial and ritual practices. Father Boscana prepared an account of Gabrielino and neighboring Juaneño life ways and beliefs (Harrington 1933; Hanna 1978). Boscana's account, *Chinigchinich*, written during his residency at the San Juan Capistrano (1814-1826) and San Luis Rey (1811-1814) missions, describes the native cosmology and ritual practiced at the time of Spanish contact (Bean and Smith 1978:548). By the early 1800s, Spanish army officers and veterans living in California began receiving grants of land and establishing large, private grazing areas.

Ultimately, Spanish colonization resulted in the disappearance of Gabrielino society and culture. Two important factors that contributed to this decline were the removal of the youngest,

healthiest and most productive Gabrielino from their traditional communities and their incorporation into the Mission System; and the infection of the native population with highly infectious diseases to which they were not adapted. This led to epidemics and reduced birth rates. As a result, the traditional Gabrielino communities were depopulated and the survivors integrated into local *Californio* and, later, Mexican-American communities. When anthropologist A. L. Kroeber sought Gabrielino descendants during the 1920s, he was unable to locate a group claiming Gabrielino heritage. Today, the federal government does not recognize a local tribe or band, although there are individual spokespeople who have Gabrielino ancestors (Rosenthal et al. 1991).

History

Spanish Mission Period (1769 to 1821)

The first recorded contact between the Gabrielino and Europeans occurred in 1542 when the Juan Rodriguez Cabrillo expedition arrived at Santa Catalina Island (Wagner 1941). In the Orange County area, the first recorded contact occurred when Gaspar de Portolá's expedition crossed the region in July 1769. According to Spanish records, Portolá camped near the mouth of Brea Canyon. A large village of Indians was encountered. Between 1769 and 1821, when Mexico gained independence from Spain (McGroarty 1911:117, 148; Avina 1932:29; Robinson 1979:13), is often referred to as the Spanish Mission Period (Robinson 1979:51-52). In 1771, Father Junipero Serra established a Franciscan mission at San Gabriel.

In 1819, an *asistencia* was established in San Bernardino, and those inhabitants not directly affected by Mission San Gabriel became a part of the Mission system through the San Bernardino *Asistencia*. Spanish records indicate that the primary Native American villages included in this *Asistencia* were *Guachama*, located near present Loma Linda, and *Hurungna*, known as *Jurupa* to the Spanish, located near the present City of Riverside (URS 1988:VIII:79). Farming and cattle ranching were introduced to the inhabitants of *Guachama* by the padres of the San Bernardino *Asistencia* as early as 1819 (Hoover et al. 1962:39).

Mexican Period (1821 to 1848)

In 1821, Mexico was formed after gaining its independence from Spain and in 1848 the United States formally obtained California in the Treaty of Guadalupe Hidalgo (Cleland 1962:xiii). The period from 1821 to 1848 is referred here to as the Mexican Period. In 1833, 11 years after gaining independence from Spain, the Mexican government's Secularization Act changed missions into civil parishes, and those natives who had inhabited regions adjacent to a Spanish Period mission were to obtain half of all mission possessions, including land. However, this did not occur in most instances, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals rather than to local natives.

American Period (Post-1848)

Following the end of hostilities between Don Pio Pico, the last Mexican Governor of California, and the United States in January of 1847, the United States officially obtained California from

Mexico through the Treaty of Guadalupe Hidalgo on February 2, 1848 (Cleland 1962:xiii). In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849.

The cattle industry in California reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large, pastoral estates in California and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849 to 1855. In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri valleys, and the development of stock breeding farms. When the beef market collapsed, California ranchers were unprepared. Many had borrowed heavily during the boom, mortgaging their land at interest rates as high as ten percent per month. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes (Cleland 1941:108-114).

Nature, too, conspired to force economic change during this period. During the winter of 1861-1862, a disastrous series of floods struck California. According to rainfall statistics, more than 45 inches of rain fell in parts of California between November 1861 and February 1862 (Brewer 1930:253). It has been estimated that the 1862 flood was the largest flood in the recorded history of the Santa Ana River. At Agua Mansa, the high water line marked on the front steps of the church was used to estimate a flow rate of 320,000 cubic feet per second, more than three times the estimated high water maximum recorded in 1938 (Sidler 1973:19 in URS 1988:VIII-81). Lesser flooding episodes along the Santa Ana River also occurred in 1867 and 1891. This unprecedented deluge was then followed by two years of drought (Cleland 1941:130-131). The drought of the 1860s was a turning point in the economic history of southern California. The era of the great cattle ranchos ended and many landowners who survived the collapse of the cattle industry were forced to sell their property due to the drought. This was not the fate of all rancheros. Some, such as the Cota and Yorba families, survived (Foster 1996).

Local History

Brea was established in 1894 when landowner Abel Stearns sold 1,200 acres to the Union Oil Company, west of the village of Olinda (founded circa 1896). In 1908, a new town called Randolph was constructed for the oil workers. In 1911, the name was changed to Brea (Spanish for tar). The town of Olinda has since disappeared and is now the location of a park.

5.9.1.2 Paleontological Resources

The landfill property is located at the northern end of the Peninsular Range geomorphic province, a 900-mile long, northwest-southeast trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin (Norris and Webb 1976). The total width of the province is approximately 225 miles, with a maximum land bound width of 65 miles (Sharp 1976). It contains extensive pre-Cretaceous (> 65 million years ago) igneous and metamorphic rock covered by limited exposures of post-Cretaceous sedimentary deposits. In Orange County, these post-Cretaceous sedimentary deposits are believed to be one of the most important Tertiary marine fossil producing areas in the world due

to the completeness of the geologic record and general abundance of the fossils (Raschke 1984). Belyea and Minch (1989) report that the Santa Ana Mountains contain exposures of the most complete section of Late Mesozoic and Cenozoic (approximately 150 million years ago to the present) stratigraphy in the entire Peninsular Ranges.

The landfill property is located in the Puente Hills. These Hills are in the eastern Los Angeles Basin and in parts of San Bernardino, Riverside, Los Angeles and Orange Counties. The Hills are bounded on the northwest by the San Gabriel Valley, on the northeast by the San Bernardino Valley and on the south by the Santa Ana River and the central part of the Los Angeles plain. They are structurally and stratigraphically related to the Santa Ana Mountains to the south and the San Jose Hills to the northwest (Schoellhamer et al. 1981). The southeastern part of the Puente Hills, south of Brea Canyon, is also known as the Chino Hills. The Chino Hills are a structural unit that had been uplifted and folded by movement along the Whittier and Chino Faults. The landfill property is located on the southern flank of the Chino Hills (Durham and Yerkes 1964; Rogers 1966) directly north of the Whittier Fault.

In the project area, Morton and Miller (1981) and Morton et al. (1999) recorded one geologic unit, the late Miocene Soquel Member of the Puente Formation. The late Miocene marine Puente Formation is divided into four members: the La Vida Member (Tplv), which consists of predominantly siltstones; the Soquel Member (Tps), which consists of predominantly sandstones; the Yorba Member (Tpy), which consists of predominantly siltstones; and the Sycamore Canyon Member (Tpsc), which consists of predominantly sandstones.

The Puente Formation is exposed in the Santa Ana Mountains and the Puente Hills and was deposited in a deep-water basin (Lyons et al. 1990). It ranges in thickness from 629 yards in the central Santa Ana Mountains near El Toro to over 4,484 yards in the Puente Hills (Yerkes et al. 1965, Schoellhamer et al. 1981). The Puente Formation was named by Eldridge and Arnold (1907) from exposures in the Puente Hills. Davies and Woodford (1949) divided the Puente Formation into three members, only one of which was named. Schoellhamer and others assigned the current four members and their names in 1954. The siltstone units of the Puente Formation generally produce more fossils than the sandstone units, with the Yorba Member producing the most fossils of the four. However, the only member exposed in the project vicinity is the Soquel Member.

The Soquel Member of the Puente Formation consists of Late Miocene marine sediments. They are composed of pale yellow to yellow brown silty sandstone and pebbly sandstone with interbeds of light to dark gray and pale yellow brown siltstone and occasional conglomerate and breccia. Sand grains are subangular to subrounded quartzo-feldspathic and biotite rich. The conglomerate clasts are angular to subangular and are mainly derived from a plutonic source. Sandstones are massive to thickly bedded, while siltstones are thinly bedded to platy. Dolomatic concretions occur near the base.

Within the Puente Hills, the thickness of the Soquel Member ranges from 2,000 to 2,800 feet. It has a gradational, and locally unconformable, contact with the underlying La Vida Member and a gradational contact with the overlying Yorba Member. It correlates with part of the Monterey Formation in southern Orange County and part of the Modelo Formation in Los Angeles County.

Lyons et al (1990) have interpreted the Soquel Member in the Puente Hills to represent a series of coalescing depositional lobes deposited at the base of the continental slope. Sediments were derived from prograding fan deltas on the narrow continental shelf and transported to the base of the continental slope by gullies cut into the continental slope. Fossils are rare, but late Miocene forams and fossil fish have been found. During paleontological monitoring of the existing Olinda Alpha Landfill property in 1998, RMW Paleo Associates collected what they identified as the first Argonauts from Orange County.

5.9.2 THRESHOLDS OF SIGNIFICANCE

The criteria to determine the sensitivity of an area for cultural resources are based on the following three-tiered classification system:

- Low Sensitivity: This rating is given if there is no water available or steep, rugged slopes are present.

- Moderate Sensitivity: This rating is given if water and other resources are available within 0.5 to two miles.

- High Sensitivity: This rating is given if the level/semi-level landforms are near potable water.

The criteria to determine the sensitivity of an area for paleontological resources are based on the following sensitivity ratings:

- Undetermined Sensitivity: Areas underlain by sedimentary rocks for which literature and unpublished studies are not available have undetermined potential for containing significant paleontological resources. These areas must be inspected by a field survey conducted by a qualified vertebrate paleontologist. A specific determination of high or low potential for containing significant non-renewable paleontological resources can then be made.

- Low Sensitivity: Following a literature search, records check and a field survey, areas may be determined by a qualified vertebrate paleontologist as having low potential for containing significant paleontological resources subject to adverse impacts. Low potential can not be determined simply by looking for rock unit qualifications on a geologic map. For instance, an area mapped as alluvium may actually be a thin surficial layer of non-fossiliferous sediments which cover fossil-rich Pleistocene sediments. An area mapped as granite may be covered by a Pleistocene soil horizon that contains fossils. The actual sensitivity must be determined by both a records search and a field inspection.

- High Sensitivity: Sedimentary rock units with high potential for containing significant non-renewable paleontological resources are rock units within which vertebrate or significant invertebrate fossils have been determined to be present or likely to be present. These units include, but are not limited to, sedimentary formations which contain significant non-renewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils.

High sensitivity includes not only the potential for yielding abundant vertebrate fossils, but also for production of a few significant fossils that may provide new and significant taxonomic, phylogenetic, ecologic and/or stratigraphic data.

High sensitivity (High A) is based on geologic formations or mappable rock units that are rocks that contain fossilized body elements, and trace fossils such as tracks, nests and eggs.

High sensitivity (High B) is a sensitivity equivalent to High A, but is based on the occurrence of fossils at a specified depth below the surface. High B indicates that fossils are likely to be encountered at depth, and may be impacted during excavation by construction activities. For high sensitivity B areas, a standard condition is provided to the environmental document for the project, specifying that, during grading stage review, a Paleontological Resource Impact Mitigation Program (PRIMP) is a condition for any excavation that reaches or exceeds a specified depth.

5.9.3 METHODOLOGY RELATED TO CULTURAL AND SCIENTIFIC RESOURCES

On February 11, 2004, LSA conducted a records search at the South Central Coastal Information Center of the Historical Resource Information System at California State University, Fullerton. Documents and literature regarding known cultural resources and previous archaeological studies within one mile of the landfill property were reviewed. This included examination of the National Register of Historic Places, the California Register of Historic Resources, Office of Historic Preservation, Archaeological Determinations of Eligibility and Directory of Properties in the Historic Property Data File, and historic maps.

A paleontological locality search was conducted through the Orange County paleontological records. It included a review of the area geology and any known paleontological resources recovered from the surrounding area and the geologic formations that will likely be encountered during excavation activities.

On February 13, 2004, the landfill expansion area was surveyed by LSA archaeologist Roderic McLean. The purpose of the survey was to identify any cultural resources present on the project site. Steep slopes and recent terracing characterize the project site. At a minimum, 30 percent of the lateral expansion area is disturbed. Ground visibility on the project site was dependent on vegetation density. Areas where native soils were exposed were scrutinized carefully, as were rodent burrows and their associated back dirt piles. Soil profiles were examined for evidence of cultural stratigraphy.

The project site was surveyed by LSA paleontologists Brooks R. Smith and Steven W. Conkling, an Orange County certified paleontologist. The survey consisted of a visual inspection of exposed soil, ground surface and bedrock outcrops. Where possible, the surveyors walked the project area in transects spaced approximately five yards apart. Surface scrapes were conducted to better expose obscured areas. If any resources were located in situ, the surveyor was prepared to assess the find for significance and, if necessary, document it. If the find was deemed to be significant, the surveyor noted its location with a Garmin Global Positioning System (GPS) unit. The use of GPS units allows localities to be quickly and accurately plotted on a standard 7.5N

United States Geological Survey (USGS) topographical map. The surveyor also filled out a Fossil Locality Sheet containing the field number of the locality, tentative identification of the find, description of the sediments, formation name, location of the find on the project site, GPS information and elevation.

5.9.4 POTENTIAL IMPACTS

The results of the records search indicate that no archaeological surveys have been conducted on the proposed expansion site. The original landfill property was surveyed by the Archaeological Planning Collaborative (1979). A second survey was performed east of the project site (Brown et al. 1990). An historic site, CA-ORA-1291H, is recorded approximately one-quarter mile east of the landfill property. That site is described on the site record as a historic rock retaining wall along with a trash pit. Pieces of a wood stove and amethyst glass were observed. Additionally, 11 sites are recorded within one mile of the landfill property. All are located at the base of the mountain to the south and southwest of the landfill property.

No cultural resources were identified on the proposed expansion site. Additionally, the project site involves very steep landform. Other than rock shelters, rock art and rock mines, steep landforms are considered very low sensitivity regarding cultural resources. The project site is devoid of rock outcrops that would be used for prehistoric activities and no mining has taken place. The likelihood that cultural resources may be uncovered during ground disturbing activities is low. However, in the unlikely event that cultural resources are discovered, mitigation measures described in the following Section would ensure that any discovered cultural resources are properly documented and recovered. Therefore, the potential scientific value of cultural resources on the project site, if any, will be assured. Therefore, the proposed project will not result in adverse impacts on cultural resources.

No paleontological resources were identified on the project site during the field survey. The project site involves a very steep landform that limits access to many places in the expansion area. Potential exists for paleontological resources to occur on the project site in areas that could not be accessed or beneath the ground surface. Therefore, there is the potential to encounter paleontological resources during ground disturbing activities. The mitigation measures described in the following Section would ensure that the impacts to non-renewable paleontological resources will be reduced to below a level of significance.

5.9.5 MITIGATION MEASURES

The following mitigation measures were developed to avoid or minimize as much as possible the potential impacts of the proposed project related to cultural and scientific resources.

C-1 The construction bid package, related construction and design plans, and specifications shall require that if buried cultural material is encountered during project construction, the County's construction contractor shall immediately stop work in the area. Work shall be halted until the County can retain a qualified archaeologist, and the nature and significance of the find are determined. If significant archaeological material is found, it

shall be salvaged and collected in compliance with all applicable regulations and sent to a designated museum.

C-2 If human remains are encountered during project construction, the County's construction contractor shall immediately stop work in the area. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

C-3 A Paleontological Resources Impact Mitigation Program (PRIMP) will be implemented. The PRIMP shall include, but not be limited to, the following: paleontological monitoring, preparation of any collected specimens to the point of identification, curation of specimens to a museum or similar institution and preparation of a mitigation report documenting any findings.

5.9.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed expansion site is on a mountain landform that is not considered high potential for cultural and scientific resources. Implementation of mitigation measures C-1, C-2 and C-3, described above, will ensure that potential cultural and scientific resources related impacts are reduced to below a level significance.

5.10 HAZARDS

This Section describes and evaluates the potential risks to human health, the built environment and the natural environment associated with the transportation, use, generation, storage and disposal of hazardous materials required for the proposed Olinda Alpha Landfill expansion project.

5.10.1 EXISTING CONDITIONS

The existing conditions information for Olinda Alpha Landfill is based on information provided in the Olinda Alpha Report of Facility Information (RFI) (2000). Olinda Alpha Landfill is a Class III Landfill and does not accept hazardous materials for disposal. Landfill staff monitor wastes entering the site for hazardous wastes utilizing a random load check procedure during which refuse from the load is spread out in a designated area and checked for hazardous materials. Vehicles containing hazardous materials are rejected and all returning offenders are subject to mandatory load checks each time they bring refuse to the landfill. Low level radioactive waste monitors are installed at the fee collection booths. Any vehicle carrying waste identified as radioactive by the monitors is rejected. All hazardous waste found during burial operations is collected, categorized and either returned to the generator/hauler, or, if the hauler cannot be identified, properly stored on-site until removed for disposal by a licensed hazardous waste disposal firm. Hazardous materials found during burial operations are stored in a covered concrete containment area, in secondary cells, segregated by material type. No hazardous wastes are stored on-site for more than ninety days.

Olinda Alpha Landfill has an on-site diesel and gasoline fueling station. The 10,000-gallon diesel tank and the 1,000-gallon gasoline tank have approved secondary containment systems and are properly permitted. Waste oils, lubricants, filters, etc. generated by on-site equipment maintenance activities are stored in a covered concrete containment area, in secondary cells, segregated by material type prior to being picked up by licensed recyclers. The reporting and cleanup of any spill must comply with federal, state and local landfill regulations. Under these regulations, landfill staff must be trained in hazardous materials reporting and cleanup procedures. Any hazardous materials storage area must be permitted and must have secondary containment systems consistent with federal, state and local agency permitting procedures.

The existing LFG control/recovery system collects LFG via horizontal collection lines and vertical extraction wells laid within the disposal area. LFG collected by these lines and wells is piped to the gas-to-energy plant or to flaring systems to be burned. Pursuant to 27 CCR Section 20919 and 20919.5, monitoring of LFG occurs at wells around the perimeter of Olinda Alpha Landfill. LFG perimeter probes determine if LFG is migrating from the landfill. According to SCAQMD Rule 1150.1 Monitoring Reports for Olinda Alpha Landfill, the landfill is not in exceedance of the five percent total organic compounds (TOC, measured as methane) per volume limit and there is no migration of LFG away from the landfill perimeter.

Groundwater is extracted from wells for on-site treatment by an Advanced Oxidation Process. Treated groundwater is used for on-site dust suppression.

Landfill leachate is collected through the LCRS and pumped to a double contained storage location, then hauled off-site for disposal by an approved treatment facility. IWMD will evaluate whether leachate may be disposed into the on-site existing treatment system after upgrades have been made to the system.

5.10.2 THRESHOLDS OF SIGNIFICANCE

The proposed project would result in a significant adverse impact related to hazards and hazardous materials if it:

- Creates a significant hazard to the public or the environment through the routine use, transport or disposal of hazardous materials.

- Creates a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- Is on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and which would create a significant hazard to the public or the environment.

- Is in an airport land use plan or within two miles of a public airport and would result in a safety hazard for people residing or working in the project area.

- Is in the vicinity of a private airstrip and would result in a safety hazard for people residing or working in the project area.

- Impairs implementation of or physically interferes with an adopted emergency response plan or emergency evacuation plan.

- Exposes people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

- Includes a new or retrofitted storm water treatment control Best Management Practices (BMPs) (e.g., water quality treatment basin, constructed treatment wetlands), the operation of which results in significant environmental effects such as increased vectors and odors.

5.10.3 METHODOLOGY RELATED TO HAZARDS

To evaluate hazardous materials and wastes handling procedures, the RFI (2000) was reviewed. Permits for any on-site areas for fuel storage were also reviewed to ensure that permits for on-site hazardous materials storage areas were current.

The City of Brea and the County of Orange GPs Safety Elements were reviewed to ensure that the proposed project would not conflict with existing emergency and evacuation routes.

To determine the potential of LFG release and migration during the decomposition of wastes in the landfill, the most recent SCAQMD Rule 1150.1 Monitoring Reports available from IWMD when this EIR was prepared were reviewed (fourth quarter of 2002 and the first, second and third quarters of 2003).

Maps were consulted to determine if any public or private airports are within two miles of the proposed project.

The design drawings were used to determine if any new BMPs were proposed and if the proposed project included adequate storage areas for hazardous materials used on-site or those found during burial operations.

5.10.4 POTENTIAL IMPACTS

5.10.4.1 Use, Disposal or Transport of Hazardous Materials

The existing landfill load check program, low level radioactive waste monitors and compliance with federal, state and local landfill regulations pertaining to hazardous waste exclusion control the potential for hazardous waste disposal at the landfill. Therefore, impacts due to disposal of hazardous materials will be less than significant.

5.10.4.2 Potential Accidental Release of Hazardous Materials

Accidental Release of Hazardous Materials Stored On-Site

No new fuel storage facilities or fuel pumping stations at the landfill are proposed as part of the project. Potential spills or releases of gasoline, diesel and stored hazardous materials from landfill equipment during expansion of the landfill may occur outside the isolation of secondary containment systems. Impacts due to potential accidental release of diesel, gasoline, stored hazardous waste, waste oils and lubricants are less than significant (they are addressed by the BMPs implemented as part of NPDES).

Accidental Release of Landfill Gas and Leachate

Pursuant to 27 CCR Sections 20919 and 20919.5, existing LFG recovery systems will be extended into the landfill expansion areas as refuse is added to the landfill's expansion area and monitoring of LFG perimeter probes will continue as waste is added to the landfill. It is anticipated that perimeter probes will be moved or added to the eastern edge of the 33-acre expansion area. Because the current landfill operations produce TOC below limits defined by the SCAQMD in Rule 1150.1(e), because the expansion area is on the eastern edge and in the middle of the landfill property away from the Olinda Ranch PC, because additional LFG recovery systems will be added to the expansion area and additional monitoring probes will be placed at the perimeter to comply with 27 CCR Sections 20919 and 20919.5 and SCAQMD requirements, and because it is not anticipated that the proposed project will cause TOC to exceed SCAQMD limits due to controls that will be in place during operation of the expansion area, potential impacts due to accidental release of LFG or lateral migration of LFG will be less than significant. For additional information regarding LFG

and the potential for it to be released into the atmosphere, refer to Section 5.6 (Air Quality) of this EIR.

Groundwater and leachate collection systems will be augmented as required by regulatory agencies for the landfill expansion areas. All collected groundwater and leachate will be subject to existing processes for treatment and containment. Impacts due to accidental release of untreated groundwater and leachate will be less than significant.

5.10.4.3 Impacts to the Public or the Environment

Government Code Section 65962.5

The project site is not on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, therefore, would not create a significant hazard to the public or the environment.

Vectors

There would be no impact resulting in increased vectors or other environmental effects due to new or retrofitted BMPs (e.g., water quality treatment basin, constructed treatment wetlands) because the proposed project does not include any new or retrofitted BMPs.

5.10.4.4 Impacts Related to Safety Hazards

Airports

The proposed project is not within a public airport land use plan or within two miles of a public or public use airport or in the vicinity of a private landing strip. Therefore, there will be no impact due to safety hazards with respect to airports to people residing or working in the project area.

Emergency Response and Emergency Evacuation Plans

Although the Olinda Alpha Landfill evacuation routes include streets in the City of Brea, the proposed project will not change either the City of Brea or the County of Orange Emergency Response and Emergency Evacuation Plans. There will be no impact to the City of Brea or County of Orange Emergency Response and Emergency Evacuation Plans under the proposed expansion project.

Wildland Fires

Olinda Alpha Landfill is located in a Very High Fire Hazard Area as designated on the City of Brea General Plan EIR Wildland Fire Hazard Areas Map. There is a remote possibility that litter and vegetation would be ignited by vehicle sparks, lighted cigarettes or matches thrown from vehicles; however, design and operations procedures in place at Olinda Alpha Landfill prevent or reduce the potential for fire and enable rapid fire control. Subsurface fires from the combustion of buried loads would cause localized settling and would impact landfill operations but would not result in

significant adverse impacts to users of the landfill or the general public because few people have access to the covered parts of the landfill. As discussed earlier in Section 5.9.4.2, LFG is controlled by collection and combustion in the LFG to energy facility and in the backup flare facility. This prevents spontaneous fires and explosions by limiting lateral LFG migration to nearby buildings. Controls in place at the landfill reduce potential wildland fire impacts to below a level of significance.

5.10.5 MITIGATION MEASURES

No mitigation is required for hazards because federal, state and local landfill regulations that currently govern landfill procedures would be extended to cover operations on the Olinda Alpha Landfill expansion.

5.10.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to public health and safety with respect to hazardous materials would be less than significant because the landfill expansion would comply with federal, state and local landfill regulations that currently govern landfill procedures.

5.11 PUBLIC SERVICES

This Section describes existing fire protection and emergency services in the project area and addresses potential impacts of the proposed project on the availability and capacity of the Orange County Fire Department (OCFA) to serve the project site. In addition, this Section describes recreational facilities and opportunities in the project area and addresses the potential impacts that the proposed project will have on the availability of those facilities.

Through the IS, issues related to police protection, schools and other government facilities were determined to be less than significant; therefore, these issues are not addressed in this Section. Refer to Section 3.0 for discussion of those environmental parameters.

5.11.1 EXISTING CONDITIONS

5.11.1.1 Fire Protection and Emergency Services

Orange County Fire Authority

Fire protection and emergency medical services at Olinda Alpha Landfill are provided by the OCFA. The OCFA receives and dispatches emergency calls at a regional level from 61 fire stations. Resources are deployed on a regional delivery system, assigning personnel and equipment to emergency incidents without regard to jurisdictional boundaries. OCFA Station 34, at 1530 Valencia Avenue in Placentia, is the first responder to calls at Olinda Alpha Landfill. Station 34 is approximately 3.5 miles from the landfill entrance and approximately 4.5 miles from the active landfilling area site. This distance accounts for an approximate 6 to 7.5 minute response time. Station 34 consists of a paramedic engine (four personnel), a truck (four personnel) and a Battalion Chief (one personnel).

The OCFA participates in a Mutual Aid Agreement with other agencies. This Agreement between agencies is intended to assist in times of need. OCFA must first commit its own resources prior to asking for assistance. OCFA also provides emergency medical and rescue services, hazardous materials or substances inspections, and response and public education activities. In addition, OCFA participates in disaster planning as it relates to emergency operations.

Fire Control at Olinda Alpha Landfill

Fires could be caused at the landfill when combustible refuse, vegetation or litter in the landfill is ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles. To minimize the occurrence of fires, flammable debris is removed from heavy equipment on a daily basis. Compacted cover applied daily limits the oxygen available for combustion in the refuse area. Daily cover also creates individual cells that would confine a fire to a relatively small area.

The design and operation of the landfill incorporates required fire safety features in compliance with the OCFA, including full sprinkler systems where required, all necessary fire lines and hydrants

with appropriate fire flows, and unobstructed fire emergency access to the landfill property and buildings at the landfill.

There are numerous fire control, prevention practices and fire fighting provisions currently in place at Olinda Alpha Landfill. The landfill has a 100,000-gallon storage tank for potable water dedicated to fire protection and a fire hydrant is located near the LFG flaring system. Two water trucks are available on the landfill property for fire fighting purposes. Fire extinguishers are required and are provided on all heavy equipment at the landfill. Internal combustion engines have required OCFA approved spark arrestors. In addition, fire extinguishers are located within 50 feet of the aboveground liquid tanks.

Permits to dispense and store flammable and combustible liquids and the handling, storage and transport of hazardous materials are obtained from the OCFA and are on file at the landfill and OCFA.

The project site and vicinity are located in a Very High Fire Severity Hazard Zone. Therefore, all buildings on the landfill property are equipped with fire sprinklers. Through the Mutual Aid Agreement, all fires are immediately reported to the OCFA.

5.11.1.2 Recreational Opportunities

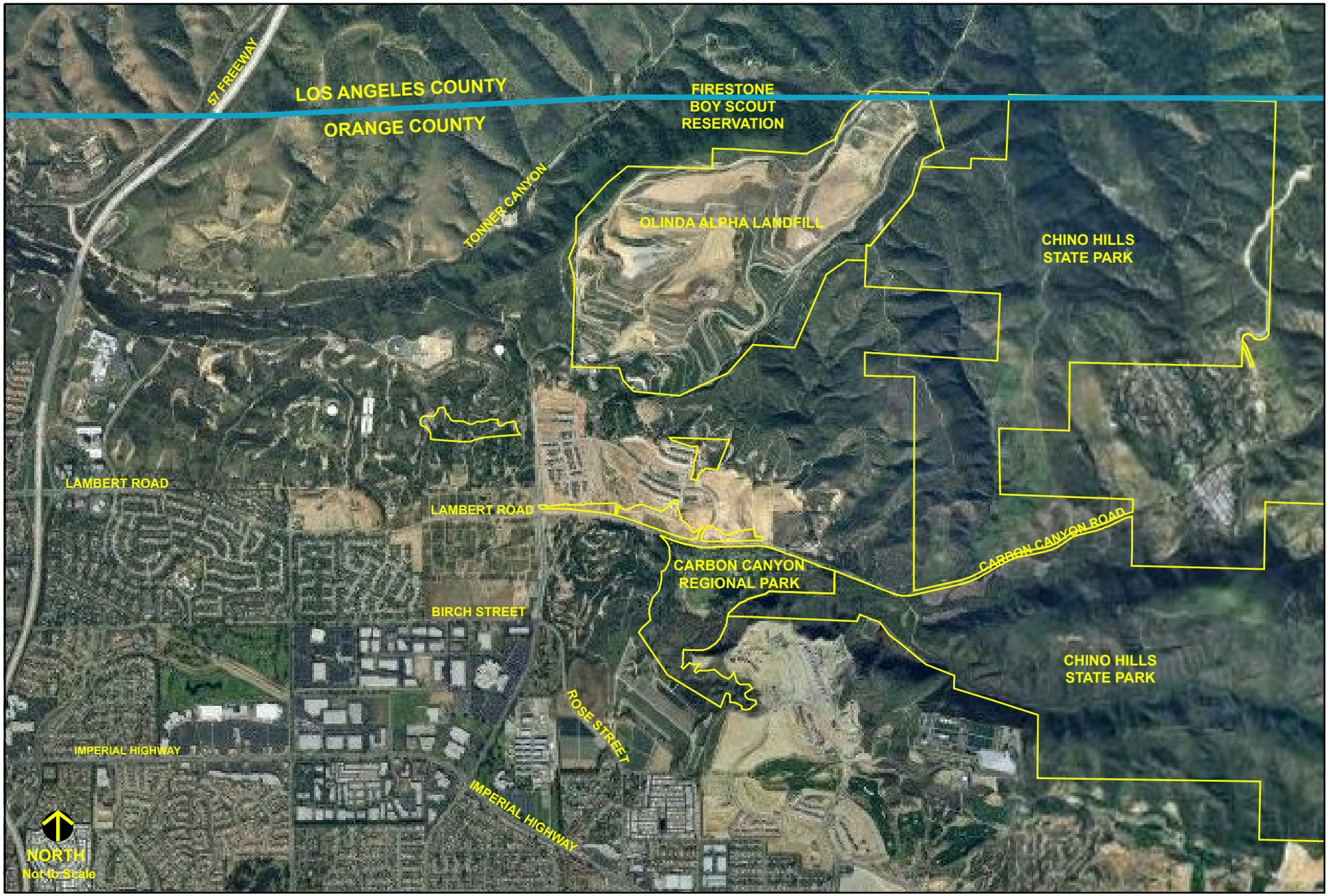
A variety of recreational opportunities are available throughout Orange County and in the project vicinity. These recreational opportunities range from passive and active neighborhood parks designed to serve local community needs to large wilderness parks that provide hiking and picnicking opportunities. Many of the County's regional parks provide unique wildlife viewing opportunities and attract both local and regional residents. Recreational opportunities in the project area are discussed below by jurisdiction. The locations of these facilities in relation to the landfill property are provided in Figure 5.11-1.

State of California Chino Hills State Park (Existing)

Chino Hills State Park, a 12,452-acre wilderness park owned by the State of California, is 1.7 miles southeast of Olinda Alpha Landfill. This Park is equipped with a picnic area, equestrian staging area and primitive camping facilities. The Park includes 65 miles of trails for hiking, mountain bike riding and equestrian use.

County of Orange Carbon Canyon Regional Park (Existing)

Carbon Canyon Regional Park, a 125-acre park owned by the County of Orange, is 0.9 mile southeast of Olinda Alpha Landfill. The Park, in a floodplain at the base of Carbon Canyon Dam, is accessible from Carbon Canyon Road. The Park is both an active and passive use park that includes a lighted tennis court, multi-purpose fields, volleyball courts, restrooms, picnic shelters, barbeques, picnic tables, a four-acre fishing lake, equestrian trails, hiking trails and a bike trail.



Source: Keyhole, Inc. and P&D Consultants, Inc. (2004).

Figure 5.11-1
Recreational Facilities in the Vicinity of Olinda Alpha Landfill

County of Orange Olinda Regional Park (Proposed)

Olinda Regional Park is a passive use proposed regional park that includes the Olinda Alpha Landfill property. A part of the park site adjacent to the landfill is designated on the County of Orange General Plan as an existing Regional Park. This parcel of land is owned by the County due to a recent acquisition, but is not currently open to the public. Future access to this site is dependent on the closure and reclamation of Olinda Alpha Landfill.

City of Brea

Olinda Ranch Neighborhood Park is located immediately adjacent to the north side of Carbon Canyon Road and abuts the south part of the Olinda Ranch Planning Community. Park amenities include picnic tables, a tot lot, a basketball court and a baseball field.

Private Recreational Facilities

Firestone Boy Scout Reservation is a private recreational facility immediately north of Olinda Alpha Landfill in Los Angeles and Orange County. The facility is one of four camping facilities owned by the Los Angeles Area Council of the Boy Scouts of America. The Reservation includes an archery and rifle range, swimming pool, nature center, hiking trails and outdoor camping facilities. The Reservation originally included approximately 3,300 acres adjacent to the northern Olinda Alpha Landfill property boundary. Approximately 2,400 acres of the Reservation were sold in 2000 to the City of Industry's Industry-Urban Development Agency (IUDA). A new weekend camping facility is proposed for construction within the remaining 870 acres retained by the Boy Scouts, on the southeast part of the original Reservation. The Scouts have entered into an agreement with the IUDA to allow continued use of the property for camping until the new facilities are constructed. Under the current agreement, the Boy Scouts are permitted use of the site to accommodate large camping groups and use of existing training facilities on a part-time basis.

5.11.1.3 Regional Biking, Riding and Hiking Trails

State of California

Chino Hills State Park includes over 65 miles of trails for hiking, mountain bike riding and equestrian use. The trails allow for passive and active recreation uses. A one mile long nature trail in Carbon Canyon Regional Park provides access to Chino Hills State Park for hikers. The existing Chino Hills Trail on the City of Brea GP Riding and Hiking Trails Master Plan is along the east boundary of the landfill property and in the proposed Olinda Regional Park. Figure 5.11-2 shows riding and hiking trails in the vicinity of the Olinda Alpha Landfill.

County of Orange

The County of Orange maintains a Regional Trail System consisting of paved bike paths and unpaved trails for hiking, mountain biking and equestrian use. The Regional Trail System provides linkages with community trails throughout Orange County and trails from surrounding

counties. As shown on the County's Master Plan of Regional Riding and Hiking Trails map, the conceptual alignment for the Diamond Bar Trail is in the vicinity of the landfill expansion in the proposed Olinda Regional Park as depicted on Figure 5.11-2.

City of Brea

The City of Brea GP Riding and Hiking Trails Master Plan identifies the proposed Tres Hermanos Trail extending through the Olinda Alpha Landfill property. The Trail provides a link between the proposed Tonner Ridge and Diamond Bar Trails as shown on Figure 5.11-2. The Parks and Recreation Element of the City of Brea GP includes the three trails listed above with facilities proposed to meet recreational needs projected for 2020.

The City of Brea Bikeway Master Plan depicts the proposed Valencia Avenue bike path in the vicinity of the landfill. The facility is proposed as a Class I facility, which is defined as a path that is physically separated from motor vehicles and designed primarily for the use of bicycles. The path is intended to facilitate future use of the proposed Olinda Regional Park by providing access for bicyclists from the intersection of Imperial Highway and Valencia Avenue to this future regional park.

5.11.2 THRESHOLDS OF SIGNIFICANCE

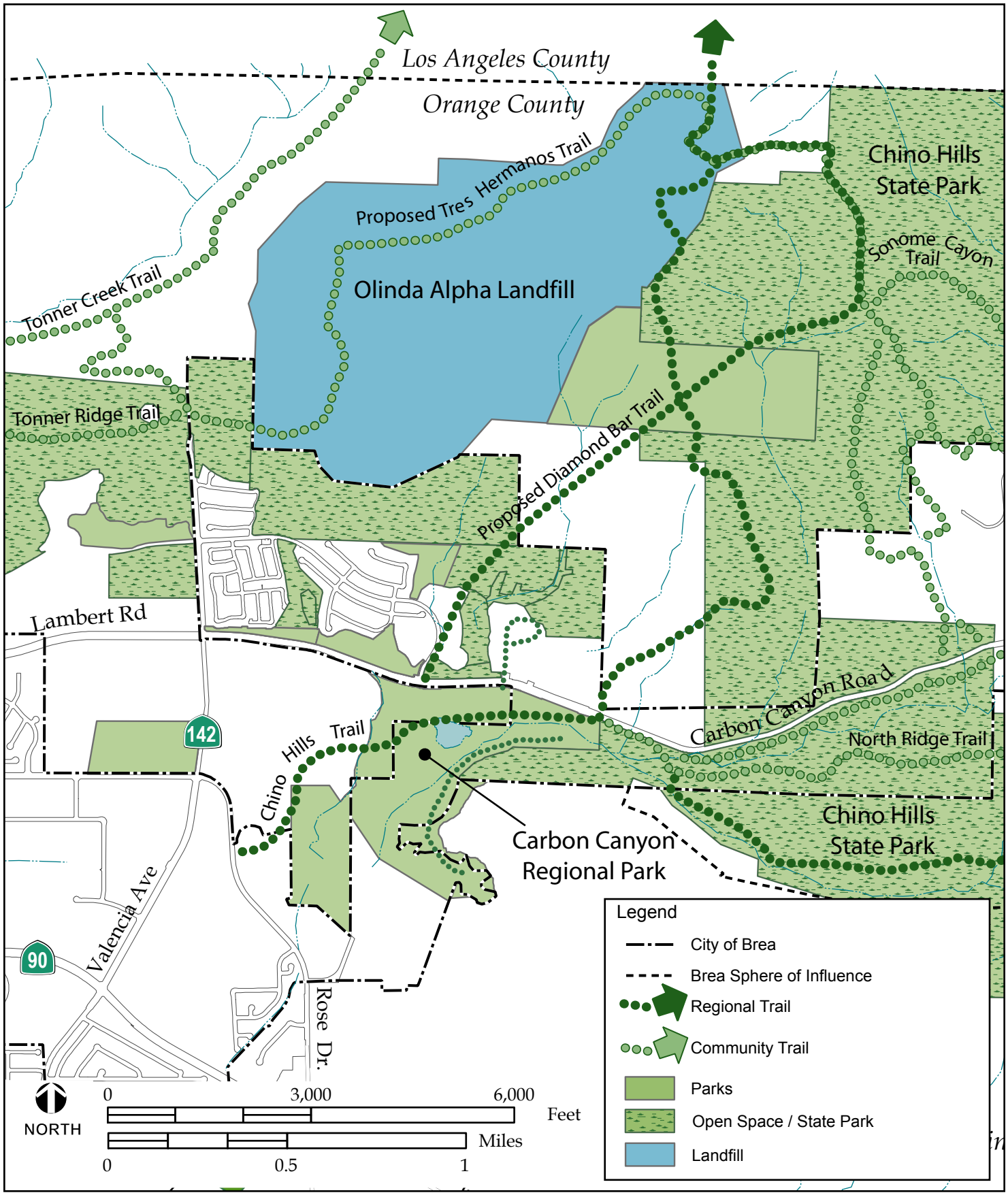
Public service impacts would be considered significant and adverse if the proposed project:

- Results in a need for the substantial expansion of existing facilities.
- Results in an increase in demand for services that could not be met by existing or planned resources.
- Results in an increase in emergency response time.
- Results in need for new/altered government facilities/services regarding parks.

5.11.3 METHODOLOGY RELATED TO PUBLIC SERVICES

The OCFA was contacted to determine if the proposed project would result in a significant adverse impact on its ability to provide fire protection and emergency services to the landfill and surrounding area.

The proposed expansion project was compared to the County of Orange Master Plan of Regional Recreation Facilities and City of Brea General Plan Recreation Element for consistency.



Source: City of Brea General Plan (2003), County of Orange General Plan (2000) and P&D Consultants, Inc. (2004).

Figure 5.11-2

Riding and Hiking Trails in the Vicinity of the Olinda Alpha Landfill

5.11.4 POTENTIAL IMPACTS

5.11.4.1 Fire Protection and Emergency Services

The design and operation of the expansion area at the landfill will incorporate required fire safety features in compliance with the OCFA similar to existing features associated with the existing landfill operations. The OCFA has stated that they are currently upgrading several fire stations in the project area; however, the proposed project will not result in the need for additional fire service personnel nor would it require the need to expand any existing facilities or construction of new facilities.

Because the landfill property is in the Very High Fire Severity Hazard Zone, all new development on the site will conform to applicable wildland occupancy standards. Therefore, no significant adverse impact is anticipated.

Olinda Alpha Landfill has regulatory mandates requiring extensive operational procedures for the prevention and control of fires. Section 5.10.5 (Existing Conditions) discusses the existing fire control, prevention practices and fire fighting provisions currently used at the landfill. The proposed vertical and horizontal expansion at the landfill will result in the continued operation of the landfill from 2013 to approximately 2021. The operation of the landfill will include continued adherence to applicable state and local ordinances related to fire prevention and control. Therefore, no significant adverse impact is anticipated.

5.11.4.2 Recreational Opportunities

The Olinda Alpha Landfill property is designated on the County of Orange Master Plan of Regional Recreational Facilities and the City of Brea General Plan as a future County passive use regional park. The planned post-closure use of the existing landfill would result in the conversion of the landfill property to a passive use regional park. The vertical and horizontal expansion will result in the continued operation of the landfill from 2013 to approximately 2021 which will delay the use of this site for recreational use for at least eight years. However, it will not preclude the recreational opportunity of this site after closure of the landfill. This short term delay is not considered to be a significant adverse impact.

The City of Brea currently exceeds the established service standard of five acres of park and recreation facilities per 1,000 residents. The City's GP buildout estimates up to 50,483 people living in the City of Brea in 2023. Brea will still exceed its park service standard with implementation of the GP. Therefore, the vertical and horizontal expansion will not result in a significant adverse impact on the City of Brea's ability to meet its parkland service standard.

Implementation of the proposed project does not include the construction of residential or commercial uses which would result in the increased use of area parks or regional recreational facilities. The proposed project will not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Implementation of the proposed project will not result in the need for new or altered recreational facilities.

5.11.4.3 Regional Biking, Riding and Hiking Trails

The proposed vertical and horizontal expansion of Olinda Alpha Landfill will not impact any existing trails. The County of Orange Master Plan of Regional Riding and Hiking Trails does not identify any existing trails or trail staging areas on the landfill property. The alignment for the proposed Diamond Bar Trail is depicted in the Master Plan along the northeastern landfill property boundary. Implementation of this conceptual trail alignment is not planned in the near future and most likely would be implemented after closure of the landfill. If this proposed trail is implemented prior to landfill closure, it should be located outside the landfill property.

The City of Brea Trail Plan identifies the proposed alignment of the Tres Hermanos Trail as traversing the landfill property from the southwest to the northeast. However, implementation of this trail will not occur until after landfill closure. The City's Trail Plan identifies the alignment of the Chino Hills Trail along the west part of the landfill property. As with the Diamond Bar Trail, if these trails are implemented prior to landfill closure, they should be located outside the landfill property. For these conceptual trails, if they are constructed after landfill closure, they would likely be located on the landfill property as part of the future Olinda Regional Park use.

5.11.5 MITIGATION MEASURES

Impacts to public services (fire protection services and parks) will be less than significant and no mitigation is required.

5.11.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts to public services (fire protection and parks) are less than significant.

5.12 BIOLOGICAL RESOURCES

This Section describes existing biological resources within the maximum 33-acre landfill expansion area, potential adverse impacts of the landfill expansion on biological resources, and mitigation measures to reduce or avoid potentially significant adverse impacts of the proposed project on biological resources.

5.12.1 EXISTING CONDITIONS

5.12.1.1 Plant Communities

The plant communities in the proposed landfill expansion area were determined during biological field surveys. There are five plant communities present within the 33-acre expansion area surveyed, as shown on Figure 5.12-1: cut/slope revegetation (10.6 acres), toyon-sumac chaparral (16.9 acres), Venturan-Diegan transitional coastal sage scrub (CSS, 4.0 acres), oak woodland (1.3 acres) and ruderal non-native grassland (0.2 acre). Each of these plant communities is described below.

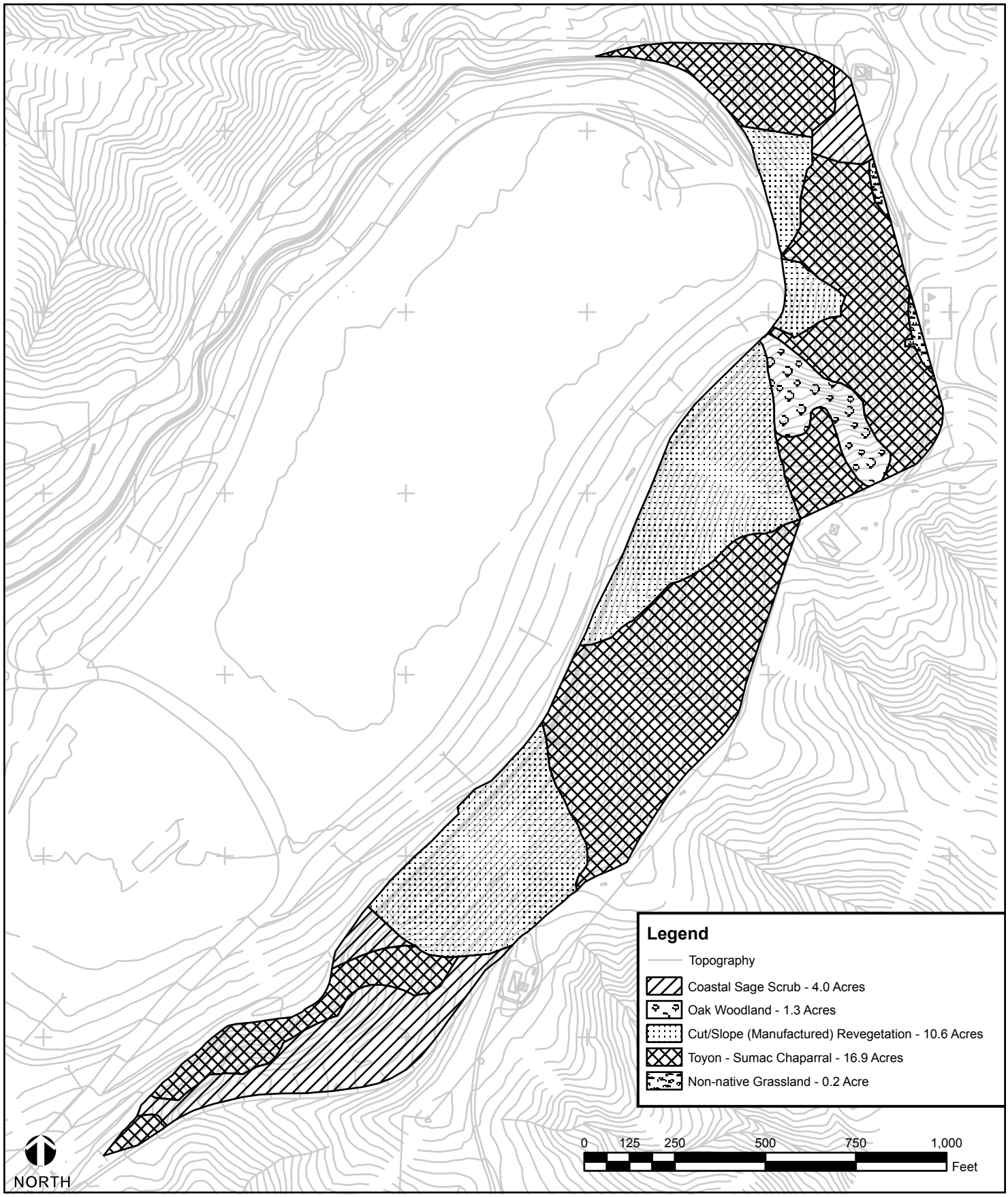
Cut/Slope Revegetation

The plant community classified as cut/slope revegetation comprises 10.6 acres of the expansion area. It is present on the cut-slopes where previous ground disturbance has occurred. These areas were hydroseeded in 1996 as part of a landslide remediation project (County of Orange, IWMD). The hydroseeding, in combination with recolonization by surrounding native plant species, has created a plant assemblage consisting of California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), deerweed (*Lotus scoparius*), thick-leaved yerba santa (*Eriodictyon crassifolium*), California encelia (*Encelia californica*), saltbush (*Atriplex* spp.) and Parish's viguiera (*Viguiera parishii*). Currently, the height of the vegetation varies between 1.5 and five feet. The structure of the vegetation has changed and grown in stature over the past year and provides some foraging, refuge and nesting habitat for wildlife species.

Venturan-Diegan Transitional Coastal Sage Scrub

Venturan-Diegan transitional CSS comprises 4.0 acres of the expansion area. This scrub association is dominated by low stature, drought deciduous species. This transitional association often contains elements of two recognized geographical associations of CSS, Venturan and Diegan. The Orange County Habitat Classification System (OCHCS; Gray and Bramlet 1992) recognizes 12 subassociations of Venturan-Diegan transitional CSS. The most prevalent subassociation on the landfill expansion site was California sagebrush-California buckwheat scrub.

The vegetative cover of the Venturan-Diegan traditional CSS within the expansion area varies from open to dense. It is dominated by California sagebrush and California buckwheat. Additional common plant species detected during the survey and common to this plant community include deerweed, black sage, purple sage (*Salvia leucophylla*), white sage (*Salvia*



Source: P&D Consultants, Inc. (2004).

Figure 5.12-1
Plant Communities in the 33-Acre Expansion Area

apiana), California brickellia (*Brickellia californica*), Parish's viguiera, California sunflower (*Helianthus californicus*), white sweet clover (*Melilotus alba*), blue-eyed grass (*Sisyrinchium bellum*) and California encelia (*Encelia californica*). Two woody shrubs, lemonade berry (*Rhus integrifolia*) and laurel sumac (*Malosma laurina*), were also common as subdominants in this community. Site factors include low moisture availability, with steep, xeric slopes and clay-rich soils that are slow to release stored water. This community typically intergrates at higher elevations with several chaparral associations.

Additional plant species not detected but common to this plant community include narrow-leaved bedstraw (*Galium angustifolium*), California wishbone bush (*Mirabilis californica*) and coastal goldenbush (*Isocoma menziesii* var. *menziesii*). Native bunchgrasses, including purple needlegrass (*Nassella pulchra*), foothill needlegrass (*Nassella lepida*) and coast range melic (*Melica imperfecta*), often occur as understory in the spaces between the shrubs.

Toyon-Sumac Chaparral

Toyon-sumac chaparral typically contains broad-leaved sclerophyll shrubs, ranging from 6.5 to 13 feet tall, and often forms dense, nearly impenetrable vegetation dominated by a number of plant species. The toyon-sumac plant community occupies 6.9 acres in the expansion area. The common plant species detected during the survey included lemonade berry, toyon (*Heteromeles arbutifolia*) and laurel sumac. Other plant species detected included chaparral currant (*Ribes malvaceum*), fuchsia-flowered gooseberry (*Ribes speciosum*), silver bush lupine (*Lupinus albifrons*), poison oak (*Toxicodendron diversilobum*), mule-fat (*Baccharis salicifolia*), coast live oak (*Quercus agrifolia*), blue elderberry (*Sambucus mexicana*), wild-cucumber (*Marah fabaceus*), chaparral bush mallow (*Malacothamnus fasciculatus*) and sticky monkeyflower (*Mimulus aurantiacus*). Within the lateral expansion area, the toyon-sumac chaparral occupied areas are in an undisturbed condition offering foraging, refuge, burrowing and nesting habitat for wildlife. This plant community is abundant throughout the Chino Hills-Puente Hills area.

Plants are typically deep-rooted in this habitat. There is usually little or no understory vegetation, though often there is a considerable accumulation of leaf litter. Growth may occur throughout the year but it is highest in spring and much reduced during the late summer-fall dry season or during the winter at higher elevations. The flowering season for most chaparral species extends from late winter to early summer. This community is adapted to repeated fires, to which many species respond by stump sprouting. A dense cover of annual herbs may appear during the first growing season after a fire, followed in subsequent years by perennial herbs, short-lived shrubs and re-establishment of dominance by the original shrub species. Site factors include dry, rocky, often steep slopes with little soil. Slopes are typically north-facing in southern California; the slopes within the landfill expansion area are generally north-northwest facing.

Coast Live Oak Woodland

Coast live oak woodland is considered a sensitive plant community by the California Department of Fish and Game (CDFG) as listed in the California Natural Diversity Database (CNDDB 2003). The distribution of coast live oak woodland includes the outer South Coast Ranges, and coastal slopes of the Transverse and Peninsular Ranges, usually below 4,000 feet. Within coast

live oak woodlands, only one dominant tree species exists, coast live oak, which is evergreen. Within this plant community, coast live oaks ranged from 35 to 40 feet in height. The other tree species present in this community in the landfill expansion area was southern black walnut (*Juglans californica*). Within the expansion area, the shrub layer was well developed creating vegetative layers and structure. The dominant shrub plant species was blue elderberry. Other shrub plant species present included toyon, fuchsia-flowered gooseberry, lemonade berry and laurel sumac. Within the expansion area, this community is on a north-facing slope in a shaded ravine. The complexity of the overstory has created damp conditions in the understory, with species of fern and rotting logs present. Within the expansion area, the coast live oak woodland areas were in undisturbed condition offering foraging, refuge, burrowing and nesting habitat. Within the expansion area, coast live oak woodland is limited to 1.3 acres.

Ruderal Non-Native Grassland

Grassland plant communities are typically characterized by both native bunchgrasses and non-native annual grasses. Grassland habitat occurs in isolated areas within the expansion area (0.2 acre). It appears associated with areas that have been subject to disturbance. The types of vegetation vary according to the nature and severity of the disturbance and generally include shortpod mustard (*Hirshfeldia incana*), tocalote, Russian thistle (*Salsola tragus*), cardoon, milk thistle (*Silybum marianum*), Australian saltbush and cheeseweed (*Malva parviflora*). Non-native annual grasses such as oats, bromes and barleys are often a substantial component of grassland areas.

5.12.1.2 Wildlife Species

In general, the plant communities within the approximate 33-acre expansion area would be expected to contain many species typical of these habitats. This would include amphibians, reptiles, birds and mammals, as described below. Special interest wildlife species are described later in this Section.

The following species were detected on the landfill expansion site during the field surveys. Within the oak woodland, a garden slender salamander (*Batrachoseps major*) was located under a rotting log. Tracks of mule deer (*Odocoileus hemionus*) and scat of bobcat (*Felis rufus*) were detected. A coyote (*Canis latrans*) was also detected on-site.

The following bird species were located within the expansion area during the biological surveys: lesser goldfinch (*Carduelis psaltria*), song sparrow (*Melospiza melodia*), yellow-rumped warbler (*Dendroica coronata*), wrentit (*Chamaea fasciata*), house finch (*Carpodacus mexicanus*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), common raven (*Corvus corax*), red-tailed hawk (*Buteo jamaicensis*), northern flicker (*Colaptes auratus*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculates*), house wren (*Troglodytes aedon*), rufous-crowned sparrow (*Aimophila ruficeps*), Bewick's wren (*Thryomanes bewickii*), greater roadrunner (*Geococcyx californianus*), western scrub jay (*Aphelocoma californica*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), Cassin's kingbird

(*Tyrannus vociferans*), bushtit (*Psaltriparus minimus*) and Lincoln's sparrow (*Melospiza lincolnii*).

5.12.1.3 Wildlife Corridors

The regional context of Olinda Alpha Landfill is an important consideration in the analysis of wildlife movement through the proposed landfill expansion area. Tonner Canyon, north and west of the landfill property, is an important wildlife corridor linking animal movement from one side of SR 57 to the other (City of Brea General Plan Final EIR 2003 and Wildlife Corridor Conservation Authority (WCCA) 2002). To the immediate east of the landfill property is Chino Hills State Park, and further east is Carbon Canyon. Both these areas are known as important wildlife movement areas (City of Brea General Plan Final EIR 2003). They compose what is known as the Puente-Chino Hills wildlife corridor, which connects Cleveland National Forest in the Santa Ana Mountains with the Whittier-Puente Hills to the west-northwest. The species diversity and importance of this wildlife corridor are such that the WCCA, a joint powers authority represented by the Cities of Whittier, La Habra Heights, Diamond Bar and Brea, and Los Angeles County, California Department of Parks and Recreation, CDFG and Santa Monica Mountains Conservation Authority was formed. The WCCA was created to provide the proper planning, conservation and environmental protection of the habitat in this wildlife corridor.

Immediately to the west of the expansion area is the active landfill, which creates conditions largely unsuitable for wildlife movement. Because of the existing landfilling activities, east-west wildlife movement is highly restricted in that area. Currently, east-west wildlife movement is occurring north of the landfill, where fewer constraints to movement are present. The east border of the proposed expansion area is on the west-facing side of an existing ridgeline. Currently, any north-south wildlife movement in the vicinity of the expansion area would be following this geographic feature, and would fall outside of the direct impact area for the proposed expansion.

5.12.1.4 Special Interest Habitats/Species

There are no listed species of plants or wildlife confirmed to be present within the expansion area. Other special interest habitats and species in the landfill expansion area are described below.

<u>Coast Live Oak Woodland</u>

Coast live oak woodland is listed as a sensitive plant community by the CDFG (CNDDB 2003). On the expansion area, this plant community occupies 1.3 acres.

<u>Venturan-Diegan Transitional Coastal Sage Scrub</u>

Both the Diegan and Venturan CSS communities are ranked as very threatened by the CNDDB (2003). On the expansion area, this plant community occupies 4.0 acres.

Intermediate Mariposa Lily

Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) is known to occur on dry, rocky open slopes and rock outcrops in CSS and chaparral at elevations from 390 to 2,000 feet. It is included on the California Native Plant Society (CNPS) 1B list (rare, threatened or endangered in California and elsewhere). The expansion area contains approximately 20.9 acres of suitable habitat for intermediate mariposa lily. This species blooms from May to July, and its presence is difficult to determine outside of this time period.

Many-Stemmed Dudleya

Many-stemmed dudleya (*Dudleya multicaulis*) is often associated with clay soils in barrens, rocky places and ridgelines, as well as thinly vegetated openings in chaparral and CSS habitats. It prefers heavy, clay-like soils on sloped terrain, and the majority of populations are associated with CSS. It is on the CNPS 1B list, meaning it is rare, threatened or endangered in California and elsewhere. The expansion area contains approximately 20.9 acres of suitable habitat for many-stemmed dudleya. This species blooms from April to July, and its presence is difficult to determine outside of this time period.

Orange-Throated Whiptail

The orange-throated whiptail (*Aspidoscelis hyperythrus*) is a California Species of Concern (CSC) species. The preferred habitats for this species include chaparral, CSS and oak woodland. This species relies on perennial vegetation because its major food source, termites, requires perennial plants as a food base. California buckwheat, a colonizing species of disturbed, sandy soils, is an important indicator of favorable habitat for orange-throated whiptail. This species prefers inter-shrub spacing of 10 to 40 percent bare ground cover, which is required for foraging and thermoregulatory behavior. The landfill expansion area contains habitat suitable for orange-throated whiptail, although none were sighted during the field surveys.

Coast Horned Lizard

The coast horned lizard (*Phrynosoma coronatum blainvillei*), a CSC species, is found in a wide variety of vegetation types including CSS, chaparral and oak woodland. This species requires areas with frequent pockets of open microhabitat for thermoregulation. Although none were detected during the surveys, the habitat characteristics of the landfill expansion area are suitable for coast horned lizard.

Northern Red-Diamond Rattlesnake

The northern red-diamond rattlesnake (*Crotalus ruber rubber*) is a CSC species. Although this snake is recorded from a number of vegetation types, it is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral or boulder associated CSS provide suitable habitat. Availability of suitable dens for both hibernation and breeding may be a limiting factor in its distribution. The landfill expansion area contains habitat suitable for northern red-diamond rattlesnake. Although none were sighted during the field surveys, northern red-diamond rattlesnakes have been seen at the landfill expansion area.

Coast Patch-Nosed Snake

The coast patch-nosed snake (*Salvadora hexalepis virgultea*) is a CSC species. This snake is associated with brushy or shrubby vegetation, such as CSS and chaparral. There is little information on the specific habitat requirements of this species except that it requires small mammal burrows for refuge and overwintering sites. The landfill expansion area contains suitable coast patch-nosed snake habitat, although none were sighted during the field surveys.

Coastal California Gnatcatcher

The coastal California gnatcatcher (*Polioptila californica californica*, CAGN) is a federally threatened species (USFWS 1993). Habitat preferences of the CAGN primarily include CSS communities. CSS is composed of relatively low-growing, dry-season deciduous and succulent plants. The gnatcatcher prefers CSS with an open or broken canopy but is also found in low scrub with a closed canopy. It is generally scarce in scrub dominated by tall shrubs (e.g. taller than approximately five feet).

In general, the habitat qualities of the landfill expansion area are marginally suitable for CAGN. The most suitable habitats included the plant communities classified as Venturan-Diegan CSS and cut/slope revegetation which together total 14.6 acres on the landfill expansion site. This habitat is not ideally suited to CAGN because of the lack of contiguous, high quality CSS. Additionally, the expansion area contains steep slopes that would not typically be preferred by CAGN.

The critical habitat designation by USFWS (2000) for CAGN excludes the Olinda Alpha Landfill property. However, critical habitat for CAGN is located immediately to the west, north and east edges of the landfill property.

A total of six (6) protocol surveys for CAGN were conducted by Douglas Willick (Permit TE821404-3) and Gilberto Ruiz (Permit TE 840036-2) to determine presence/absence of this species. All surveys were conducted during appropriate weather conditions per USFWS survey requirements.

Records from the CNDDB (2003) show that the three closest recorded observations of CAGN to the landfill expansion area were approximately 1.5 miles to the southwest (1999), 2.5 miles to the southeast (1999) and 3.5 miles to the west (2001). An important factor is the difference in elevation from these recorded sites (average of 600 feet) compared to the expansion area (1,200 feet). According to Atwood (1990), 94 percent of all CAGN locality records (Los Angeles, Orange and San Diego Counties) occur at or below an elevation of 820 feet, which makes the suitability of the landfill expansion area marginal for CAGN.

Coastal Cactus Wren

The coastal cactus wren (*Campylorhynchus brunneicapillus*), a CSC species, is an obligate, nonmigratory resident of the CSS plant community. It is closely associated with three species of cacti and occurs in thickets of cholla (*Opuntia prolifera)* and prickly pear (*Opuntia littoralis* and

Opuntia oricola) dominated stands of CSS below 1500 feet in elevation. Characteristic shrubs associated with habitat occupied by the cactus wren include California buckwheat, California sagebrush, several sage species and scattered shrubs approaching tree-size, such as laurel sumac and lemonade berry. The proposed landfill expansion area provides only marginally suitable habitat for this species due to the lack of cacti species.

Rufous-Crowned Sparrow

The rufous-crowned sparrow (*Aimophila ruficeps canescens*) is a CSC species. Suitable habitat for this species includes moderate to steep CSS and chaparral, and often occurs near the edges of the denser scrub and chaparral associations. The rufous-crowned sparrow prefers stands of California sagebrush but also colonizes sparse CSS and chaparral recovering from a burn. Optimal habitat consists of sparse, low brush on slopes preferably interspersed with boulders and outcrops. It is generally absent from dense, unbroken stands of CSS and chaparral. The dominant overstory shrubs associated with the habitats used by rufous-crowned sparrow include California sagebrush, purple sage, black sage, California encelia, coyote brush (*Baccharis pilularis*), mock heather *(Ericameria ericoides*), deer weed, giant rye (*Leymus condensatus*) and buckwheat. This species was detected within the landfill expansion area and suitable habitat exists in that area for this bird.

Bell's Sage Sparrow

The Bell's sage sparrow (*Amphispiza belli belli*) is a CSC species. The sage sparrow prefers semi-open habitats with evenly spaced shrubs three to six feet high. Vertical structure, habitat patchiness and vegetation density may be more important in habitat selection by the sage sparrow than the specific shrub species. Tall, overgrown chaparral stands generally have fewer sage sparrows than shorter shrubs. The Bell's sage sparrow seeks cover in fairly dense stands in chaparral and scrub habitats in the breeding season, and they forage on the ground beneath and between shrubs. In general, this species is closely associated with sagebrush. CSS plant species associated with Bell's sage sparrow include *artemisia, purshia* and *atriplex* as well as mixed brush and cactus patches in arid washes. The landfill expansion area provides habitat characteristics that are suitable for Bell's sage sparrow.

5.12.2 THRESHOLDS OF SIGNIFICANCE

Biological resource impacts would be considered significant and adverse if the proposed project would result in one or more of the following conditions:

- Substantially and adversely affect, either directly or through habitat modifications, a candidate, sensitive, threatened or endangered species.

- Substantially and adversely affect any riparian habitat or other sensitive natural community.

- Interfere substantially with the movement of any resident or migratory fish or wildlife species.

The evaluation of impacts with these thresholds must also consider the resource and its extent and distribution locally and regionally. Determining whether an impact is significant depends on whether or not the loss would be substantial with respect to local or regional extent of the species.

5.12.3 METHODOLOGY RELATED TO BIOLOGICAL RESOURCES

A search of the CNDDB (2003) was completed for the four closest quadrangles to Olinda Alpha Landfill: the La Habra, Yorba Linda, Anaheim and Orange quadrangles. In addition, the assessment of existing biological resources on the expansion site was aided by biological surveys on February 17 and March 5, 2004, by Mikael Romich, P&D Biologist. During these visits, the site was surveyed for existing biological resources in the expansion area. All plants and animals detected were noted and plant community mapping was completed with the aid of an aerial photograph. These plant community delineations were then transferred to a Geographic Information System (GIS) to allow acreage calculations.

The OCHCS (Gray and Bramlet 1992) was used to classify the plant communities in the landfill expansion area based on characteristic plant species and structure. The OCHCS divides plant communities into associations and subassociations. An association is a particular type of plant community that has been described sufficiently and repeatedly in several locations such that it is considered to have a relatively consistent species composition, a characteristic physiognomy (growth form or structure) and a distribution that is characteristic of a particular habitat. For this analysis, plant communities were classified into associations.

5.12.4 POTENTIAL IMPACTS

5.12.4.1 Impacts on Plant Communities

The conversion of the 33-acre expansion area to landfill uses will adversely impact all the plant communities and biological resources currently occupying that site. The impacted plant communities will include 10.6 acres of cut/slope revegetation, 16.9 acres of toyon-sumac chaparral and 0.2 acre of ruderal non-native grassland. Additionally, there will be impacts to 1.3 acres of coast live oak woodland, a sensitive natural community, and 4.0 acres of Venturan-Diegan transitional CSS, a very threatened community.

The impacts to the 16.9 acres of toyon-sumac chaparral and the 0.2 acres of grassland are not considered adverse and significant because they are not considered special status plant communities and are found abundantly on a local and regional scale.

The adverse impacts to 4.0 acres of Venturan-Diegan CSS are considered significant because it is a threatened community and provides marginally suitable habitat for the CAGN.

The adverse impacts to 10.6 acres of cut/slope revegetation are considered significant because they have the potential to provide marginally suitable habitat for the CAGN.

The adverse impacts to 1.3 acres of coast live oak are significant because it is considered a sensitive natural community.

5.12.4.2 Impacts on Special Interest Species

Two sensitive plant species (CNPS 1B list) may be impacted by the landfill expansion project: intermediate mariposa lily and many-stemmed dudleya. Although these species have not been confirmed within the proposed expansion area, suitable habitat for these species does exist within the expansion area.

Protocol surveys for CAGN were conducted on-site within the 33-acre expansion area, but did not reveal the presence of this species. As such, no impacts to CAGN are expected to occur with project implementation.

The rufous-crowned sparrow, a CSC species, was confirmed within the expansion area during biological surveys. The northern red-diamond rattlesnake, a CSC species, was confirmed within the landfill expansion area. Although their presence was not confirmed, the expansion area provides suitable habitat for the following CSC species: orange-throated whiptail, coast horned lizard, coast patch-nosed lizard, coastal cactus wren and Bell's sage sparrow. As a result, these species will potentially be adversely impacted by the proposed landfill expansion. Generally, adverse impacts to CSC species are not considered significant because of their abundance on a regional scale.

5.12.4.3 Impacts to Wildlife Corridors

The 33-acre expansion area is part of the existing landfill property and is within the Puente-Chino Hills wildlife corridor. To determine the impacts to wildlife movement, the area surrounding the landfill expansion area must be considered. Immediately to the west is the active landfill, which creates conditions largely unsuitable for wildlife movement. Because of the existing landfilling activities, east-west wildlife movement is highly restricted in that area. Currently, east-west wildlife movement is occurring north of the landfill, where fewer constraints to movement are present. The proposed eastern expansion of the landfill will shift landfilling activities a maximum of 440 feet directly east. Therefore, the landfill expansion is not expected to further reduce east-west wildlife movement.

The east border of the proposed expansion area is on the west-facing side of an existing ridgeline. Currently, any north-south wildlife movement in the vicinity of the expansion area would be following this geographic feature, and would fall outside of the direct impact area for the proposed expansion. If wildlife were directly using the habitat within the expansion area for movement, there is abundant open space to the immediate east in Chino Hills State Park that would provide opportunities for north-south movement. Therefore, general north-south wildlife movement patterns in the vicinity of the expansion area are not anticipated to be directly impacted by this proposed project.

The indirect effects of the landfill expansion on wildlife movement may include the generation of dust, noise and light emissions that could potentially disturb animal behavior. These effects

would most greatly impact wildlife movement east-northeast of the expansion area, in Chino Hills State Park. The expansion area will remain on the western side of an existing ridgeline. The ridgeline will act as a natural filter to dust and noise, allowing the eastern slope of the existing ridgeline to remain largely undisturbed. In addition, the majority of wildlife species using movement corridors would do so during evening hours when there is no landfill activity occurring because the landfilling operations terminate at dark.

The indirect effects of dust on wildlife movement are not expected to be significant. The County of Orange IWMD, as operator of the landfill, already implemented a dust control program to minimize particulate matter from entering the air during existing landfill operations. This program will continue and will be expanded to cover operations within the proposed landfill expansion area.

The indirect effects of noise on wildlife movement are not expected to be significant. After a period of acclimation to noise events, the wildlife would be expected to use adjacent areas normally. The most potentially disruptive noise event is the "cracker shell" which is used to scare gulls away. Based on qualitative notes during field surveys, this existing "cracker shell" noise did not appear to disrupt wildlife resident within the landfill expansion area.

The indirect effects of light on wildlife movement are not expected to be significant. Existing sources of night light at the landfill are minimal because there is no operation after daylight hours. There is no planned night lighting within the proposed landfill expansion area.

The expansion of the landfill will postpone closure and reuse of the property from 2013 to 2021. After closure of the landfill, the site is proposed for conversion to a passive use regional park. The existing conditions at the landfill do not provide suitable habitat or dispersion qualities for wildlife movement. However, it is anticipated that post-closure conditions (i.e. hydroseeded slopes and greenbelts) would provide more suitable conditions for wildlife movement. The suitability and value of the planned regional park to wildlife movement will depend on the specific park development plan and the recreation uses implemented on the site. In particular, the amount of vegetation restored to natural conditions and the degree of recreation use would influence suitability for wildlife movement.

Recent research (Crooks 2002, Tigas et al. 2002, Riley et al. 2003) has provided new information on how bobcat and coyote react to fragmentation and urbanization. In general, both species can be tolerant of fragmentation and human development but particular behavioral modifications occur. For example, the general pattern of activity for coyote and bobcat is crepuscular (rest during the day, traveling to foraging areas at dusk, foraging and rest during the night, and traveling to resting areas at dawn). With human disturbance, they are even less active during the day when human activity is high and become more active at night when human activity is low. Although these species may be tolerant of a fragmented landscape, they utilize natural areas more than developed areas, expand their home range in increasingly urbanized areas, and shift their use of developed areas to periods of decreased human presence (Riley et al. 2003). The eight year postponement of the landfill property for conversion to the regional park would delay the time frame for additional wildlife access and movement through the area.

5.12.5 MITIGATION MEASURES

The following mitigation measures will reduce impacts of the proposed to below a level of significance.

B-1 Prior to the removal of the 1.3 acres of coast live oak, IWMD shall prepare and submit a Mitigation Monitoring and Reporting Program (MMRP) to the CDFG for review and approval. In accordance with an approved MMRP, IWMD will replace the 1.3 acres of coast live oak woodland at a 1:1 ratio (or as otherwise approved by the CDFG). The location of coast live oak plantings on the landfill will be determined in consultation with CDFG and a qualified ecologist. However, if the ultimate location of these replacement oaks are within the disposal area of the landfill, the RWQCB-SA will need to approve the plan to ensure that the tree root system does not compromise landfill operations and/or closure (final cover) requirements.

B-2 Prior to the removal of the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, IWMD shall prepare and submit a Coastal Sage Scrub Mitigation Plan (CSSMP), to the CDFG for review and approval. In accordance with an approved CSSMP, the IWMD will replace the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, which provide marginally suitable habitat for the California gnatcatcher, at a 1:1 ratio (or as otherwise approved by the CDFG). Guidelines for the CSSMP are:

- The mitigation areas/sites shall have been evaluated and selected on the basis of their suitability for use as coastal sage scrub revegetation areas. The parameters evaluated shall include but not be limited to soil conditions, slope aspect, proximity to adjacent coastal sage scrub, level of difficulty of site preparation, and ownership status.
- The mitigation plan shall provide procedures to prepare the soils in the mitigation area, provide detailed seeding/planting mixtures, provide seeding/planting methods and provide any other procedures that will be used for successful revegetation.
- Maintenance and monitoring goals shall be established.

5.12.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed project would result in significant adverse impacts to certain biological resources. Implementation of mitigation measures B-1 and B-2, above, will reduce these potential impacts of the proposed landfill expansion to below a level of significance.

SECTION 6.0
ALTERNATIVES TO THE PROPOSED PROJECT

SECTION 6.0
ALTERNATIVES TO THE PROPOSED PROJECT

6.1 OVERVIEW

This Section of the Environmental Impact Report (EIR) describes alternatives to the proposed expansion project at Olinda Alpha Landfill. In addition to the evaluation of the preferred project Alternative discussed in Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance), Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines requires that an EIR describe a range of reasonable alternatives to the proposed project that could feasibly attain most of the basic objectives of the project and are capable of avoiding or substantially lessening any of the significant effects of the proposed project. Section 15126.6 also requires that a No Project Alternative shall be evaluated along with its impacts. The No Project Alternative described in this Section considers the environmental consequences if the proposed project is not implemented.

In addition to the No Project Alternative discussed below and the proposed project analyzed in Section 5.0, this Section discusses two other project alternatives and alternatives that were considered but rejected. Potential environmental impacts associated with the two alternatives to the proposed project are discussed in this Section for the same environmental parameters addressed for the proposed project. A summary discussing the feasibility of the two alternatives is also provided.

6.2 PROJECT OBJECTIVES

Section 4.6 (Project Objectives) identified the project objectives for the proposed expansion at Olinda Alpha Landfill. These objectives are repeated here to allow meaningful comparison of the proposed expansion with the other two project Alternatives and the No Project Alternative and to provide for an understanding of the alternatives that were considered but rejected. The objectives of the proposed project to expand Olinda Alpha Landfill, which were derived from the Regional Landfill Options for Orange County (RELOOC) study goals and objectives and the RELOOC planning process, are:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.
- Ensure that the County's near term waste disposal needs are met.
- Maximize capacity of the existing Olinda Alpha Landfill.
- Maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees.
- Maintain efficient, cost effective and high quality Integrated Waste Management Department (IWMD) operations.

- Minimize adverse environmental impacts associated with municipal solid waste (MSW) disposal.

6.3 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

6.3.1 DESCRIPTION OF ALTERNATIVE 1

The No Project Alternative would include no action by the County of Orange related to changes in landfilling activities, footprint and operations at Olinda Alpha Landfill. Under this Alternative, the proposed expansion and the extended life of the landfill would not occur. The landfill would continue to operate at its existing permitted capacity and closure date with no increase in long term physical capacity. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 tons per day (TPD) of MSW under the existing Memorandum of Understanding (MOU) between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative, importation of MSW into Orange County landfills would end in 2013. As described earlier in Section 4.3.1.2 (Tonnage Projections for RELOOC), on closure of Olinda Alpha Landfill in 2013, approximately 1,000 TPD of MSW, which is in excess of what could be accommodated at the Frank R. Bowerman (FRB) and Prima Deshecha Landfills within the existing permitted levels, would have to be accommodated at landfills outside Orange County. Under the No Project Alternative, the maximum daily permitted tonnages at the FRB Landfill and Prima Deshecha Landfill would be the same as existing levels, at 8,500 TPD and 4,000 TPD, respectively. The total permitted landfill capacity in Orange County in 2013, when Olinda Alpha Landfill closes, would be 12,500 TPD (8,500 + 4,000 = 12,500 TPD). This permitted system capacity would be approximately 1,000 TPD short of the projected daily tonnage demand of approximately 13,500 TPD in 2021. For the analysis of the No Project Alternative and the alternatives to the proposed project for the Olinda Alpha Landfill expansion evaluated in this Section, this 1,000 TPD shortfall was assumed. Under the No Project Alternative, this excess tonnage beyond the permit limits would need to be transported out of Orange County for disposal. The projected excess 1,000 TPD of MSW to be exported out of County is based on population projections for the system demand by 2013 as described in detail earlier in Section 4.3.1.2. Out-of-County landfills would have to be permitted to accept the excess tonnage from Orange County and may include El Sobrante Landfill in Riverside County and/or the Mid-Valley Landfill in San Bernardino County.

6.3.2 IMPACTS OF THE NO PROJECT ALTERNATIVE

6.3.2.1 Land Use and Planning

The No Project Alternative would not have any significant adverse impacts on planned land uses or land use policies within Orange County or within the City of Brea because there would be no landfill expansion or extended landfill life under the No Project Alternative. There would be no need to renegotiate the MOU between the County and the City of Brea. However, there would be land use policy impacts with out-of-County landfilling since the excess 1,000 TPD of MSW would need to be disposed of out of Orange County. Negotiations between the Counties and development of a MOU to increase daily tonnage limits would be required. Therefore, adverse

impacts related to land use policy for out-of-County landfilling are anticipated under the No Project Alternative.

6.3.2.2 Geology and Soils

Under the No Project Alternative, there would be no disruption or displacement of soils on Olinda Alpha Landfill property other than that which would occur under existing operations and permits including closure. . In addition, there would be no disruption or displacement of soils other than what has been permitted at landfills outside of the County. Therefore, no adverse impacts related to geology and soils are anticipated under the No Action Alternative.

6.3.2.3 Hydrogeology and Geology

Under the No Project Alternative, there would be no additional refuse placement or potential leachate generation on the project site that would require coordination with the landfill section of the Regional Water Quality Control Board (RWQCB-SA). In addition, out-of-County landfilling would not have additional refuse placement or potential leachate generation other than what has been permitted. Out-of-County landfilling would still be required to coordinate with the landfill section of the RWQCB-SA. Therefore, no adverse impacts related to hydrogeology and water quality are anticipated under the No Project Alternative.

6.3.2.4 Surface Water Hydrology

Under the No Project Alternative, there would be no additional surface water flow on Olinda Alpha Landfill that would require a NPDES Permit and the SWPPP and BMPs that accompany the NPDES Permit. Out-of-County landfilling would not have additional surface water flow other than what has been permitted under the federally required industrial NPDES Permit to discharge storm flows. Therefore, no adverse impacts related to surface water hydrology are anticipated under the No Project Alternative.

6.3.2.5 Transportation and Circulation

Under the No Project Alternative, Olinda Alpha Landfill would close in 2013 on its currently scheduled closure date. Under this Alternative, importation of MSW from out-of-County would cease in 2013. After the 2013 closure, approximately 4,000 TPD of MSW would need to be accommodated at the Prima and FRB landfills in-County and approximately 1,000 TPD of MSW would have to be accommodated at landfills outside Orange County. Until 2013, the Olinda Alpha Landfill related traffic would be the same as existing conditions, with MSW traffic volumes ranging from a low of 364 daily vehicles to a high of 1,248 daily vehicles. These vehicles would be removed from the existing road network in the vicinity of Olinda Alpha Landfill in 2013. On an average day about 2,170 daily vehicles would be removed from the road system near Olinda Alpha Landfill after 2013 and would be traveling on the road system leading to the FRB, Prima Deshecha and out-of-County landfills. Therefore, there would be greater traffic occurring on road systems leading to the alternate landfill locations for diverted Olinda Alpha Landfill MSW after closure in 2013.

At present, a County Regional Park is planned for the landfill site after landfilling is terminated. The regional park would add traffic to the road system in the landfill vicinity; however, because the exact nature of the park is undefined at this date, that impact cannot be quantified.

6.3.2.6 Air Quality

Under the No Project Alternative, there would be an increase in air quality impacts once Olinda Alpha Landfill is closed in 2013. The increased mileage for truck trips required to transport MSW to the FRB and Prima Deshecha landfills in-County and outside the County would result in an increase in disposal vehicle exhaust. On-site equipment use at the other in-County and out-of-County landfills will be expected to be the same as those used for Olinda Alpha Landfill because quantities of MSW that need to be disposed of after closure of Olinda Alpha Landfill will be the same. Because on-site equipment use is projected to be the same as required at Olinda Alpha Landfill, emissions from this equipment would likewise be the same. Stationary sources of emissions (flares/power generation) would be provided at the other landfills accepting the diverted MSW. Because of the greater travel distance to transport MSW from the Olinda Alpha Landfill service area to other landfills, there would be a greater generation of air pollutant emissions under the No Project Alternative.

6.3.2.7 Noise

Under the No Project Alternative, there may be the potential for adverse increased noise impacts on sensitive receptors located along the travel routes of trucks hauling MSW to other in-County and out-of-County landfills after Olinda Alpha Landfill closes in 2013. The destination and route of travel for diverted MSW subsequent to the closure of Olinda Alpha Landfill is speculative. The potential for these impacts to occur would be dependent on the routes traveled by these trucks in Orange County and on the route to out-of-County landfills. On-site noise at landfills for which Olinda Alpha Landfill MSW would be diverted can be expected to increase due to the necessity for an increase in on-site equipment to dispose of the MSW. The potential for noise impacts at noise sensitive receptors in the vicinity of the landfills accepting diverted Olinda Alpha Landfill MSW is dependant on the proximity of these noise sensitive receptors to the landfill.

6.3.2.8 Aesthetics

The No Project Alternative would not change the aesthetic quality of views of Olinda Alpha Landfill because no expansion of the landfill or changes in landfilling practices would occur under this Alternative. The No Project Alternative has the potential to positively change the aesthetic quality of the views of landfills outside of Orange County because there would be less of an impact if those landfills close earlier than originally projected because of the additional MSW diverted from the Olinda Alpha Landfill. No adverse impacts related to aesthetics are anticipated under the No Action Alternative.

6.3.2.9 Cultural and Scientific Resources

The No Project Alternative would not involve excavation or grading on the landfill site beyond that which is currently permitted including final closure of Olinda Alpha Landfill. Even though other in-County and out-of-County landfilling includes the disruption or displacement of soils which has the potential to result in archeological or paleontological resources impacts, the areas anticipated to be disturbed have already been assessed under current landfilling permits. The No Project Alternative will not result in new adverse impacts related to cultural resources and scientific resources.

6.3.2.10 Hazards

Under the No Project Alternative, there would be no change from existing conditions at Olinda Alpha Landfill related to hazards and hazardous materials. Hazardous material disposal at other in-County and out-of-County landfilling would not be permitted. However, there would be a limited and shorter time use of hazardous materials on-site such as fuels, oils and other materials used in the operation and maintenance of landfill equipment and vehicles. This creates the potential for spills and leaks of fuel, oils and other liquids which would be similar to existing conditions and to the impacts under the proposed project. Potential impacts related to hazards would be similar under the No Project Alternative and the proposed project.

6.3.2.11 Public Services

Under the No Project Alternative, there would be no change from existing conditions at Olinda Alpha Landfill related to public services. Other in-County and out-of-County landfilling would not involve significant adverse impacts to public services because the landfilling activities will not increase the need for additional services. No adverse impacts related to public services are anticipated under the No Project Alternative. However, the costs for solid waste services in Orange County under the No Project Alternative will increase due to the longer hauling distances.

6.3.2.12 Biological Resources

Under the No Project Alternative, biological resources on Olinda Alpha Landfill property would remain as they currently exist. The existing vegetation would remain on the project site. Other in-County and out-of-County landfilling has the potential to impact biological resources. The biological resources anticipated to be disturbed have already been assessed and permitted at those landfills. No adverse impacts related to biological resources are anticipated under the No Project Alternative.

6.3.3 SUMMARY OF THE NO PROJECT ALTERNATIVE

Under the No Project Alternative, no change from existing conditions, no expansion and no extension of the life of Olinda Alpha Landfill would occur. This Alternative would be the environmentally superior alternative in the vicinity of the landfill because there would be less physical change to existing environmental conditions compared to the proposed project and the

project alternatives. However, environmental impacts associated with hauling/disposing of waste at alternate disposal sites would occur (as discussed above in Section 6.3.2).

There would also be an increase in transport and disposal costs (for out-of-County landfills) which cannot be quantified as the costs would be determined by haulers transporting MSW diverted from the Olinda Alpha Landfill. Although economics is not a consideration under CEQA, one of the primary objectives of RELOOC and the Olinda Alpha Landfill Implementation project is to "maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees". With exportation of MSW to out-of-County landfills under the No Project Alternative, that objective is not met.

6.4 ALTERNATIVE 2 – TWO LANDFILL SYSTEM IN 2013 (PRIMA DESHECHA DAILY TONNAGE INCREASE)

6.4.1 DESCRIPTION OF ALTERNATIVE 2

Alternative 2 assumes changes to Prima Deshecha Landfill to accommodate increased MSW as follows:

- Increase permitted TPD at Prima Deshecha Landfill from 4,000 TPD to 5,000 TPD when Olinda Alpha Landfill closes in 2013.

- Permitted TPD at FRB Landfill will remain at 8,500 TPD when Olinda Alpha Landfill closes in 2013.

- Olinda Alpha Landfill continues to accept an annual average of 7,000 TPD until its closure date in 2013.

- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.

- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1 Thru R5).

Alternative 2 proposes increasing the current permitted TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth (see Section 4.3.1.2) and factors in the lower total tonnage with importation ceasing in 2013. At FRB Landfill, the permitted TPD received would remain unchanged at 8,500 TPD. Based on the RELOOC Demand model (discussed in Section 4.3.1.2) approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 2.

Under Alternative 2, no expansion or extension of the Olinda Alpha Landfill closure date would occur. All importation of out-of-County MSW would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. The Prima Deshecha Landfill 2001 General Development Plan (GDP) remaining refuse capacity would remain unchanged at 77.6 million tons (MT) as of 2001 GDP. However, the incremental increase of the Prima Deshecha Landfill in-flow waste stream from 4,000 TPD to a permitted limit of 5,000 TPD would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years in the life of Prima Deshecha Landfill under Alternative 2.

Under Alternative 2, the number of truck trips to Prima Deshecha Landfill would increase although the period over which those would occur would be reduced by 11 years because the life of the landfill would be shortened under this Alternative.

Under Alternative 2, the existing County MOU with the City of San Juan Capistrano would need to be amended prior to 2013 to provide for the increase in permitted daily tonnage. Similarly, permits currently in-place with the California Integrated Waste Management Board (CIWMB) and other regulatory agencies with jurisdictional oversight for Prima Deshecha Landfill would need to be amended.

6.4.2 IMPACTS OF ALTERNATIVE 2

6.4.2.1 Land Use and Planning

Under Alternative 2, there would be significant adverse impacts to land use policies. Specifically, the existing County MOU with the City of San Juan Capistrano would need to be amended prior to 2013 to provide for the increase in the permitted daily tonnage. Similarly, existing permits with the CIWMB and other regulatory agencies with jurisdictional oversight for Prima Deshecha Landfill would need to be amended. Therefore, impacts associated with land use policies under Alternative 2 would be similar to land use impacts under the proposed expansion project at Olinda Alpha Landfill although a different MOU would be affected by each.

6.4.2.2 Geology and Soils

Under Alternative 2, there would be no disruption or displacement of soils other than what has been permitted in support of the Prima Deshecha Landfill 2001 GDP. Therefore, no adverse impacts related to geology and soils are anticipated under Alternative 2.

6.4.2.3 Hydrogeology and Water Quality

Under Alternative 2, there would be no additional refuse placement or potential leachate generation other than what has been permitted in support of the Prima Deshecha Landfill 2001 GDP. Prima Deshecha Landfill would still be required to coordinate with the landfill section of the RWQCB-SA. Therefore, no adverse impacts related to hydrogeology and water quality are anticipated under Alternative 2.

6.4.2.4 Surface Water Hydrology

Under Alternative 2, there would be no additional surface water flow other than what has been permitted under the federally required industrial NPDES Permit to discharge storm flows at the Prima Deshecha Landfill. In addition, landfill capacity would not be impacted. Therefore, no adverse impacts related to surface water hydrology are anticipated under Alternative 2.

6.4.2.5 Transportation and Circulation

Under Alternative 2, Olinda Alpha Landfill would close in 2013 and importation of waste from out-of-County would cease. Permitted maximum TPD at Prima Deshecha Landfill would increase from 4,000 to 5,000 TPD. At FRB Landfill the maximum permitted TPD would remain unchanged at 8,500 TPD.

As with Alternative 1, the Olinda Alpha Landfill related traffic until 2013 would be the same as existing conditions (see Alternative 1).

Longer trips to the more distant Prima Deshecha Landfill would occur and would impact roads serving Prima Deshecha Landfill as it accommodates this increased disposal rate for the remaining period that this landfill is open (its lifespan would be reduced substantially, with closure accelerated from 2067 to 2056). As a result, although there would be increased traffic and longer trips to the Prima Deshecha Landfill, this traffic would occur for a shorter duration as a result of the shortened lifespan of this landfill.

6.4.2.6 Air Quality

Under Alternative 2, there would be an increase in air quality impacts during operation of Prima Deshecha Landfill, due to the increase in truck trips to and from this landfill and resultant increase in disposal vehicle exhaust. On-site equipment use will be expected to be the same as that used for Olinda Alpha Landfill because quantities of MSW that need to be disposed of after closure of Olinda Alpha Landfill will be the same. Because on-site equipment use is projected to be the same as that required at Olinda Alpha Landfill, emissions from this equipment would likewise be the same. Stationary sources of emissions (flares/power generation) would be provided at Prima Deshecha Landfill accepting the diverted MSW. Overall, because of the greater travel distance to transport MSW from the Olinda Alpha Landfill service area to Prima Deshecha Landfill, there would be a greater generation of air pollutant emissions which would occur under Alternative 2.

6.4.2.7 Noise

Under Alternative 2, there would be an increase in noise impacts during operation of Prima Deshecha Landfill due to the increased truck trips. Traffic noise along travel routes to Prima Deshecha Landfill will increase due to the diverted vehicle trips subsequent to the closure of Olinda Alpha Landfill. Landfill-related traffic at Olinda Alpha Landfill would be reduced to only those employees and contractors responsible for constructing closure improvements and providing post-closure maintenance and monitoring. Traffic noise along access roads would be

reduced to those similar to levels for the future no project scenario in proximity of Olinda Alpha Landfill. In addition, although no significant adverse impacts have been identified, traffic-related vibration would also be reduced due to lower traffic volumes without the proposed project. On-site equipment use would also increase over existing conditions at Prima Deshecha Landfill, in response to the increased volumes of refuse disposal trucks causing an increase in noise levels. The potential for noise impacts at noise sensitive receptors in the vicinity of Prima Deshecha Landfill is dependant on the proximity of these noise sensitive receptors to the landfill.

6.4.2.8 Aesthetics

Alternative 2 has the potential to change the aesthetic quality of the views of Prima Deshecha Landfill. Because the landfill would close 11 years earlier under this Alternative, there is potential for less of an impact than if it stayed open until 2067. Therefore, potential impacts related to aesthetics would be less under Alternative 2 than under the proposed project.

6.4.2.9 Cultural and Scientific Resources

Alternative 2 includes the disruption or displacement of soils which has the potential to result in archeological or paleontological resources impacts. The areas anticipated to be disturbed under Alternative 2 have already been assessed in the permits for the 2001 GDP. Therefore, Alternative 2 would not result in new adverse impacts at Prima Deshecha Landfill related to cultural and scientific resources.

6.4.2.10 Hazards

Under Alternative 2, hazardous material disposal would not be permitted at Prima Deshecha Landfill, which is the same as existing conditions at this landfill. The existing IWMD program to prevent hazardous wastes from entering this landfill would continue under Alternative 2. However, there would be a limited and shorter time use of hazardous materials on-site such as fuels, oils and other materials used in the operation and maintenance of landfill equipment and vehicles. This creates the potential for spills and leaks of fuel, oils and other liquids which would be similar to existing conditions and to the impacts under the proposed project. Therefore, potential impacts related to hazards would be similar under Alternative 2 and the proposed project.

6.4.2.11 Public Services

Similar to the proposed project, Alternative 2 would not involve significant impacts to public services in Orange County because the landfilling activities will not increase the need for additional services at Prima Deshecha Landfill. Therefore, no adverse impacts related to public services are anticipated under Alternative 2. However, the costs for solid waste services will increase due to the longer hauling distances.

6.4.2.12 Biological Resources

Alternative 2 has the potential to impact biological resources at Prima Deshecha Landfill. The biological resources anticipated to be disturbed under Alternative 2 have already been assessed in the permits for the 2001 GDP. Therefore, Alternative 2 would not result in new adverse impacts related to biological resources at Prima Deshecha Landfill.

6.4.3 SUMMARY OF ALTERNATIVE 2

Alternative 2 would result in impacts similar to the proposed project. However, the incremental increase of the in-flow waste stream at Prima Deshecha Landfill from 4,000 TPD to a daily permit limit of 5,000 TPD would result in greater impacts related to transportation and circulation, air quality and noise under Alternative 2 than under the proposed project (as discussed above in Section 6.4.2).

6.5 ALTERNATIVE 3 – TWO LANDFILL SYSTEM IN 2013 (FRANK R. BOWERMAN DAILY TONNAGE INCREASE)

6.5.1 DESCRIPTION OF ALTERNATIVE 3

Alternative 3 assumes changes to FRB and Prima Deshecha Landfills to accommodate increased MSW as follows:

- Increase permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes in 2013.

- Permitted TPD at Prima Deshecha Landfill remains at 4,000 TPD when Olinda Alpha Landfill closes in 2013.

- Olinda Alpha Landfill continues to accept up to 7,000 TPD until its closure date in 2013.

- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.

- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1 Thru R5).

Alternative 3 proposes increasing the current permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth (see Section 4.3.1.2) and factors in the lower total tonnage with importation ceasing in 2013. The permitted TPD at Prima Deshecha Landfill would remain unchanged at 4,000 TPD. Based on the RELOOC Demand model (discussed in Section 4.3.1.2),

approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 3.

Under Alternative 3, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All out-of-County importation of MSW would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of FRB Landfill is 2022. Alternative 3 would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill results in a net reduction of one year of life at this landfill which just meets the horizon year goal of 2021 for this EIR. After 2021, the County would have one remaining landfill in their system. Under Alternative 3, the number of truck trips to the FRB Landfill would increase although the duration of the trips would be reduced because the life of the landfill would be shortened by one year.

Under Alternative 3, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased permitted daily tonnage. Similarly, existing permits with the CIWMB and other regulatory agencies with jurisdictional oversight for these landfills would need to be amended.

6.5.2 IMPACTS OF ALTERNATIVE 3

6.5.2.1 Land Use and Planning

Under Alternative 3, there would be significant impacts to land use policies. Specifically, the County's MOU with the Cities of San Juan Capistrano and San Clemente and the existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increase in the permitted daily tonnage. Similarly, existing permits with the CIWMB and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended. Therefore, adverse impacts related to land use policies would occur under Alternative 3.

6.5.2.2 Geology and Soils

Under Alternative 3, there would be no disruption or displacement of soils other than what has been permitted at FRB Landfill. Therefore, no adverse impacts related to geology and soils are anticipated under Alternative 3.

6.5.2.3 Hydrogeology and Water Quality

Under Alternative 3, there would be no additional refuse replacement or potential leachate generation other than what has been permitted at FRB Landfill. FRB Landfill would still be required to coordinate with the landfill section of the RWQCB-SA. Therefore, no adverse impacts related to hydrogeology and water quality are anticipated under Alternative 3.

6.5.2.4 Surface Water Hydrology

Under Alternative 3, there would be no additional surface water flow other than what has been permitted under the federally required industrial NPDES Permit to discharge storm flows at FRB Landfill. In addition, landfill capacity would not be impacted. Therefore, no adverse impacts related to surface water hydrology are anticipated under Alternative 3.

6.5.2.5 Transportation and Circulation

Under Alternative 3, Olinda Alpha Landfill would close in 2013 and importation of waste from out-of-County would cease. Permitted maximum TPD at FRB Landfill would increase from 8,500 to 9,500 TPD. Prima Deshecha's permitted TPD would remain unchanged at 4,000 TPD.

As with Alternatives 1 and 2, the Olinda Alpha Landfill related traffic until 2013 would be the same as existing conditions.

Longer trips to the more distant FRB and Prima Deshecha Landfills and traffic impacts on roads serving both these landfills would be anticipated to occur due to increased tonnage levels than if Olinda Alpha Landfill were to continue to operate until 2021. Although higher traffic impacts are anticipated at both FRB and Prima Deshecha with increased tonnages, the closure dates of each landfill would be accelerated, thereby removing traffic from the road networks adjacent to those facilities sooner than their currently scheduled closure dates.

6.5.2.6 Air Quality

Under Alternative 3, there would be an increase in air quality emissions during operation of FRB Landfill. The closure of Olinda Alpha Landfill would divert MSW truck trips to FRB Landfill which is further from the Olinda Alpha Landfill service area. Due to the increase in MSW truck travel distances to and from the FRB Landfill, there would be a corresponding increase in vehicle exhaust. On-site equipment use will be expected to be the same as used for Olinda Alpha Landfill because quantities of MSW that need to be disposed of after closure of Olinda Alpha Landfill will be the same. Because on-site equipment use is projected to be the same as required at Olinda Alpha Landfill, emissions from this equipment would likewise be the same. Stationary sources of emissions (flares/power generation) would be provided at FRB Landfill accepting the diverted MSW. Overall, because of the greater travel distance to transport MSW from the Olinda Alpha Landfill service area to FRB Landfill, there would be a greater generation of air pollutant emissions under Alternative 3.

6.5.2.7 Noise

Under Alternative 3, no expansion would occur at Olinda Alpha Landfill after 2013, no additional construction and no landfill activities would occur. Noise associated with on-site construction and landfill operations would cease to occur at Olinda Alpha Landfill 2013 but would increase at landfills accepting the diverted MSW.

Under this Alternative, no refuse or waste trucks would come to the Olinda Alpha Landfill after 2013. Therefore, landfill-related traffic would be reduced to only those employees required to process and maintain the landfill closure plan. Traffic noise along access roads would be reduced. In addition, traffic-related vibration would also be reduced.

Because truck trips to FRB Landfill would increase as a result of this project alternative, traffic noise and vibration along access roads leading to FRB Landfill would increase.

Regionally, noise and vibration associated with vehicles carrying MSW would be relocated along routes to other landfills accepting MSW that was previously destined for Olinda Alpha Landfill.

6.5.2.8 Aesthetics

Alternative 3 has the potential to change the aesthetic quality of the views of the FRB Landfill. Because the landfill closure date would be scheduled to occur one year earlier, there is the potential to create less of an impact than it would if it stayed open until 2022 although the change would likely not be noticeable. Therefore, potential impacts related to aesthetics would be less for Alternative 3 than under the proposed project.

6.5.2.9 Cultural and Scientific Resources

Alternative 3 includes the disruption or displacement of soils which has the potential to result in archeological or paleontological resources impacts. The areas anticipated to be disturbed under Alternative 3 have already been assessed and permitted at the landfills. Therefore, Alternative 3 would not result in new adverse impacts related to cultural and scientific resources.

6.5.2.10 Hazards

Under Alternative 3, hazardous material disposal would not be permitted at the landfills, which is the same as existing conditions at Orange County's landfills. The existing IWMD program to prevent hazardous wastes from entering landfills would continue under Alternative 3. There would be continued limited use of hazardous materials on-site such as fuels, oils and other materials used in the operation and maintenance of landfill equipment and vehicles. This creates the potential for spills and leaks of fuel, oils and other liquids which would be similar to existing conditions at the landfills and to the impacts under the proposed project. Therefore, potential impacts related to hazards would be similar under Alternative 3 and the proposed project.

6.5.2.11 Public Services

Similar to the proposed project, Alternative 3 would not involve significant adverse impacts to public services in Orange County because the landfilling activities will not increase the need for additional services. Therefore, no impacts related to public services are anticipated under Alternative 3.

6.5.2.12 Biological Resources

Alternative 3 has the potential to impact biological resources at FRB Landfill. However, the biological resources anticipated to be disturbed under Alternative 3 have already been assessed and permitted at the landfill. Therefore, Alternative 3 would not result in new adverse impacts related to biological resources.

6.5.3 SUMMARY OF ALTERNATIVE 3

Alternative 3 would result in impacts similar to the impacts under the proposed project. However, the incremental increase of in-flow waste stream at FRB Landfill, from 8,500 TPD to 9,500 TPD would result in greater impacts to transportation and circulation, air quality and noise under Alternative 3 than under the proposed project (as discussed above in Section 6.5.2).

6.6 ALTERNATIVES CONSIDERED BUT REJECTED

CEQA requires that an EIR address only those alternatives necessary to permit a reasoned choice. These alternatives must foster informed decision-making and public participation. The EIR must also provide the rationale for the selection or rejection of various alternatives.

The CEQA Guidelines state that an EIR should "…identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts."

The alternatives to the proposed expansion at Olinda Alpha Landfill which were considered but rejected and not evaluated in detail in this EIR are described in this Section. As discussed in Section 4.3 (History and Evolution of the Proposed Project), the RELOOC process consisted of not only a Feasibility Study, but an inter-governmental coordination process and public outreach program. The RELOOC Strategic Plan was formulated based on feedback on a variety options for waste disposal for Orange County. The options in the Feasibility Study that were not carried forward in the Strategic Plan are considered as alternatives to the proposed project that were rejected and not evaluated in detail in this EIR.

6.6.1 EARLY CESSATION OF MSW IMPORTATION FROM OUTSIDE THE COUNTY

As discussed under the existing conditions for Olinda Alpha Landfill, all three Orange County landfills are currently under contract to import MSW from San Diego, Riverside, San Bernardino and Los Angeles Counties. Cessation of these import activities could meet several of the project objectives.

The effects of importation were studied by the County to understand its role in capacity considerations at the Orange County landfills. Importation is a revenue generator from the tipping fees and is linked to the County's Plan of Adjustment [Bankruptcy] Recovery program. It is estimated that approximately 1,175,000 tons per year of import are deposited in Orange County's

landfills system-wide. Importation is scheduled to continue until 2015 when the importation agreements expire. If importation were to cease earlier than 2015 (the earliest estimate of when that could occur is 2005), the life span of the three County landfills is anticipated to be increased by just under three years assuming the annual system demand of 4,062,000 tons per year discussed in Section 4.3.1.2 (1,175,000 tons/yr [10 yrs] ÷ 4,062,000 tons/yr = 2.9 yrs). Therefore, cessation of importation does not address overall capacity needs because, while it does preserve some capacity, it does not preserve enough to address the County's future short and long term capacity needs.

In addition, discontinuing importation would constitute a change of conditions specified in bond documents and County Plan of Adjustment, necessitating a return to bankruptcy court. This would create the risk of an adverse effect on the County's bond ratings and possibly the need to defease the bonds. The fact that the tipping fee revenue from importation is a part of the County's Bond Recovery program makes the cessation of importation a complicated legal and fiscal matter, making the feasibility of this alternative uncertain. Therefore, an alternative to cease importation of MSW from outside Orange County was not evaluated in detail in this EIR.

6.6.2 RELOOC FEASIBILITY STUDY ALTERNATIVES

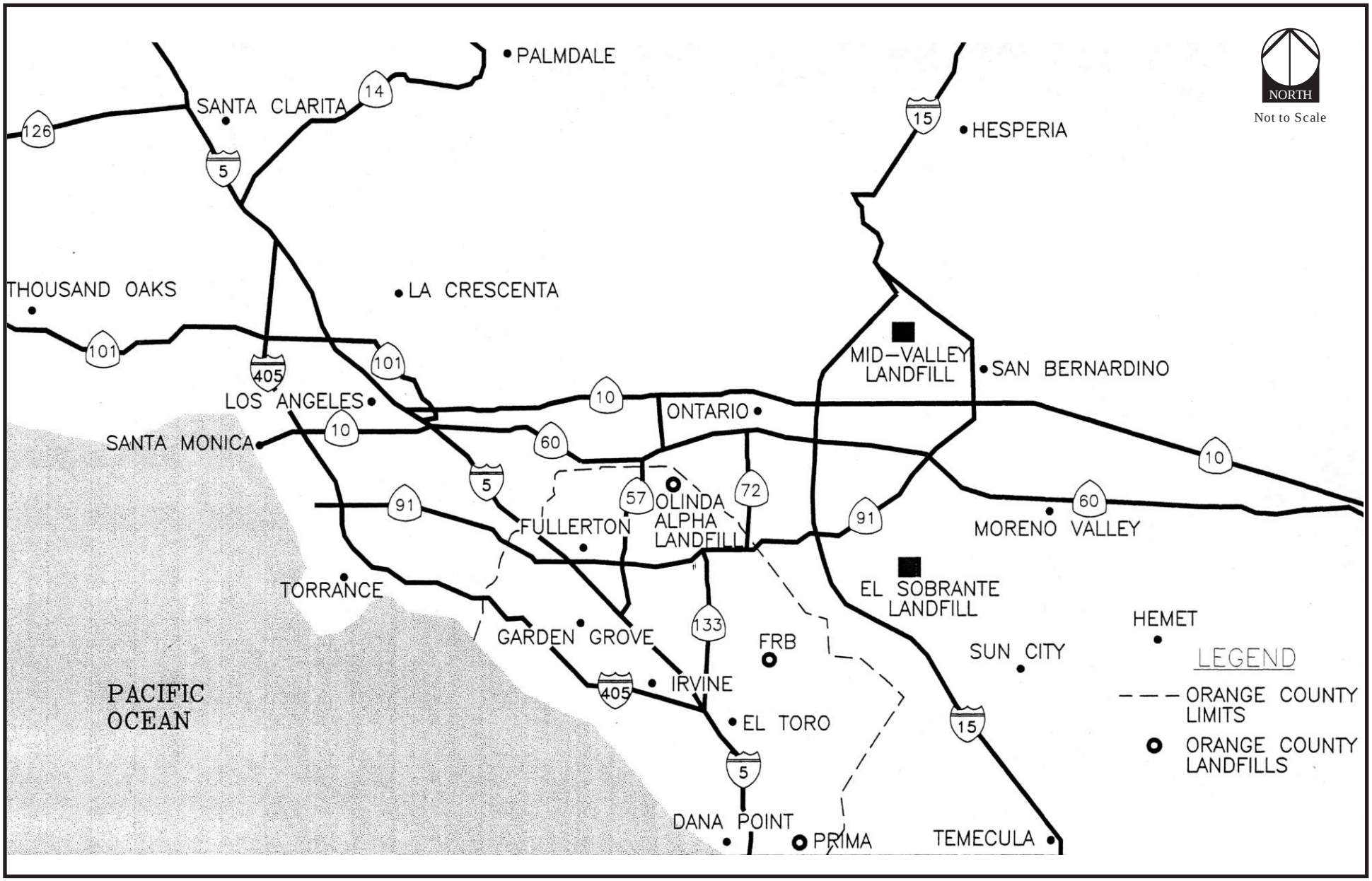
The RELOOC Strategic Plan recommendations were based on the RELOOC Feasibility Study which investigated a full range of disposal options for MSW disposal for Orange County including maximization of in-County capacity, out-of-County export, alternative disposal technologies and other possible programs that could accommodate the County's future waste disposal needs. Several of those options were incorporated in the RELOOC Strategic Plan including the proposed expansion of Olinda Alpha Landfill. A number of options were considered and rejected in that effort and are briefly described below along with the reasons why they were rejected as viable options for the County waste disposal needs and as alternatives to the proposed project at Olinda Alpha Landfill.

6.6.2.1 Export

Both truck and rail haul export are options for MSW disposal which the County of Orange may need to consider in the future once capacity at the three existing County landfills is exhausted. The cost for export versus maximizing the capacity of the existing County landfills was a serious factor is the consideration of export as either a short or long term solution for waste disposal options for the County. These options are described below, but were not carried forward in the RELOOC process because of cost, environmental and other considerations.

<u>Truck Export to Out-of-County Landfills</u>

Two landfills outside Orange County were evaluated for the possibility of accepting exported MSW from Orange County: Mid-Valley Sanitary Landfill in the City of Rialto and El Sobrante Landfill in unincorporated Riverside County. Both are operating Class III landfills similar to Olinda Alpha Landfill. The locations of these landfills are shown on Figure 6-1.



Source: Bryan A. Stirrat & Associates (2004).

Figure 6-1
Out-of-County Landfill Sites for Truck Export

Mid-Valley Sanitary Landfill (MVSL)

The MVSL is currently operating as a Class III, non-hazardous solid waste landfill in the City of Rialto in San Bernardino County. The existing landfill area covers 142 acres. An EIR evaluated expanding the landfill disposal area by 266 acres. The total landfill area, including the existing acreage and the proposed expansion, would be 408 acres. The EIR evaluated increasing the permitted average TPD limit to 7,500 maximum TPD. In 1998, the MVSL accepted an average of 880 TPD. In 1997, the permitted capacity of the MVSL was 24.4 million cubic yards (mcy). The EIR evaluated increasing the capacity of the MVSL to 82 mcy. The estimated average TPD that will be deposited in MVSl in 2006 is 3,027 TPD which is 973 TPD less than the daily capacity (4,000 TPD) evaluated in the EIR. This daily capacity limit will need to be revised if waste from Orange County is transported to this site. The estimated closure date assumed in the EIR for MVSL is 2036. (Source: Mid-Valley Sanitary Landfill Expansion Final Environmental Impact Report (January 29, 1998) and the Addendum to the Final EIR (June 1998)).

El Sobrante Landfill

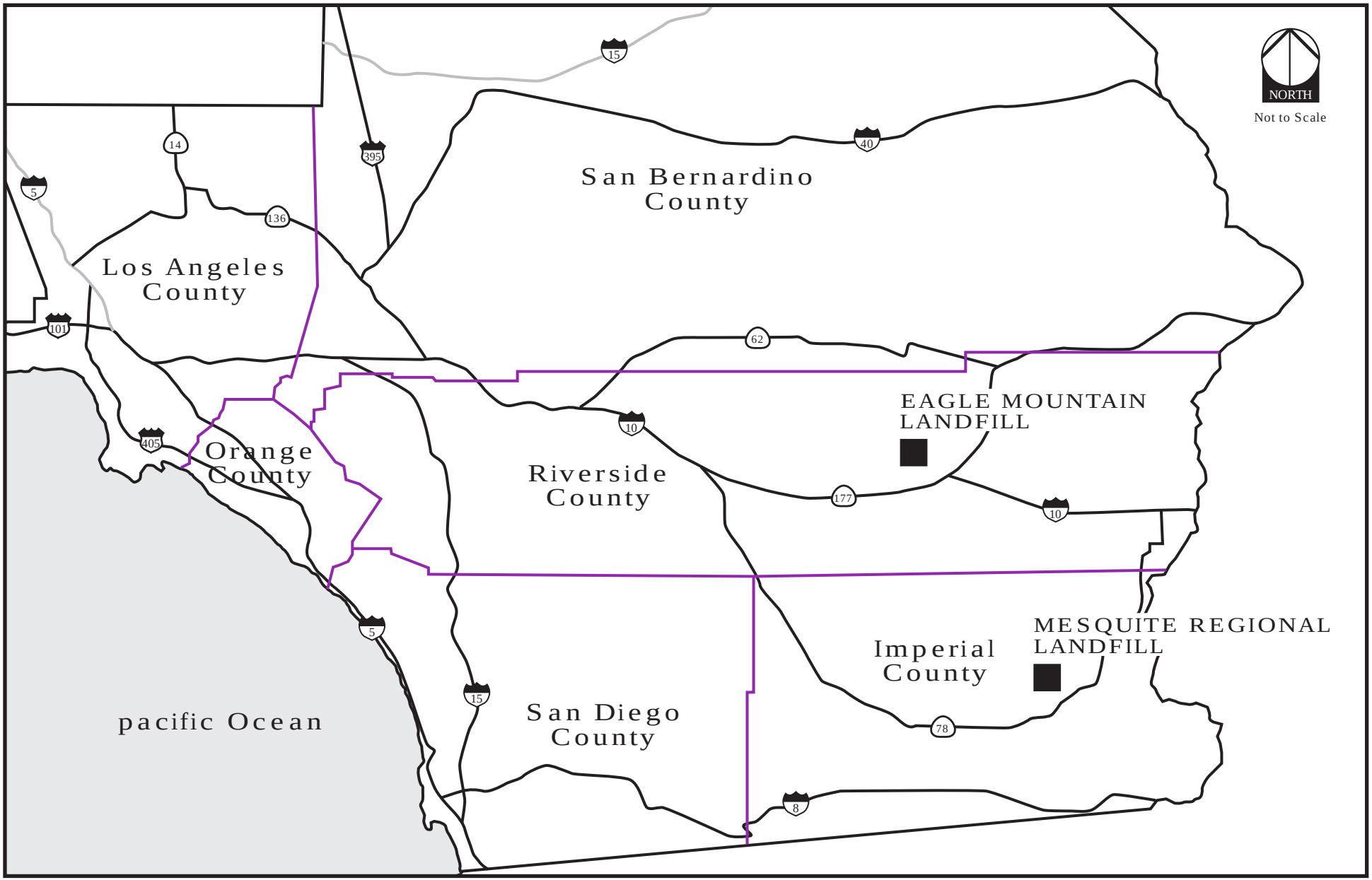
The El Sobrante Landfill, approximately two miles south of Lake Matthews in western Riverside County, is currently operating as a Class III, non-hazardous solid waste landfill. The existing landfill site described in that landfill EIR covered 1,322 acres. The 1,322 acres consisted of approximately 178 acres of landfill area and 1,144 acres of open space. In 1996, the landfill footprint occupied 90 acres of the total 178 acres planned for landfilling. The EIR evaluated the expansion of the graded footprint of the landfill to 656 acres and increasing the existing permitted daily capacity from 4,000 TPD to 10,000 TPD, for a net increase of 6,000 TPD. The EIR evaluated the expansion of the capacity of El Sobrante Landfill from the approximately nine million tons to 109 million tons, a net increase of 100 million tons. The El Sobrante Landfill is estimated to close in 2026. (Source: El Sobrante Landfill Expansion Final Environmental Impact Report (April 1996) and an Update to the final EIR (July 1998)).

Rail Haul Export to Distant Landfills

Two landfills some distance from Orange County were evaluated for the possibility of accepting exported Orange County MSW via rail haul: Eagle Mountain Landfill in eastern Riverside County and Mesquite Regional Landfill in Imperial County. These alternatives would involve the use of an inter-modal facility in the City of Industry as a waste transfer station where the waste for landfilling would be loaded on rail cars and exported to one of these two landfills. The locations of these two facilities is shown on Figure 6-2.

Eagle Mountain Landfill

This is a planned and fully permitted Class III, non-hazardous solid waste landfill in an unused, open pit mine on approximately 4,654 acres in Riverside County. Landfilling will occur on approximately 2,164 acres. The anticipated capacity of this landfill is 700 million tons. The anticipated maximum permitted capacity is up to 20,000 TPD with approximately 16,000 TPD delivered by rail and approximately 4,000 TPD by truck. The anticipated life of this landfill is 117 years.



Source: P&D Consultants (2004).

Figure 6-2
Out-of-County Landfill Sites for Rail Haul Export

The landfill project includes the existing 52 mile Kaiser-owned rail line, which extends from Rail Yard I on the landfill site to the existing Southern Pacific Transportation Company (SPTC) main line. An approximately five-mile long rail spur, extending from about the mid-point of the 52 mile long Kaiser line to Rail Yard II on the landfill site is also part of the project. As stated in the EIR/Environmental Impacts Statement (EIS) for this landfill, the majority of solid waste collected in population centers in the seven southern California Counties would be trucked to existing or future transfer stations/materials recovery facilities (MRFs). At these stations, recyclable materials and potentially hazardous materials would be removed for separate disposal. The resulting solid waste residue would be loaded into 20 to 53 foot long containers which will be loaded on rail cars for transport to Eagle Mountain Landfill. The rail cars would be covered to control litter, vectors and odor. Although not specified in the EIR/EIS, it is assumed that the majority of the rail transport would occur on the SPTC line. (Source: Eagle Mountain Landfill Project, Riverside County, California, Draft Environmental Impact Statement /Environmental Impact Report (July 1996)).

Mesquite Regional Landfill

This is a planned and fully permitted Class III, non-hazardous solid waste landfill on approximately 4,250 acres in Imperial County, with the landfill itself occupying approximately 2,290 acres. The anticipated capacity of this landfill is 600 million tons. The anticipated maximum permitted capacity is 20,000 TPD. The anticipated life of this landfill is 100 years.

The landfill project includes an approximately five-mile long railroad spur from the existing SPTC main line track to the landfill site. MSW collected in population centers in a seven County area would be trucked to existing or future transfer stations/MRFs. At these transfer stations, recyclable materials and potentially hazardous materials would be removed for separate disposal. The resulting MSW residue would be transported to an intermodal rail facility where it would be loaded on to rail cars for transport to Mesquite Regional Landfill. The rails cars would be approximately 40 feet long, have capacity for 25 tons of waste and would be covered to control litter, vectors and odor. At the maximum disposal rate of 20,000 TPD, five 16-car trains would serve the landfill each day. Truck delivery of solid waste to the landfill will not occur, except for certain circumstances, from Imperial County and in the event the SPTC tracks are closed temporarily as a result of an accident or damage to the tracks.

The EIS/EIR for this landfill assumed the existing SPTC Intermodal Station in the City of Industry would be used as the transfer station in early years of the operation of the landfill. The EIS/EIR further noted that waste loading could later be moved to Los Angeles Transportation Center or to other new intermodal facilities that may be constructed in the future. (Source: Final Environmental Impact Statement and Environmental Impact Report for the Proposed Mesquite Regional Landfill (June 1995) and two Addenda to the EIR (July 14, 1995 and September 10, 1996)).

6.6.2.2 Off-Site Alternative: New Landfill in Gypsum Canyon

Construction of a new landfill in Gypsum Canyon was evaluated. Gypsum Canyon is southeast of Olinda Alpha Landfill near State Route 91 and the Orange/Riverside County line. Gypsum Canyon is in private ownership. The area where the landfill would be located has been pre-zoned by the City of Anaheim for residential development making the entitled land prohibitively expensive for

acquisition. In addition, the site is not available for purchase by the County from the property owner. Therefore, this Alternative was not brought forward in the RELOOC Strategic Plan and was not considered further in this EIR.

6.6.2.3 Alternative Technology Assessment

The following alternative technologies were evaluated in the RELOOC Feasibility Study (report dated December, 2001):

- Bio-refining (the transformation of organic material to bio-fuels and bio-chemicals).
- Bio-diesel (the conversion of cooking oils to diesel fuel).
- Composting (the conversion of MSW for a soil additive).
- Anaerobic digestions (the conversion of organics to fuel gas, and fiber and liquid for a soil additive).
- Fixation (the chemical transformation of waste into inert construction products).
- Gasification (the thermal breakdown of waste to synthetic gas, ash, and water).
- Kinetic disintegration (the breakdown of waste by sound waves into aggregate and other products).
- Plasma arch technology (the thermal transformation of waste to gases and stable products).
- Pyrolysis (the thermal breakdown of waste in the absence of oxygen to gas, liquids, and solid products).
- Waste-to-energy (combustion of MSW, either mass-burn or RDF, for the creation of steam and electricity.

These technologies were researched and, with the exception of composting technologies, there was only one full scale, reference plant processing MSW in North America for any of the alternative technologies researched. That was an anaerobic digestion plant in Newmarket, Ontario which is designed to process 650 TPD. Therefore, while these technologies hold promise for the future, their application for use in Orange County at this time is speculative given the exclusivity of the technology application in the United States. Most of these alternative technologies have only been tested on small scale pilot projects which would not be applicable to the waste volume to be handled for Olinda Alpha Landfill or other Orange County landfills. Further discussion of the alternative technologies evaluated for RELOOC is included in the RELOOC Feasibility Study report available at IWMD's offices. Technologies resulting in more efficient use of the available capacity at the landfills continues to be studied, but as an adjunct to capacity needs not as an alternative to the proposed Olinda Alpha Landfill project.

6.6.3 NO BUILD ALTERNATIVE – PARK IMPLEMENTATION

As an extension of the No Project Alternative, this alternative examined the timing of implementation of the proposed Olinda Regional Park. This park is proposed on the landfill property, after the termination of landfilling activities and the closure of the landfill. While the proposed expansion would not change the ultimate use of the site as a passive use regional park, it would affect the timing of implementation of the regional park and trails accessing and crossing the site. This alternative is essentially an extension of the No Project Alternative which itself assumes closure of the landfill in 2013 and its reuse and conversion to passive use regional park use.

Section 15126.6(e)(3)(B) of the CEQA Guidelines states:

> "If the project is other than a land use or regulatory plan, for example a development project on identifiable property, the "no project" alternative is the circumstance under which the project does not proceed. Here the discussion would compare the environmental effects of the property remaining in its existing state against environmental effects which would occur if the project is approved. If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this "no project" consequence should be discussed. In certain instances, the no project alternative means "no build" wherein the existing environmental setting is maintained. However, where failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment."

The future plans for all the County landfills assume their development as regional parks after termination of landfilling activities and closure of the landfills. The landfill properties are identified as "Passive Use Regional Parks" on the County's Master Plan of Regional Recreational Facilities. The reason for the reuse of the landfill properties as regional parks is that after closure and reclamation occurs, these sites will be suitable for active and/or passive park uses. However, there is no deadline or dependency for these areas to be developed into regional parks by any particular date.

The proposed Olinda Regional Park (Olinda beta parcels) is discussed in the County of Orange Recreation Element Appendix VII-8 (Regional Recreation Facilities Inventory) as follows:

> "10. Olinda Disposal Site. Site currently owned by County and used for sanitary landfill, with ± 100 acres set aside in Brea Canyon. When current use is terminated, recommend conversion of the site to a restored natural regional park."

The 100-acre area in Brea Canyon (Olinda beta parcels) is shown as an existing regional park under the County's listing of existing facilities. However, this area will not be available for use as a park by the public for safety and security reasons until after closure of the landfill. In addition, no design plans or funding sources have been developed or identified at this time for this passive use regional

park. Implementation of the park assuming closure of Olinda Alpha Landfill in 2013 has not been planned or designed to date.

Development of the Olinda Alpha Landfill property as a regional park does not meet any of the project objectives defined in Section 4.6 and would result in the fiscal and environmental impacts described under the No Project Alternative in addition to the cost of park development, without the benefit of the offset from additional revenue from maximizing the use of Olinda Alpha Landfill. This Alternative was rejected for these reasons and, therefore, was not evaluated in detail in this EIR.

6.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table 6-1 shows a comparison of the environmental effects of the proposed project, the project alternatives and the No Project Alternatives. Each of the build alternatives would result in environmental impacts greater than would occur under the No Project Alternative. Therefore, the No Project Alternative is the environmentally superior alternative, although it would not meet project objectives as discussed earlier. Section 15126.6(e) of the CEQA Guidelines states that if the No Project Alternative is selected as the environmentally superior alternative, then the EIR shall also identify an environmental superior alternative among the other alternatives. Of the remaining alternatives, the proposed project is the environmentally superior alternative.

TABLE 6-1
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF ALL PROJECT ALTERNATIVES

Environmental Parameter	Proposed Project	No Project Alternative	Alternative 2	Alternative 3
Land Use and Planning	2	2	2	2
Geology and Soils	2	1	1	1
Hydrogeology and Water Quality	2	1	1	1
Surface Water Hydrology	2	1	1	1
Transportation and Circulation	2	2/3	2/3	2/3
Air Quality	2	2/3	2/3	2/3
Noise	2	2/3	2/3	2/3
Aesthetics	1	1	1	1
Cultural and Scientific Resources	2	2	2	2
Hazards	2	2	2	2
Public Services	1	1	1	1
Biological Resources	2	1	1	1

Legend
1. Insignificant or no impact.
2. Impact that can be mitigated to a level of insignificance.
3. Impact that can not be mitigated to a level of insignificance.
Source: P&D Consultants, Inc. (2004).

6.8 ABILITY OF THE ALTERNATIVE TO MEET THE PROJECT OBJECTIVES

As shown in Table 6-2, the only Alternative which meets all the project objectives is the proposed project. The No Project Alternative is the only alternative which does not meet any of the project objectives. Alternatives 2 and 3 meet all the project objectives except the objective to expand Olinda Alpha Landfill. However, Alternatives 2 and 3 do not meet the other project objectives to the same degree as the proposed project.

TABLE 6-2
ABILITY OF THE ALTERNATIVES TO MEET THE PROJECT OBJECTIVES

PROJECT OBJECTIVES	Proposed Project	No Project Alternative	Alternative 2	Alternative 3
	Does the Alternative meet the Project Objective?			
Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.	Yes	No	Yes	Yes
Ensure that the County's near term waste disposal needs are met.	Yes	No	Yes	Yes
Maximize capacity of the existing Olinda Alpha Landfill.	Yes	No	No	No
Maintain adequate revenue and local control of waste disposal to provide consistent and reliable public rates and fees.	Yes	No	No	No
Maintain efficient, cost effective and high quality IWMD operations.	Yes	No	Yes	Yes
Minimize adverse environmental impacts associated with MSW disposal.	Yes	No	Yes	Yes

Source: P&D Consultants, Inc. (2004).

SECTION 7.0
GROWTH INDUCING IMPACTS

SECTION 7.0
GROWTH INDUCING IMPACTS

7.1 DEFINITION OF GROWTH INDUCING IMPACTS

Section 15126.2(d) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) describe the potential growth inducing impacts of a proposed project. Specifically, Section 15126.2(d) states:

> "Discuss the ways in which the proposed project could foster economic development or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.... Also discuss the characteristics of some projects which may encourage and facilitate other activities that could substantially affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental or of little significance to the environment."

7.2 GROWTH INDUCING IMPACTS RELATED TO THE PROPOSED PROJECT

The number of employees at the Olinda Alpha Landfill will not change with implementation of the proposed project. Employees will continue to perform landfill operations including administration, landfill cover operations and other landfill-related operations. The number of pieces and types of equipment utilized at the Olinda Alpha Landfill would also remain unchanged.

The major extension of local infrastructure improvements such as water, sewer, natural gas and electrical lines or roads into undeveloped areas that previously did not have these improvements is an inducement to growth. In fact, development into new areas cannot occur without these improvements. However, the expansion of a solid waste landfill for a limited time period (i.e., eight-year extension) would not in itself be an inducement to growth. Local development will continue to occur with or without the landfill expansion. More distant landfills would be available to serve new development but at a potentially much greater financial cost. The improvements under the proposed project would not entail new residences or the extension of major infrastructure facilities (i.e., sewer, or water lines, roads, etc.) that would result in secondary or indirect growth in and around the area. Therefore, growth inducing impacts would not occur from the proposed project.

SECTION 8.0
CUMULATIVE IMPACTS

SECTION 8.0
CUMULATIVE IMPACTS

8.1 DEFINITION OF CUMULATIVE IMPACTS

Section 15130 of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) discuss cumulative impacts of a project when the project's incremental effect is potentially cumulatively considerable. As defined by the CEQA Guidelines, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR. To facilitate the discussion of potentially cumulative impacts that could result from implementation of the proposed project, each impact category evaluated in Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance After Mitigation) is addressed individually in this cumulative impacts analysis.

A simple comparison of the cumulative environment contrasted with the increment of impact on its face is not an adequate rationale for concluding that a project does not have a cumulative effect. This is known as the ratio theory approach. Neither is the one molecule rule of change or addition an appropriate standard, where any increment, no matter how small, would be considered cumulatively significant. The most current interpretation of the standard is whether "any additional amount of effect should be considered significant in the context of the existing cumulative effect" (*Communities For A Better Environment V. California Resources Agency,* 126 California Reporter, 2d. 441, Cal.App.3 Dist., 2002). The same case states further:

> "[T]his does not mean, however, that *any* additional effect in a nonattainment area for that effect *necessarily* creates a significant cumulative impact; the "one [additional] molecule rule" is not the law. …[t]he lead agency shall consider whether the cumulative impact is significant and whether the proposed project's incremental effects are cumulatively considerable."

The objective of cumulative impact analysis is to look at trends with regard to each environmental parameter and ensure that past, present and future projects in an area are aggregated to examine impacts in a big picture contextual approach. In the context of the proposed Olinda Alpha Landfill expansion there are conditions that must be considered in the local and, depending on the parameter, regional contexts of the project.

The cumulative impacts analysis provided here is consistent with the process contemplated by Section 15130(a) of the CEQA Guidelines in which the analysis of cumulative effects in an EIR is based on two determinations: Is the combined impact of this project and other projects significant? Is the project's incremental effect cumulatively considerable? The cumulative impact must be analyzed only if the combined impact is significant and the project's incremental effect is found to be cumulatively considerable (CEQA Guidelines 15130(a)(2) and (3). When an EIR determines that a cumulative impact is not significant, or that the project's incremental effect is not cumulatively considerable, the EIR should briefly describe the basis for that determination (CEQA Guidelines 15130(a)(2) and (3).

8.2 CUMULATIVE PROJECTS

As discussed in the previous section, one way to determine trends in an area for cumulative analysis is through an inventory of projects in the project study area which are in the process of, or which will be developed in the near future. The proposed expansion of Olinda Alpha Landfill is not proposed to change any aspect of the daily operations of or at the landfill. The relevant change with regard to cumulative impacts is the extension of landfilling operations from 2013 to 2021. Therefore, proposed development projects scheduled to develop post-2013 to 2021 were identified as the relevant cumulative projects for this analysis.

Approved and proposed development in the study area is expected be almost entirely completed by the post 2013 horizon operation extension of the landfill. Therefore, the City of Brea's General Plan (GP) was used as guidance on future development in the study area due to its horizon year of 2020 in lieu of the list approach. In addition, the Tonner Hills Planned Community (PC) was considered in this analysis, which is east of the landfill property, and is a recently approved residential community that is scheduled to be constructed between 2004 and 2014. This PC comprises 790 acres with 914 dwelling units, open space, mixed commercial uses and oil extraction. Because of the proximity of this future development to the landfill property, it is considered in some of this cumulative analysis.

8.3 CUMULATIVE IMPACTS ANALYSIS

8.3.1 CUMULATIVE IMPACTS RELATED TO LAND USE AND PLANNING

The proposed expansion of the landfill and the extension of the use of the landfill to 2021 would not result in any cumulative land use impacts. While development around the landfill property represents incremental growth of the area and the intensification of uses incumbent with that growth, the landfill operations would remain the same under both existing conditions and the proposed project. The only change is the landfilling operation would be to continue operations for an additional eight years beyond the previous 2013 closure date. The landfill property is designated as a public facilities use in both the County of Orange GP Land Use Element (LUE) and the City of Brea GP LUE. The extension of landfilling on the landfill property of an additional eight years would not have cumulative impacts on the planned land uses in the City or unincorporated area of Orange County.

8.3.2 CUMULATIVE IMPACTS RELATED TO GEOLOGY AND SOILS

The horizontal and vertical expansions of and the extended time period for landfilling operations will require additional fill/cover. This will require importing soil to the site after about 2015. Potential sources for this imported soil will be provided by existing commercial quarries. However, the demand for these cover soils will occur over a limited period lasting only until closure of the landfill in 2021. Soil sources are readily available to provide this material. Therefore, this effect is not considered cumulatively significant.

8.3.3 CUMULATIVE IMPACTS RELATED TO HYDROGEOLOGY AND WATER QUALITY

Section 5.3 (Hydrogeology and Water Quality) concluded that there is a potential for impacts to groundwater as a result of the proposed project. However, with implementation of the mitigation measures identified in Section 5.3, the impacts would be considered less than significant. Given that the LCRS for landfilling operations is subject to approval by the RWQCB-SA and must comply with federal and state requirements (27 CCR), no cumulatively considerable impacts would occur to groundwater as a result of the proposed project.

8.3.4 CUMULATIVE IMPACTS RELATED TO SURFACE WATER HYDROLOGY

Section 5.4 (Surface Water Hydrology) concluded that there is a potential for impacts to surface flow as a result of the proposed project. However, with implementation of the mitigation measures identified in Section 5.4, the impacts would be considered less than significant. Given that the drainage facilities for the landfill expansion will be designed, constructed and operated to accommodate the anticipated volume of precipitation and peak flows from surface run-off under the precipitation conditions specified in Title 27 of the CCR, no cumulatively considerable impacts would occur to surface water as a result of the proposed project. The landfill expansion will continue to operate under an NPDES Permit to discharge storm flows. The project will comply with the criteria and restrictions of the NPDES Permit and the SWPPP and BMPs that accompany that permit.

8.3.5 CUMULATIVE IMPACTS RELATED TO TRANSPORTATION AND CIRCULATION

As discussed in Section 5.5 (Transportation and Circulation), the daily operations at Olinda Alpha Landfill would not change (i.e. no change in traffic volume associated with the landfill operations would occur), but the interval of time over which those operations occur would be extended. The traffic analysis in Section 5.5 included background traffic and growth based on the buildout of the Brea GP and is consistent with the assumptions of the future circulation system at buildout (the year 2025 in the GP). Therefore, the traffic analysis in Section 5.5 is already inclusive of the cumulative projects and growth in the area through 2021. Refer to Section 5.5 for cumulative traffic impacts.

8.3.6 CUMULATIVE IMPACTS RELATED TO AIR QUALITY

Emissions associated with cumulative construction are based on the quantity and types of construction equipment working concurrently on any given day during project construction. Estimates of when and what types of equipment used for construction of projects in the local area are extremely speculative. The combined emissions from concurrent construction of cumulative projects would likely exceed the SCAQMD thresholds and would result in a significant adverse air quality impact.

During the operational phase of the project, air pollutant emissions would exceed the SCAQMD operational phase thresholds. As such, the project is considered by the SCAQMD to be a significant source of emissions. Because the South Coast air basin is in nonattainment for ozone and fine

particulate matter (PM10) and the proposed project exceeds the SCAQMD thresholds, project emissions would contribute to the nonattainment of these pollutants and thereby result in a significant cumulative impact to air quality.

8.3.7 CUMULATIVE IMPACTS RELATED TO NOISE

Because the project expansion area is at least 4,250 feet from the nearest off-site sensitive uses, noise associated with construction and daily operations on the project site would have little or no cumulative noise impacts on off-site uses.

Off-site landfill-related traffic, including heavy-duty waste/refuse trucks, would contribute to potentially significant noise impacts due to the 10 to 12 dBA difference with project traffic over the no project scenario. However, existing and proposed homes along the access roads, including Valencia Avenue north of Carbon Canyon Road, have or would be required (by the City of Brea) to have a sound wall along their property line for their outdoor living area so that the 65 dBA CNEL standard is not exceeded. In addition, traffic noise at homes or other sensitive uses along Imperial Highway leading to the project site are or will have been mitigated through sound wall implementation associated with the Imperial Highway Smart Street project. Therefore, no significant cumulative noise impacts are anticipated from the proposed project.

No significant vibration impacts were identified for both on-site operations and off-site truck traffic. Therefore, no significant cumulative vibration impacts would occur.

8.3.8 CUMULATIVE IMPACTS RELATED TO AESTHETICS

As discussed in Section 5.7 (Aesthetics), the proposed project would not result in significant adverse impacts to visual resources or viewsheds after mitigation. Some of the landfilling operations will be visible for short periods of time and as soil stockpiling and grading operations occur, exposed soil will be visible from off-site areas. This will occur with or without the proposed project. The extension of the use of the landfill for landfilling will result in delay in the final revegetation and reclamation of the site by eight years. This additional period of visible operations and exposed soil contributes to the overall aesthetic environment of the area. This contribution is not cumulatively considerable, as it will be mitigated through interim landscaping on-site. Therefore, the project would have no cumulatively adverse impacts related to aesthetics.

8.3.9 CUMULATIVE IMPACTS RELATED TO CULTURAL AND SCIENTIFIC RESOURCES

Section 5.8 (Cultural and Scientific Resources) concluded there was a very low likelihood for finding significant resources on the site. Precautionary mitigation measures were added to the project and described in Section 5.8 to ensure that any previously unknown resources on the site would be protected should they be discovered during grading operations. Given the low likelihood of resources being on-site and the fact that other projects in the area are typically subject to similar protective mitigation for cultural and paleontological resources, no cumulatively considerable impacts would occur to these resources as a result of the proposed project.

8.3.10 CUMULATIVE IMPACTS RELATED TO HAZARDS

Only municipal solid waste (MSW) is accepted at Olinda Alpha Landfill, although limited special wastes (i.e., tires) also are accepted. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted. The landfill operates under existing regulations related to hazardous materials and has standard procedures in the event of hazards which could affect the site such as fire or earthquake. These practices would continue under the extension of landfill operations for an additional eight years for the vertical and horizontal expansions. Additionally, there are no nearby uses which, when considered with the landfill operations, increase any hazard risks on-site or to areas surrounding the landfill property. Therefore, there are no cumulatively considerable impacts on hazards from the expansion of the landfill and the extension of its operations.

8.3.11 CUMULATIVE IMPACTS RELATED TO PUBLIC SERVICES

The current operations of Olinda Alpha Landfill have minimal reliance on public services. The landfill itself provides a public service and operates in a fairly self-contained manner including on-site fire suppression facilities. As other development in the area occurs, fire and other public services will be expanded to ensure public safety and efficient emergency response times. The extended landfill operations would not increase any demand for public services. While demand for public services in the project area is expected to increase with development, the proposed landfill expansion project does not contribute to that demand and, therefore, does not have cumulatively considerable impacts to public services. As stated in the IS under Section 16 (Utilities and Service Systems), the proposed expansion will provide additional capacity for MSW.

8.3.12 CUMULATIVE IMPACTS RELATED TO BIOLOGICAL RESOURCES

As discussed in Section 5.11 (Biological Resources), the proposed project would not result in significant adverse impacts to biological resources after mitigation. As other development in the area occurs, such as Tonner Hills PC and Olinda Ranch, the potential for cumulative impacts related to biological resources is increased. According to the Tonner Hills PC Draft EIR, that project would result in a beneficial impact for the California gnatcatcher and the least Bell's vireo by resulting in a net increase of 19.5 acres of coastal sage scrub and 2.49 acres of southern arroyo willow woodland. The Tonner Hills PC in conjunction with the landfill expansion, would not contribute to adverse impacts to biological resources. The City of Industry owns 2,423 acres of open space to the north of the landfill that will be utilized for municipal use. This area includes Upper and Middle Tonner Canyon, which composes the Puente-Chino Hills wildlife corridor. Municipal use of this area may contribute to the potential for cumulative impacts related to biological resources in the region.

While development in the project area is expected to increase, the proposed landfill expansion would not contribute to cumulative adverse impacts related to biological resources.

SECTION 9.0
IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

SECTION 9.0
IRRETRIEVABLE AND IRREVERSIBLE COMMITMENT OF RESOURCES

Section 15126.2(c) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR) discuss significant adverse irreversible environmental changes that would be caused by implementation of the proposed project. In addition, irretrievable commitments of resources should be evaluated. Implementation of the proposed project would result in both short and long term commitments of natural resources.

Construction of the proposed project would require the commitment of a relatively small amount of building materials because the nature of the project improvements is mostly a cut and fill process. During the construction and operation of the expansion at the landfill, there would be an irretrievable commitment of resources such as gasoline, diesel fuel and electricity for the operation of construction equipment such as bulldozers, graders, trucks, dump trucks and generators. Because these types of resources are anticipated to be in adequate supply into the foreseeable future, these impacts are not considered significant.

SECTION 10.0
UNAVOIDABLE ADVERSE IMPACTS

SECTION 10.0
UNAVOIDABLE ADVERSE IMPACTS

This Section summarizes the unavoidable adverse impacts associated with proposed project. Specifically, Section 15126(b) of the California Environmental Quality Act (CEQA) Guidelines requires that an Environmental Impact Report (EIR):

> "Describe any significant impacts, including those which can be mitigated, but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance) documents the analysis of the potentially significant adverse impacts associated with the project. The proposed project will result in an unavoidable adverse air quality impact after mitigation as noted in the analysis in Section 5.0.

As described in Section 5.6, Air Quality, construction of the proposed project will result in short-term significant adverse impacts associated with exceeding the AQMD thresholds for PM_{10}. Therefore, during construction, this will be an unavoidable significant adverse impact of the proposed project related to air quality.

The operation of the proposed project will result in a long-term significant adverse impact associated with exceeding the AQMD thresholds for NO_x, ROC and CO. Therefore, during operations, this is considered to be a significant unavoidable adverse impact of the proposed project related to air quality.

Construction and operation of the proposed project will likewise result in an unavoidable significant impact to air quality.

SECTION 11.0
INVENTORY OF MITIGATION MEASURES

SECTION 11.0
INVENTORY OF MITIGATION MEASURES

This Section provides a complete inventory of the mitigation measures developed in response to the findings of the impacts analysis in Section 5.0 (Existing Conditions, Impacts, Mitigation Measures and Level of Significance). These mitigation measures will form the basis for the Mitigation Reporting and Monitoring Program for the proposed project. The agency responsible for the implementation of these mitigation measures is the County of Orange Integrated Waste Management Department (IWMD).

11.1 MITIGATION MEASURES FOR LAND USE AND PLANNING

LU-1 Prior to acquiring revised landfill permits and finalization of design plans for the project, the County of Orange and the City of Brea will renegotiate the details of the MOU to allow the disposal of MSW over a longer period of time. Under the proposed project, closure would be extended to approximately 2021 based on increasing the site's air space capacity and increased operational efficiencies, current population projections and existing disposal technologies.

11.2 MITIGATION MEASURES FOR GEOLOGY AND SOILS

G-1 Prior to construction of the lateral expansion area, additional geologic data will be obtained and subsequent slope stability analyses will be conducted to verify assumptions made for the stability analysis included in Appendix L.

G-2 Geologic mapping will be conducted during construction to identify any changes in geologic structure that may impact the stability analysis conducted for the lateral expansion design.

11.3 MITIGATION MEASURES FOR HYDROGEOLOGY AND WATER QUALITY

HW-1 A composite liner or an alternative to the prescriptive composite liner and LCRS will be placed in the lateral expansion area to intercept and collect leachate for disposal off-site or use as dust control, as approved by the RWQCB-SA. A subdrain system will be installed, as necessary, to intercept seeps below the liner. The prescriptive or alternative liner, LCRS and subdrain will be approved by the RWQCB-SA and comply with federal and state requirements (27 CCR).

HW-2 The site will continue to comply with the site's Waste Discharge Requirements and Monitoring and Reporting Program requirements imposed by the RWQCB-SA for the protection of water quality.

HW-3 The Corrective Action System in place at the landfill will continue operating during the extended landfill operations if detections of VOCs in groundwater continue.

11.4 MITIGATION MEASURES FOR SURFACE WATER HYDROLOGY

H-1 As part of a Joint Technical Document (JTD) to be prepared by IWMD in support of a revised SWFP and WDRs for the proposed expansion, the IWMD shall present the assumptions, methods and calculations used to calculate the potential flow quantities for run-on, run-off and sediment content of storm water flow used in sizing drainage and sediment control facilities for Olinda Alpha Landfill in conformance with 27 CCR regulations.

H-2 As part of a JTD to be prepared by IWMD in support of a revised SWFP and WDRs for the expansion, the IWMD shall include surface drainage plans for Olinda Alpha Landfill expansion final grading plans, including any berms, down drain systems, perimeter drainage channel improvements and the location of off-site discharge points for run-off water in compliance with 27 CCR regulations.

H-3 Diversion and drainage facilities shall be evaluated, designed, constructed and operated to accommodate the anticipated volume of precipitation and peak flows from surface run-off under the precipitation conditions specified in Title 27 of the CCR. Drainage facilities for the landfill expansion shall be designed to prevent washout of the waste management unit during a 100-year storm event.

H-4 The landfill (including the expansion area) will continue to operate under an NPDES Permit to discharge storm flows. The criteria and restrictions of the NPDES Permit and the SWPPP and BMPs that accompany the NPDES Permit will be adhered to.

H-5 Positive drainage will be ensured in the expansion area by maintaining a two to three percent slope on all landfill deck surfaces.

H-6 During all landfilling operations in the expansion area, sediment and erosion control plans will continue to be prepared and implemented on an annual basis to reduce sediment and control erosion on the landfill site.

11.5 MITIGATION MEASURES FOR TRANSPORTATION AND CIRCULATION

T-1 Imperial Highway at Valencia Avenue. IWMD will contribute a 9.2 percent fair share of the cost to modify the southbound Valencia Avenue approach at Imperial Highway. The fair share allocation is a standard County RDMD guideline for intersections operating at a LOS E without a project and LOS F with a project as the LOS is unacceptable. Under both scenarios, IWMD will contribute its fair share to the incremental impact to the southbound Valencia Avenue approach at Imperial Highway which would change that LOS E to LOS F (Refer to Appendix F-9 for supporting calculation sheets).

The proposed modifications include one additional southbound left turn lane and re-configuration of the rest of the southbound lanes (i.e. one through and one right turn lane) to one through lane and one optional through/right lane. This measure can be accomplished with re-striping only and with no additional street widening.

This improvement will result in an ICU of 0.836 (LOS D) with mitigation compared to an ICU of 0.981 (LOS E) without mitigation.

T-2 Imperial Highway and Kraemer Boulevard. IWMD will contribute a 100 percent fair share to the cost to modify the eastbound Imperial Highway approach at Kraemer Boulevard. The 100 percent fair share allocation is a standard County RDMD guideline for intersections operating at a LOS D without a project (an acceptable LOS) and LOS E with a project (an unacceptable LOS). Since the projected traffic associated with the Olinda Alpha Landfill expansion project, on its own, would cause the LOS D at the Imperial Highway and Kraemer Boulevard intersection to operate at LOS E, IWMD will contribute 100 percent of the cost to improve the LOS to an acceptable LOS D.

The proposed modifications are to provide an eastbound right turn only lane. This mitigation measure requires widening on the south side, relocation of street light poles and other street furniture.

11.6 MITIGATION MEASURES FOR AIR QUALITY

AQ-1 Applicable dust suppression techniques from Rule 403 are summarized below. Additional dust suppression measures in the SCAQMD CEQA Air Quality Handbook are also included as part of the project's mitigation. Implementation of these dust suppression techniques will reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules will reduce impacts on nearby sensitive receptors.

Applicable Rule 403 measures:

a. Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).

b. Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earth moving).

c. All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114 (freeboard means vertical space between the top of the load and top of the trailer).

d. Pave construction access roads at least 100 feet onto the site from main road.

e. Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

Additional SCAQMD *CEQA Air Quality Handbook* dust measures:

a. Revegetate disturbed areas as quickly as possible.

b. All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 miles per hour (mph) and dust plumes are visible.

c. All on-site streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).

d. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

AQ-2 Dust generated by the construction activities shall be retained on-site and kept to a minimum by following the dust control measures listed below.

a. During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 miles per hour.

c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

e. Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped or maintain 6 inches of freeboard from the point of origin.

11.7 MITIGATION MEASURES FOR NOISE

N-1 During all project site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

N-2 The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active construction areas.

N-3 The construction contractor shall locate equipment staging in areas to result in the greatest distance between construction related noise sources and noise sensitive receptors nearest the active construction areas during all project construction.

N-4 The construction contractor shall restrict all construction-related activities that would result in high noise levels between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

N-5 For residential units on Valencia Avenue north of Carbon Canyon Road which are approved prior to any approval of an expansion at Olinda Alpha Landfill, which are constructed and occupied before 2013 and which would be impacted by 65 dBA CNEL or higher traffic noise, the County of Orange IWMD will contribute a fair share to a road noise reduction program for these residences, if such a program is implemented by the City of Brea. This program could potentially implement a variety of road noise reduction measures which may include reduction in road speeds on the segment of Valencia Avenue north of Carbon Canyon Road, construction of sound walls adjacent to the affected residences and/or installation of rubberized asphalt concrete on Valencia Avenue north of Carbon Canyon Road.

11.8 MITIGATION MEASURES FOR AESTHETICS

AS-1 The existing Olinda Alpha Landfill Landscape Master Plan (LMP) that was developed in concert with IWMD and the City of Brea Citizens Advisory Committee in 1994 to address minimization of interim and permanent visual impacts will be revised to include the proposed vertical and horizontal expansion. The current seed mixes in the LMP will be identified for use on the appropriate areas of the expansion. The revised LMP will execute the original goal of blending the landfill property with the adjacent native open space area. The revised plan will be approved by IWMD and the City of Brea and will be included in the Closure Plan for the site as part of the SWFP and WDR revision application.

The phased interim landscape plan included as part of the LMP will be revised to continue visual screening of the landfill operations and facilities for the expansion and to assist in blending the manufactured slopes with surrounding open space prior to landfill closure.

AS-2 All outdoor lighting, including any construction-related lighting, shall be designed, installed and operated in a manner that ensures that all direct rays from project lighting are contained within the landfill property, and that residences and undeveloped areas that may provide wildlife value are protected from spillover light and glare.

11.9 MITIGATION MEASURES FOR CULTURAL AND SCIENTIFIC RESOURCES

C-1 The construction bid package, related construction and design plans, and specifications shall require that if buried cultural material is encountered during project construction, the County's construction contractor shall immediately stop work in the area. Work shall be halted until the County can retain a qualified archaeologist, and the nature and significance of the find are determined. If significant archaeological material is found, it

shall be salvaged and collected in compliance with all applicable regulations and sent to a designated museum.

C-2 If human remains are encountered during project construction, the County's construction contractor shall immediately stop work in the area. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

C-3 A Paleontological Resources Impact Mitigation Program (PRIMP) will be implemented. The PRIMP shall include, but not be limited to, the following: paleontological monitoring, preparation of any collected specimens to the point of identification, curation of specimens to a museum or similar institution and preparation of a mitigation report documenting any findings.

11.10 MITIGATION MEASURES FOR HAZARDS

No mitigation is required.

11.11 MITIGATION MEASURES FOR PUBLIC SERVICES

No mitigation is required.

11.12 MITIGATION MEASURES FOR BIOLOGICAL RESOURCES

B-1 Prior to the removal of the 1.3 acres of coast live oak, IWMD shall prepare and submit a Mitigation Monitoring and Reporting Program (MMRP) to the CDFG for review and approval. In accordance with an approved MMRP, IWMD will replace the 1.3 acres of coast live oak woodland at a 1:1 ratio (or as otherwise approved by the CDFG). The location of coast live oak plantings on the landfill will be determined in consultation with CDFG and a qualified ecologist. However, if the ultimate location of these replacement oaks are within the disposal area of the landfill, the RWQCB-SA will need to approve the plan to ensure that the tree root system does not compromise landfill operations and/or closure (final cover) requirements.

B-2 Prior to the removal of the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, IWMD shall prepare and submit a Coastal Sage Scrub Mitigation Plan (CSSMP), to the CDFG for review and approval. In accordance with an approved CSSMP, the IWMD will replace the 4.0 acres of CSS and the 10.4 acres of cut/slope revegetation, which provide marginally suitable habitat for the California gnatcatcher, at a 1:1 ratio (or as otherwise approved by the CDFG). Guidelines for the CSSMP are:

- The mitigation areas/sites shall have been evaluated and selected on the basis of their suitability for use as coastal sage scrub revegetation areas. The parameters evaluated shall include but not be limited to soil conditions, slope aspect, proximity to adjacent coastal sage scrub, level of difficulty of site preparation, and ownership status.

- The mitigation plan shall provide procedures to prepare the soils in the mitigation area, provide detailed seeding/planting mixtures, provide seeding/planting methods and provide any other procedures that will be used for successful revegetation.

- Maintenance and monitoring goals shall be established.

SECTION 12.0
LIST OF PREPARERS

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LIST OF PREPARERS

12.1 COUNTY OF ORANGE

Ray Hull, Manager, Strategic Projects
John Arnau, Environmental Planner
Bob Richmond, Environmental Planner

12.2 P&D CONSULTANTS, INC. (EIR)

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Christine Huard-Spencer, Senior Environmental Planner
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Romi Archer, Environmental Planner
Jerry Flores, Environmental Analyst
Kim Quinn, Environmental Analyst
Anne Pietro, Environmental Planner
Jennifer Hobbs, Environmental Scientist
Tin Cheung, Environmental Scientist
Daryl Fisher, Word Processing
Jeff Post, Graphic Artist

12.3 BRYAN A. STIRRAT & ASSOCIATES (Project Description, Hydrogeology and Water Quality, Surface Water Hydrology, Transportation and Circulation, and Alternatives)

Bryan A. Stirrat, President, PE
Christine M. Arbogast, Vice-President Solid Waste Division, PE
Doug MacPherson, Senior Traffic Engineer
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12.4 LSA ASSOCIATES, INC. (Noise, Air and Cultural Resources)

Tony Cheung, Principal
Steve Conkling, Certified Paleontologist

12.5 GEOLOGICS ASSOCIATES (Geology and Soils Technical Analysis)

Gary Lass, President, RG, CEG, CHG
Mark W. Vincent, Senior Geologist, RG, CEG
Robbie M. Warner, Senior Engineer, PE

SECTION 13.0
REFERENCES

SECTION 13.0
REFERENCES

The following references were used in this preparation of the Environmental Impact Report (EIR) for the proposed project:

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APPENDIX A
INITIAL STUDY/ENVIRONMENTAL CHECKLIST AND NOTICE OF PREPARATION (NOP)

INITIAL STUDY

PROJECT TITLE: Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Olinda Alpha Landfill Implementation

LEAD AGENCY: County of Orange Integrated Waste Management Department

INITIAL STUDY NUMBER: 588

LEAD DIVISION: Office of Public Affairs

PROJECT CONTACT: Linda Hagthrop, Public Information Officer **PHONE:** (714) 834-4176

PROJECT LOCATION: The proposed project is within the Olinda Alpha Landfill located at 1942 North Valencia Avenue in unincorporated Orange County adjacent to and within the sphere of influence of the City of Brea. The Olinda Alpha Landfill is generally bounded by Lambert Road to the south and Valencia Avenue to the southwest. The Olinda Alpha Landfill is located on the following assessor parcels: 308-031-3, 7, 8, 9, 14, 15, 17, 22, 30, 31 and 308-021-3, 4, 12, 14.

PROJECT DESCRIPTION: The Regional Landfill Options for Orange County (RELOOC) is a long-range strategic planning program initiated by the County of Orange Integrated Waste Management Department (IWMD). The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long-term solid waste disposal options for the County. As part of that endeavor, the County is proposing short-term improvements to an existing municipal solid waste landfill operated by the County's IWMD. The proposed project includes the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's short-term solid waste disposal needs.

DECISION-MAKER: County of Orange Board of Supervisors

RESPONSIBLE/TRUSTEE AGENCIES INVOLVED:

Federal Agencies

U.S. Environmental Protection Agency (EPA).

State Agencies

California Integrated Waste Management Board.
California Water Resources Control Board.

Regional Agencies

Regional Water Quality Control Board - Santa Ana Region.
South Coast Air Quality Management District.

County Agencies

Orange County Health Care Agency (Solid Waste Local Enforcement Agency).
Orange County Board of Supervisors.
Orange County Fire Authority.
Orange County Planning Department.

City Agencies

City of Brea.

LAND USE ENTITLEMENT SUMMARY:

General Plan Land Use Designation:

Olinda Alpha Landfill

County of Orange designation - Public Facilities/Landfill Site (4(LS)).
City of Brea designation - Sanitary Landfill.

Zoning:

Olinda Alpha Landfill

County of Orange designation – General Agricultural (Public Facilities).
City of Brea designation – No zoning designation.

PREVIOUS ENVIRONMENTAL DOCUMENTATION:

Olinda Alpha Landfill:

Final EIR 523 for the North Orange County Landfill and Alternative Technologies Study (NOCLATS)

INITIAL STUDY DATE: January 8, 2004.

ENVIRONMENTAL ANALYSIS CHECKLIST

EIR Number 588 for the RELOOC Strategic Plan - Olinda Alpha Landfill Implementation Project

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
1. LAND USE & PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
2. AGRICULTURE. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒
3. POPULATION & HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
4. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☒	☐	☐	☐
ii) Strong seismic ground shaking?	☒	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
iv) Landslides?	☒	☐	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
5. HYDROLOGY & WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Have a significant adverse impact on groundwater quality or otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
6. TRANSPORTATION/CIRCULATION. Would the project:				
a) Result in an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
g) Conflict with adopted policies, plan or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☒
7. AIR QUALITY. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
8. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a private or public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working the project area to excessive noise levels?	☐	☐	☐	☒
9. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?	☐	☐	☐	☒
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
10. AESTHETICS. Would the project:				
a) Have a substantial adverse effect a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
11. CULTURAL/SCIENTIFIC RESOURCES, Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse changed in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
12. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
13. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒
14. HAZARDS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
i) Include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?	☐	☐	☐	☒
15. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☒	☐	☐	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☒	☐	☐	☐
v) Other public facilities?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
16. UTILITIES & SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state and local statutes and regulations related to solid waste?	☐	☐	☐	☒
MANDATORY FINDINGS				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have possible environmental effects, which are individually limited but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
c) Does project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly	☒	☐	☐	☐

DETERMINATION:
Based upon the evidence in light of the whole record documented in the attached environmental checklist explanation, cited incorporations and attachments, I find that the proposed project:

COULD NOT have a significant effect on the environment, and a negative declaration (ND) will be prepared pursuant to CEQA Guidelines Article 6, 15070 through 15075. ☐

COULD have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures have been added to the project. A negative declaration (ND) will be prepared pursuant to CEQA Guidelines Article 6, 15070 through 15075. ☐

MAY have a significant effect on the environment, which has not been analyzed previously. Therefore, an environmental impact report (EIR) is required. ☒

Signature: _____

Planner: John Arnau
Environmental Services
Telephone: (714) 834-4107

NOTE: All referenced and/or incorporated documents may be reviewed by appointment only, at the County of Orange Integrated Waste Management Department, 320 N. Flower Street, Fourth Floor, Santa Ana, California, unless otherwise specified. An appointment can be made by contacting the CEQA Contact Person identified above.

Revised 2-5-03

ENVIRONMENTAL ANALYSIS CHECKLIST
Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation

1.0 LEAD AGENCY

The County of Orange will serve as the lead agency for the proposed Regional Landfill Options for Orange County (RELOOC) Strategic Plan - Olinda Alpha Landfill Implementation and the County's Integrated Waste Management Department (IWMD) will act as the designated lead agency in preparing notices, conducting public hearings and implementing California Environmental Quality Act (CEQA)-related processing requirements.

1.1 Discretionary Approvals

A number of discretionary approvals will be required as part of the project's approval and implementation. These discretionary approvals will be required from a variety of agencies and are anticipated to include the following:

County of Orange
- Certification of the Environmental Impact Report
- Grading permits.

California Regional Water Quality Control Board
- Storm Water Management Plans
- Revision to Waste Discharge Requirements

California Integrated Waste Management Board and Local Enforcement Agency (County of Orange Health Care Agency)
- Revision to Solid Waste Facility Permit.

South Coast Air Quality Management District
- Permits to construct – Gas Control Systems.
- Permits to Operate – Gas Control Systems.

City of Brea
- Amendment to the current Memorandum of Understanding (MOU)

2.0 PURPOSE OF THE ENVIRONMENTAL ANALYSIS CHECKLIST

The purpose of this Environmental Analysis Checklist (EAC) is to provide preliminary analysis of potential environmental consequences that may result with the implementation of the

proposed project. The IWMD has prepared this EAC to determine the appropriate level of environmental documentation needed for this project. IWMD has determined the appropriate level of environmental documentation needed for this project. IWMD has determined that an Environmental Impact Report (EIR) will be prepared for the proposed project based on the anticipated impacts. Although Section 15063 of the CEQA Guidelines indicates that a Lead Agency may bypass the preparation of an Initial Study (i.e., EAC), IWMD has chosen to prepare and circulate this EAC to more precisely disclose potential impacts and thereby obtain more specific guidance from responsible agencies and the public on the scope and topics to be covered in the EIR.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental parameters may be potentially affected by implementation of the proposed project:

Land Use and Planning	Noise
Geology and Soils	Aesthetics
Hydrology & Water Quality	Cultural/Scientific Resources
Transportation/Circulation	Hazards
Air Quality	Public Services

A preliminary evaluation of potential impacts is provided below. A more detailed analysis will be contained in the EIR.

4.0 ENVIRONMENTAL ANALYSIS

This section of the EAC analyzes the potential for significant environmental impacts that may result from the proposed project. The format for this analysis is based on the enclosed Environmental Analysis Checklist.

For the evaluation of potential impacts, the questions in the checklist are stated and an answer is provided reflecting the analysis conducted for this impact. To each question, there are four possible responses:

- *No Impact* – The proposed project will not have a measurable impact on the environment.
- *Less than Significant Impact* – The proposed project will have the potential for impacting the environment but at a level less than the significance criteria used to evaluate the impact.
- *Less than Significant with Mitigation* – The proposed project will have a significant impact unless mitigation measures are implemented to reduce the impact to a less than significant level.
- *Potential Significant Impact* – The proposed project will have impacts considered significant and either (1) additional analysis is needed to identify specific mitigation

measures to reduce this impact to a less than significant level, (2) feasible mitigation measures are not available to reduce this impact to a less than significant level, or (3) the impacts associated with the project are not known at this time and further analysis in an Environmental Impact Report (EIR) is warranted.

NOTE: The Olinda Alpha Landfill is deliberately designed and operated in a manner that avoids and mitigates potential environmental impacts, and it is the intent of IWMD to continue this practice in the design of the proposed project. However, in keeping with the purpose of this NOP, even though an environmental issue identified in the checklist is anticipated to be satisfactorily mitigated in the future, the box "Potential Significant Impact" has been checked rather than "Less than Significant with Mitigation." This is to inform the NOP recipient that the issue will be described and analyzed in the forthcoming Draft EIR, and to invite comments from Responsible Agencies and interested parties on how the assessment of the issue should be addressed in the document and how mitigation or avoidance of the issue should be incorporated into the project.

1. Land Use and Planning

Would the project: (a) Physically divide an established community?

No Impact. The Olinda Alpha Landfill is an existing landfill. The proposed vertical and horizontal expansion of this landfill would not extend beyond the property boundary of this site and therefore would not result in the disruption or division of the physical arrangement of an established community.

Would the project: (b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating and environmental effect?

Potential Significant Impact. The Olinda Alpha Landfill is located in unincorporated Orange County and is designated as a 4(LS) in the County of Orange General Plan. This designation allows for the use of this site for municipal solid waste (MSW) disposal. The County Public Facilities Zoning designation for this site also allows for use of the site for MSW disposal. The landfill is also located in the City of Brea's Sphere of Influence and is designated in the City's General Plan as a Public Facility which allows for the use of this site for MSW disposal. The proposed project would not conflict with the City's existing General Plan land use designation because the proposed expansion activities would occur entirely within the existing landfill boundaries. Nor would the proposed project conflict with the County or City's existing General Plan designations.

The existing MOU between the City of Brea and the County of Orange regarding the operation of Olinda Alpha Landfill would require renegotiation to allow the disposal of MSW over a longer period of time resulting from the additional capacity that is provided under the proposed project. The existing MOU identifies the landfill closure date established as 2013. Under the proposed project, closure would be extended to 2021 based on increased operational efficiencies, current population projections and existing disposal technologies.

Would the project: (c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There are no known City of Brea environmental plans or policies that would be adversely affected by the proposed project. The vertical and horizontal expansion of Olinda Alpha Landfill would not result in development outside of the existing landfill boundary. The Olinda Alpha Landfill is not located within a designated Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) area.

2. Agriculture

Would the project: (a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The vertical and horizontal expansion of Olinda Alpha Landfill will not impact any Prime, Unique or Farmland of Statewide Importance. There are no existing agricultural preserves on the site or the expansion area, and no preserves will be impacted under the proposed project. Existing roads will be used to haul MSW to the Olinda Alpha Landfill. No new roads and/or modifications to existing roads are proposed. Therefore, the proposed project will not result in impacts related to the conversion of farmlands listed as Prime, Unique or Farmland of Statewide Importance to non-agricultural uses.

Would the project: (b) Conflict with existing zoning for agriculture use, or a Williamson Act contract?

No Impact. The proposed project would not result in the cancellation of any Williamson Act contracts or conflict with any existing zoning for agricultural uses.

Would the project: (c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill will not result in the conversion of agricultural land to non-agricultural use. There is no agriculture land within the horizontal expansion areas of the existing landfill property. The proposed project would not involve changes in the existing equipment that due to their location or nature could result in conversion of farmland to non-agricultural uses.

3. Population and Housing

Would the project: (a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?

No Impact. The proposed project will continue operations at Olinda Alpha Landfill. None of the improvements under the proposed project would entail new homes or extending any major infrastructure (i.e., sewer or water lines, roadways, etc.) that could support additional development beyond the individual landfill site boundaries. Employment associated with landfill operations will be drawn from existing onsite employment. There may be brief temporary periods requiring additional personnel, such as during site development activities. No substantial new employment will be generated by the proposed project that could potentially contribute to additional demand for housing or services in the surrounding area.

Would the project: (b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project will not result in the removal or demolition of any existing housing. The proposed project would not entail the displacement of a substantial number of houses since no housing currently exists on-site or is proposed.

Would the project: (c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project will not result in the removal or demolition of any existing housing. The proposed project would not entail the displacement of a substantial number of people since no housing currently exists on-site or is proposed.

4. Geology and Soils

Would the project result: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:(a)(i) Rupture of a known earthquake fault; (a)(ii) Strong seismic ground shaking; (a) (iii) Seismic-related ground failure, including liquefaction; (a)(iv) Landslides?

*Potential Significant Impact***.** The Olinda Alpha Landfill is located immediately north of the active Whittier fault. The project site is located in southern California, an area known to be geologically active and which is subject to seismic events. The soils underlying the Olinda Alpha Landfill site include soils of the Cienaba Association and are underlain by Puente Formation bedrock, both units are locally prone to landslides. The vertical and horizontal expansion of the landfill will result in changes in topography and will be designed to meet stringent landfill regulatory requirements for seismic stability in the California Code of Regulations (CCR), Title 27.

Would the project: (b) Result in substantial soil erosion or the loss of topsoil?

Potential Significant Impact. The soils underlying the Olinda Alpha Landfill site have some potential for erosion. The proposed vertical and horizontal expansion of this landfill will result in changes of topography because of grading and filling on-site. Erosion control measures and facilities (i.e. desilting basins, straw bales, and vegetation) are implemented as part of normal landfill operations in accordance with regulatory requirements in CCR, Title 27. These measures are also proposed for the vertical and horizontal expansion.

Would the project: (c) Be located on a geologic unit or soil that is unsuitable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Potential Significant Impact. The proposed vertical and horizontal expansion of the landfill will result in changes of topography because of grading and filling on-site. These changes will be designed to meet stringent landfill regulatory requirements for stability in the CCR, Title 27.

Would the project: (d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant Impact. Some of the soils underlying the Olinda Alpha Landfill site and the horizontal expansion area have a moderate to high shrink-swell potential. Although considered to be expansive soils, the soils at the site would not create a substantial risk to life or property.

Would the project: (e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?

No Impact. The vertical and horizontal expansion of the Olinda Alpha Landfill does not propose the use of septic tanks.

5. Hydrology & Water Quality

Would the project: (a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The Olinda Alpha Landfill is approved under the Waste Discharge Requirements (WDRs) issued by the Regional Water Quality Control Board (RWQCB) and is designed to comply with water quality standards and waste discharge requirements. Semi-annual water quality testing at the landfill is conducted for volatile organic compounds (VOC), minerals, total dissolved solids (TDS), potential of hydrogen (pH), electrical conductivity (EC), nitrates and metals. Groundwater is extracted, treated, and reused on-site. Any modification of the existing landfill design will require coordination with the Landfill Section of the RWQCB to revise the existing National Pollutant Discharge Elimination System (NPDES) permit and WDRs for the Olinda Alpha Landfill in accordance with Federal and State requirements for the protection of water quality.

Would the project: (b) Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of a local groundwater table level?

No Impact. The proposed project does not include any components that would result in groundwater extraction. The horizontal and vertical expansion and associated drainage patterns will channel runoff downstream to the existing detention basins. The reduction in recharge at the horizontal and vertical expansion areas is not anticipated to substantially reduce recharge in the

regional groundwater basin. Moreover, the proposed project would not result in significant adverse impacts related to groundwater depletion that would contribute to a net deficit in aquifer volume or a lowering of a local groundwater table.

Would the project: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in manner which would result in: (c) Substantial erosion or siltation on- or off-site; (d) flooding on- or off-site; (e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. The proposed project would not substantially alter the existing drainage pattern of the site or area. The project will continue to operate as a solid waste landfill. The existing storm water control system consisting of a network of drainage channels, berms, interceptor ditches and sedimentation basins will be extended, as necessary, to control any additional runoff and erosion associated with the proposed project. The concrete-lined sedimentation basins are sufficiently sized to accommodate storm water drainage associated with existing and future landfill operations. Collected silt is cleaned out of the sedimentation basins at the end of the rainy season.

The continued operation and expansion of the Olinda Alpha Landfill will result in an increase in excavation and grading, potentially causing increases in erosion and runoff. Vertical and horizontal expansion of Olinda Alpha Landfill will modify the surface hydrology and change stormwater runoff rates on this site. The change in stormwater runoff is not expected to be substantially different from the existing condition and is not anticipated to result in flooding on or off-site. Off-site discharge will be controlled to only release pre-development condition flows during a storm event. The proposed project will not impact the capacity of existing or planned stormwater drainage systems off-site.

Would the project: (f) Have a significant adverse impact on groundwater quality or otherwise substantially degrade water quality?

Less than Significant Impact with Mitigation. The proposed project would result in the approximately 115-foot vertical and 33-acre horizontal expansion at the Olinda Alpha Landfill site. The landfill expansion must be designed, operated and monitored to preclude any significant impacts to groundwater resources or water quality. In addition, the vertical and horizontal expansion must be approved under WDRs issued by the RWQCB.

Would the project: (g) Place housing within a 100 year flood hazard area; (h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

No Impact. The proposed project does not include the development of housing or structures that would be located within a 100-year flood hazard area.

Would the project: (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or (j) Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project is not anticipated to result in any impacts related to flooding as a result of the failure of a levee or dam, inundation by seiche, tsunami or mudflow.

6. Transportation and Circulation

Would the project: (a) Result in an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system?

Potential Significant Impact. Olinda Alpha Landfill is currently permitted to process a maximum of 8,000 tons per day (TPD) of MSW although this landfill is currently restricted to an annual average of 7,000 TPD consistent with the memorandum of understanding (MOU) with the City of Brea. In 2003, the Olinda Alpha Landfill received an annual average daily tonnage of approximately 6,800 TPD. The proposed expansion of Olinda Alpha Landfill includes no increase in the maximum permitted TPD. However, additional soil import trucks would access the site by 2017 at which time refuse importation truck traffic would cease resulting in no substantial increase in truck traffic. Therefore, the proposed project would not result in increased vehicle trips beyond traffic forecasts assumed for the currently approved annual average of 7,000 TPD and would not result in more trips than currently experienced at Olinda Alpha Landfill. However, the proposed project would result in vehicle trips for a longer period of time than is currently permitted or planned which may result in traffic congestion beyond adopted policies and forecasts anticipated.

Would the project: (b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Potential Significant Impact. The Orange County Congestion Management Program (CMP) Highway System designated roads in the vicinity of Olinda Alpha Landfill include Valencia Avenue, Carbon Canyon Road, and Imperial Highway. The intersections of Imperial Highway/Valencia Avenue and Imperial Highway/Rose Drive are CMP intersections. The proposed project, in combination with cumulative projects, may result in exceeding the level of service (LOS) standards on designated CMP roads or intersections.

Would the project: (c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The Olinda Alpha Landfill is outside the defined airspace of any airport. The proposed expansion at Olinda Alpha Landfill would not result in changes in air traffic patterns. Because the proposed expansion will not generate demand for air passenger or cargo trips, the expansion will not result in changes in air traffic levels in this area. Therefore, the proposed project will not result in adverse impacts related to air traffic patterns.

Would the project: (d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

No Impact. Access to Olinda Alpha Landfill is provided via existing public and private roads, designed to local jurisdictions' standards, which are suitable for use by waste disposal trucks. Private access roads provide connections from public roads to and onto this landfill site. These access roads are adequate for use by waste disposal trucks. These private access roads are restricted to use by waste disposal vehicles, landfill employee vehicles, and vehicles operated by the public. The proposed vertical and horizontal expansion do not include road improvements or the use of vehicles not compatible with public and private access roads serving the landfill. Therefore, expansion of Olinda Alpha Landfill will not result in impacts related to safety hazards from design features or incompatible uses.

Would the project: (e) Result in inadequate emergency access?

No Impact. Access to Olinda Alpha Landfill is provided via public and private roads. Private roads provide connections from public roads (namely Valencia Avenue) to and onto the landfill site and are restricted to use by waste disposal vehicles, landfill employee vehicles, and public vehicles. Emergency vehicles can use these private roads if necessary to respond to fire, medical, or police emergency. Consistent with the California Vehicle Code and local restrictions, trucks using public roads to access the landfill do not block emergency vehicles and do not block access to adjacent uses. At the landfill, trucks do not queue off the landfill site and therefore, do not block emergency access in the area. On the landfill site, truck queuing is managed to ensure that emergency vehicles can access the site, if necessary. The proposed vertical and horizontal expansions do not include any features that would alter traffic operations onto or off the landfill site. Therefore, expansion of Olinda Alpha Landfill will not result in adverse impacts related to emergency access or access to other land uses.

Would the project: (f) Result in inadequate parking capacity?

No Impact. Parking for employees and vehicles waiting for inspection or to deposit loads is currently provided on the Olinda Alpha Landfill site. In the event that additional parking is temporarily needed as a result of the proposed vertical and horizontal expansion, it also would be provided on the landfill site. No off-site parking will be required. Therefore, the proposed vertical and horizontal expansion at Olinda Alpha Landfill will not result in any impacts related to inadequate parking capacity.

Would the project: (g) Conflict with adopted policies, plan or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

No Impact. Trucks transporting solid waste to Olinda Alpha Landfill, including the areas for the proposed vertical and horizontal expansion, would operate on public roads consistent with laws and regulations controlling vehicle traffic, similar to existing conditions associated with trucks currently accessing the landfill. Alternative modes, including rail, bus, transit, bicycling, carpooling, and vanpooling would not be adversely affected by these truck operations on public roads. Therefore, the proposed vertical and horizontal expansion at Olinda Alpha Landfill would not result in conflicts with adopted policies regarding alternative transportation.

7. Air Quality

Would the project: (a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The proposed project would not result in an obstruction to the implementation of the 2003 Air Quality Management Plan.

Would the project: (b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation; (c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment?

Potential Significant Impact. The entire South Coast Air Basin (SCAB) is designated as a national-level extreme non-attainment area for ozone, meaning that national ambient air quality standards are not expected to be met until beyond 2010, and a non-attainment area for CO and PM_{10}. The proposed project would extend the operational life of the Olinda Alpha Landfill by means of vertical and horizontal expansion at this landfill. However, this would not result in an increase in the daily maximum or annual tonnage volumes of MSW deposited at the landfill. The proposed project would not change the number of trucks currently accessing the site each day, the number of vehicle miles traveled (VMT) by project-related vehicles, or the number of vehicles and equipment working on the active landfill face. However, an increase in the duration of emissions generated during the operation of the project would occur due to the extension of the site's closure date. In addition, an increase in landfill gas would occur due to the larger quantity of landfill space created by the project. The landfill will be collecting landfill gas and will be maintaining a landfill gas collection and control system. No substantial modifications to existing support structures at the landfill are anticipated under the proposed project. Because landfill operations are not anticipated to change substantially with the exception of landfill gases, air pollutant emissions associated with the proposed expansion would not change substantially from existing conditions. However, the project, in combination with cumulative projects, may result in a potential significant impact to air quality.

Would the project: (d) Expose sensitive receptors to substantial pollutant concentrations?

Potential Significant Impact. The expansion of Olinda Alpha Landfill would increase the potential for windblown dust in the local area. However, SCAQMD rules 402 and 403 governing nuisance and dust emissions would regulate dust emissions.

The proposed project will not result in new truck trips or impact areas not currently affected by landfill operations. The project would not expose sensitive population groups to pollutants in excess of acceptable levels beyond existing conditions, although the existing sources of air pollutants would continue for a longer time frame. For those projects in the area near the landfill that are planned but are not yet constructed, an extension of the operational life of the landfill could expose future sensitive receptors to substantial pollutant concentrations.

Would the project: (e) Create objectionable odors affecting a substantial number of people?

Potential Significant Impact. Though the air pollutant emissions due to vehicles exhaust from waste haulers would remain the same, the volume of MSW within the Olinda Alpha Landfill would increase due to the extension in capacities and operating period at the landfill. This increase in the volume of MSW would result in greater methane generation from the decomposition of organic solid waste materials. In addition, odor impacts may result from waste-hauling vehicles transporting solid waste to the site.

8. Noise

Would the project result in: (a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; (b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels; (c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; (d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potential Significant Impact. The proposed project would extend the operating life of Olinda Alpha Landfill through vertical and horizontal expansion. However, this would not increase the daily maximum or annual tonnage volumes of MSW deposited in the landfill on a daily basis. In addition, no change in the number of trucks accessing the landfill each day or the number of vehicles and equipment working on the active landfill face would occur. As such, the proposed project is not anticipated to significantly increase noise levels. However, noise from landfill operations currently experienced would be prolonged over the extended life of the landfill, as opposed to landfill related noise ceasing after the landfill closure under the current closure date (2013). In addition, the project, in combination with cumulative projects, could result in noise impacts.

Would the project: (e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a private or public airport or public use airport would the project expose people residing or working in the project area to excessive noise levels; (f) For a project within the vicinity of a private airstrip, would the project expose people residing or working the project area to excessive noise levels?

No Impact. The Olinda Alpha Landfill is not within two miles of an existing public airport and is not within an adopted Airport Land Use Plan. Therefore, the landfill will not result in exposure of people in this area to excessive noise levels.

9. Biological Resources

Would the project: (a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?

No Impact. The vertical and horizontal expansion of Olinda Alpha Landfill would have no impact on endangered, threatened or rare species or their habitats since the proposed expansion does not extend into any previously undisturbed areas on-site. The field survey conducted by P&D's biologist concluded that there is no suitable habitat in the area of the proposed expansion. In addition, no new infrastructure and/or expansions of the existing infrastructure to support the proposed project are required. Cover material for the expansion will be obtained from designated stockpiles or will be imported to the landfill from off-site sources.

Would the project: (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?

No Impact. The vertical and horizontal expansion at Olinda Alpha Landfill would have no impact on any riparian habitat or other sensitive natural communities. The proposed expansion will only extend into areas that previously have been disturbed. No expansion of the existing infrastructure is required to support the proposed project. Cover material for the proposed expansion will be obtained from designated stockpiles or will be imported to the site from off-site sources.

Would the project: (c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The proposed vertical and horizontal expansion of Olinda Alpha Landfill would not impact wetlands or other watercourses subject to regulatory control since none are located on-site and no expansion activities are planned for off-site areas.

Would the project: (d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill is not expected to impact wildlife movement or migration patterns through wildlife corridors. No disturbance along the ridgeline east of the horizontal expansion area is proposed. However, landfill operations may generate dust, noise, or light emissions that could potentially disturb wildlife behavior, including possible shifts in the use of the eastern ridgeline. The majority of wildlife movement through and near the landfill occurs after dark. Since operations at the landfill cease at dark, no impacts to wildlife dispersal or migration through wildlife corridors will occur.

Would the project: (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill would not have an impact on locally designated species. The County of Orange has no officially adopted heritage tree ordinance or policy. Therefore, the proposed project would not result in impacts to locally designated species.

Would the project: (f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Olinda Alpha Landfill is not within an approved NCCP/HCP Reserve System and therefore, would not impact any NCCP/HCP areas.

10. Aesthetics

Would the project: (a) Have a substantial adverse effect upon a scenic vista?

Potential Significant Impact. The proposed Olinda Alpha Landfill will largely be accommodated on the same footprint as the existing landfill, with the exception of the relatively small area of the horizontal expansion. Most of the Olinda Alpha Landfill has been graded and/or excavated for landfill purposes and most of the area has been filled with MSW, covered and in some areas vegetated. The existing Olinda Alpha Landfill is visible from locations in the extreme north part of Carbon Canyon Regional Park and the northwest part of Chino Hills State Park that is open or planned to be open to the public. The expanded landfill also will be visible from these areas. Views of the expanded landfill would be similar to views of the permitted landfill except that the final elevation of the landfill will be higher. It is anticipated that once the landfill is closed and vegetated that the visual effect of the landfill expansion on these public views would be reduced.

Would the project: (b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Potential Significant Impact. Olinda Alpha Landfill is visible from Carbon Canyon Road. In the Open Space and Conservation Element of the City of Brea General Plan, this road is given special consideration. Development immediately adjacent to Carbon Canyon Road must be screened to soften its presence. The City suggests that vertical trees, shrub planting and walls/ berms be used where necessary for sound attenuation. The edge of Olinda Alpha Landfill is set back from Carbon Canyon Road approximately one-half mile and the Olinda Ranch residential development is between the landfill and Carbon Canyon Road. Landscape screening has been provided by Olinda Ranch along Carbon Canyon Road. The vertical expansion of Olinda Alpha Landfill will be accommodated on the same footprint as the existing landfill. Under the proposed expansion, the final landfill elevation will be higher than currently permitted and, therefore, more of the landfill may be visible from Carbon Canyon Road beyond the residences in the Olinda Ranch Development.

Would the project: (c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Potential Significant Impact. The proposed vertical and horizontal expansion of the Olinda Alpha Landfill largely will be accommodated on the same footprint as the existing landfill. Most of the Olinda Alpha Landfill site has been graded and/or excavated for landfill purposes and part of the area has been filled with MSW and covered. These developed landfill areas contrast with the adjacent undeveloped land in both form and color. The symmetrical shape of the constructed fill is distinct from the undisturbed adjacent ridges and the earth-toned graded areas contrast with nearby native vegetation. The color contrast is most apparent in the spring when new vegetation is green and is less vivid during the summer and fall when adjacent coastal sage scrub vegetation is more muted in color. The currently permitted landfill, including some graded and filled areas, is visible from the following locations: points along State Routes 55, 57 and 91 (SR 55, SR 57 and SR 91); Lambert Road and Carbon Canyon Road; the extreme north edge of Carbon Canyon Regional Park which is southeast of the landfill; elevated areas in the northwest part of Chino Hills State Park; and elevated areas of Brea and Los Angeles County north of the landfill.

Land uses in Chino Hills east and northeast of this landfill do not have views of the currently permitted landfill and will not have views of the proposed expansion because of intervening topography. Some land uses at higher elevations in Diamond Bar may have glimpses of the ultimate height of the current landfill beyond the ridges at the edge of the landfill. These locations will see slightly more of the landfill as a result of the proposed vertical expansion. Views of the landfill with the proposed vertical expansion will be similar to views under the current permit, except that the landfill would be higher (by 115') with the vertical expansion and, therefore, more of the landfill will be visible. This site is currently an operating landfill and views under the proposed vertical expansion will be similar to views under the permitted landfill. However, more of the landfill may be visible to land uses that would have views of the currently permitted landfill. Land uses that do not have views of the currently permitted landfill may have views of the expanded landfill because of the increased height.

Would the project: (d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

No Impact. Potential light and glare impacts associated with the expansion of Olinda Alpha Landfill would be the same as existing impacts associated with the permitted landfill. Sources of light at this landfill, including lighting for access roads, parking areas, buildings and security, would not change appreciably under the proposed expansion. Therefore, there would be no impacts related to light and glare associated with the expansion at Olinda Alpha Landfill.

11. Cultural/Scientific Resources

Would the project: (a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. No historic resources have been documented or discovered on the Olinda Alpha Landfill site. Therefore, no historic resources will be impacted by the proposed expansion.

Would the project: (b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. The proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations. No impacts to known archaeological resources would occur. The majority of the proposed expansion area has been previously surveyed and there are no known archaeological sites within the existing site boundary.

Would the project: (c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation. Although the proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations, rare paleontological specimens have been found at the site. The IWMD provides archaeological /paleontological monitoring services during construction to recover any paleontological resources specimens that may be discovered in the future**.** These resources are preserved in accordance with the County of Orange which enforce Standard Conditions of Approval that require paleontological monitoring during construction.

Would the project: (d) Disturb any human remains, including those interred outside of formal ceremonies?

No Impact. The proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations. No known human remains would be disturbed by the proposed project.

12. Recreation

Would the project: (a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The vertical and horizontal expansion of the Olinda Alpha Landfill would not entail the construction of residential or commercial land uses that would result in an increased use of area parks or recreational facilities by employees. The proposed project also would not increase the number of employees at Olinda Alpha Landfill because the average daily TPD limit will not be increased at the landfill. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Would the project: (b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project does not propose the construction of additional recreational facilities either on or off site at the Olinda Alpha Landfill. Therefore, the proposed project will not result in adverse impacts related to the provision of recreation resources. Olinda Alpha Landfill's ultimate land use is a passive regional park.

13. Mineral Resources

Would the project: (a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The California Department of Mines and Geology (CDMG) has classified the Olinda Alpha Landfill site as Mineral Resource Zone (MRZ-1) which indicates that adequate information exists to indicate that no significant mineral deposits are presently or likely to be present for this site. Therefore, the proposed project will not result in impacts related to known mineral resources of possible state or regional value.

Would the project: (b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, Specific Plan or other land use plan?

No Impact. There are no significant mineral deposits documented on the Olinda Alpha Landfill site and this site is not identified as an important mineral resource recovery site. Therefore, the proposed vertical and horizontal expansion of this existing landfill will not result in the loss of availability of a locally important mineral resource recovery site delineated on local plans.

14. Hazards

Would the project: (a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials; (b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potential Significant Impact. The Olinda Alpha Landfill is a certified Class III landfill that does not accept hazardous, radioactive or explosive wastes for on-site disposal. There is an IWMD program in place at the Olinda Alpha Landfill to prevent hazardous wastes from entering the landfill and to ensure landfill workers are protected from potentially hazardous substances. This includes visual inspection of loads at the fee booths and the active face of the landfill and the rejection of loads containing hazardous wastes. Studies on the composition of MSW indicate the amount of hazardous wastes contained in MSW is small and is not likely to pose a threat of exposure to the public. However, landfill activities at Olinda Alpha Landfill under the proposed project would continue to be monitored by personnel trained to inspect incoming refuse and waste being deposited on the active landfill face to identify and remove potentially hazardous wastes.

Hazardous materials used on-site would be handled according to existing state and federal regulations and would be limited to fuels, oils and other materials used in the operation and maintenance of landfill equipment and vehicles. The operation and refueling of heavy construction equipment does have the potential to result in spills and leaks of fuels, oils and other liquids. Vehicles used in existing landfill operations are maintained and fueled on-site. A vehicle maintenance facility services the equipment, including oil changes, fueling and other typical maintenance activities. Waste oil currently is collected in a non-site storage tank and is emptied and hauled away by a certified commercial hauler. Disposal of waste oil, either in a certified landfill or by recycling, is the responsibility of the waste hauler. The use of hazardous materials and

generation of hazardous wastes would continue under these existing on-site programs over the extended life of the Olinda Alpha Landfill. The nearest existing and/or planned residential use is approximately 0.3 mile from the existing boundary of Olinda Alpha Landfill. Similar to existing conditions, no hazardous wastes would be disposed of at the landfill under the proposed project.

Would the project: (c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing or proposed schools within one-quarter mile of Olinda Alpha Landfill and no hazardous wastes will be disposed of in this landfill under the proposed project. The existing landfill design, including methane gas collection and groundwater monitoring facilities, would ensure that the landfill is operated in a safe and sanitary manner. Therefore, the proposed expansion will not result in impacts related to hazardous emissions within one-quarter mile of a school near Olinda Alpha Landfill.

Would the project: (d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Olinda Alpha Landfill project site is not listed as a hazardous materials site. The landfill accepts only Class III municipal solid wastes.

Would the project: (e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Olinda Alpha Landfill is not within an airport land use plan or within two miles of a public airport or public use airport based on review of area maps. Therefore, the proposed project will not result in adverse impacts related to aviation safety hazards for people residing or working in the project area.

Would the project: (f) For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips in the immediate vicinity of Olinda Alpha Landfill. Therefore, the proposed project would not result in significant adverse impacts related to safety hazards for people residing or working in this area.

Would the project: (g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evaluation plan?

No Impact. The City of Brea has an Emergency Response Plan and an Emergency Evacuation Plan which was adopted in 1991. An updated Emergency Response and Evacuation Plan were approved by the State in December 2003, and will be updated by the City of Brea in January 2004. The City of Brea does not service unincorporated areas of Orange County. However, the Olinda Alpha Landfill designated evacuation routes include streets within the City of Brea.

Olinda Alpha Landfill is in unincorporated Orange County adjacent to the City of Brea. The County has adopted an Emergency Response Plan and an Emergency Evacuation Plan for all unincorporated areas. The Emergency Evacuation Plan was updated in October 2003 and the Emergency Response Plan will be updated in February 2004. The designated emergency routes from the landfill are through the City of Brea.

Would the project: (h) Expose people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact. The Olinda Alpha Landfill site is located within a Very High Fire Hazard Area as designated on the City of Brea General Plan Draft EIR, Wildland Fire Hazard Areas Map. There is a remote possibility of fire at Olinda Alpha Landfill from combustible refuse, vegetation or litter being ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles. However, this potential risk is addressed in the design and daily operations of this landfill. Landfilling under the proposed project is not anticipated to have a significant impact on the occurrence of wildland fires in the area.

The landfill may be subject to surface fires started by burning waste material deposited on the working landfill face. Should this occur, the fire would be limited to the materials deposited prior to the daily application of cover materials, as fire will not generally propagate through cover soil. The Orange County Fire Authority has procedures for the prevention of fires at waste disposal sites. Current practices at this landfill to reduce the potential for fire and for rapid control of fires, should they occur, include keeping fire extinguishers on-site, frequent site watering for dust control, on-site water storage, prohibiting smoking on-site, clearing vegetation and fire breaks.

All landfills contain combustible materials and insulating characteristics and can, under certain conditions, facilitate subsurface combustion. Subsurface fires can occur as combustible materials in refuse are heated, either through burial of hot loads with other refuse or through an aerobic decomposition process. Because combustion requires a continuous source of oxygen, subsurface fires can be controlled by avoiding air intrusion and maintaining proper balance of a landfill gas collection system. While open flames are not likely to occur during a subsurface fire, accelerated or sudden localized settlement of refuse and cover materials in the vicinity of the fire can occur. Although this localized settlement can affect landfill operations, potential subsurface fires would not result in any significant impacts to users of the landfill or the general public, as few persons have access to covered parts of a landfill.

Safety and health hazards such as fires or explosions could occur if landfill gas (LFG) containing methane or toxic gases is permitted to migrate into nearby buildings. The existing LFG control and monitoring system at the Olinda Alpha Landfill would reduce LFG migration and associated potential impacts associated with the proposed project to below a level of significance.

Would the project: (i) Include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment

wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?

No Impact. The proposed project does not include the development of new or retrofitted stormwater control BMPs.

15. Public Services

Would the project: (a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (i) Fire protection?

Potential Significant Impact. The nearest fire station to Olinda Alpha Landfill is City of Brea Station #4, at 170 Olinda Place, off of Carbon Canyon Road. Station #4 is located less than two and a half miles southwest of the landfill.

Fires could be caused at the Olinda Alpha Landfill when combustible refuse, vegetation or litter in the landfill is ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles or from tipping of hot or smoldering loads. The design and operation of the landfill incorporates fire safety requirements. In addition, the Olinda Alpha Landfill has regulatory mandates requiring extensive operational procedures for the prevention and control of fires. Equipment used in landfilling, such as earth movers and water trucks, would also be available for use in controlling and extinguishing fires on or adjacent to this landfill. The vertical and horizontal expansion at the landfill would result in a time extension in demand for fire protection associated with the increased life of the landfill under the proposed project. It is anticipated that personnel and equipment from Station #4 will be required to provide fire service to the landfill site for the duration of the proposed project.

Would the project result in need(s) for new/altered government facilities/services in (a)(ii) police protection?

No Impact. The nearest police station to Olinda Alpha Landfill is at 1 Civic Center Circle in the City of Brea, approximately five miles southwest of the landfill. No increase in traffic is expected due to the vertical and horizontal expansion of the landfill because the permitted tons per day will not change under the proposed project. The existing police services in the area would be adequate to meet the demand for police protection services under the proposed project. Therefore, the proposed project will not result in adverse impacts related to police services.

Would the project result in need(s) for new/altered government facilities/services in (a)(iii) schools?

No Impact. The proposed project will not adversely impact schools since no new population increases are associated with the expansion plan.

Would the project result in need(s) for new/altered government facilities/services in (a)(iv) parks?

Potential Significant Impact. The vertical and horizontal expansion of Olinda Alpha Landfill is proposed within the existing boundary of this site and will not impact any existing or planned trails. The landfill site is shown on the County of Orange Master Plan of Regional Recreational Facilities as a proposed regional park. No development plans have been adopted for the future regional park. However, the ultimate configuration of recreational uses on the site may be impacted due to the proposed project, but will not foreclose the recreational opportunity. It should be noted however, that the proposed project would extend the landfill's closure date by providing additional capacity and would therefore, delay the use of this site as a recreational facility.

The conceptual alignment for the Diamond Bar Trail is in the vicinity of the expansion within the landfill site boundary. However, the implementation of this conceptual trail alignment is not planned in then near future and most likely would be implemented after closure of the landfill. If this proposed tail is implemented prior to landfill closure, it could be located outside the landfill site or, if after the landfill closes, on the landfill site. Implementation of the proposed project at Olinda Alpha Landfill would not preclude the establishment of this regional trail and is considered a less than significant impact.

Would the project result in need(s) for new/altered government facilities/services in (a)(v) other public facilities?

No Impact. The proposed project will require some permit processing by the County of Orange. However, the proposed project is not anticipated to adversely affect the County's overall ability to provide permitting services Countywide. The proposed project will not result in an increase in the number of employees at the landfill or other changes which would result in the need for other new or altered government facilities or services such as libraries or jails. Therefore, the proposed project will not result in adverse impacts related to other governmental services.

16. Utilities and Service Systems

Would the project: (a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; (b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

No Impact. The proposed project would not result in the construction of new or expanded water or wastewater treatment facilities. In addition, the project would not exceed wastewater treatment requirements.

Would the project: (c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

No Impact. The project would not result in the need for the off-site construction of new or expanded stormwater drainage facilities. With the development of the proposed project, the existing landfill stormwater collection system that consists of a series of drainage channels, berms, interceptor ditches and sedimentation basins would be extended to landfill expansion areas as appropriate. This would occur in areas already disturbed by landfill operations and would not result in any additional environmental impacts.

Would the project: (d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill would extend the use period of this landfill. Therefore, the proposed project will result in an increase in the total amount of water needed over time including offices, earthwork, dust control, on-site road construction and other on-site improvements. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of water currently used daily at the landfill. The existing water facilities and supplies are anticipated to be adequate to continue providing water to the landfill over the extended use period of Olinda Alpha Landfill under this proposed project. Therefore, the proposed project will not result in significant adverse impacts related to water treatment and distribution facilities.

Would the project: (e) Have adequate wastewater treatment capacity?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill will increase the use period of the landfill and will result in an increase in the total amount of sewage generated over the life of the landfill. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of sewage currently generated daily at Olinda Alpha Landfill. The existing wastewater facilities are anticipated to be adequate to accommodate the additional sewage generated at Olinda Alpha Landfills over the extended use period of the landfill under the proposed project. Therefore, the proposed project will not result in significant adverse impacts related to sewer or septic systems.

Would the project: (f) disposable served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; (g) Comply with federal, state and local statutes and regulations related to solid waste?

No Impact. The proposed vertical and horizontal expansion will extend the use period of Olinda Alpha Landfill and will provide additional capacity for MSW. Therefore, the proposed project will not result in adverse impacts to MSW disposal.

Mandatory Findings

(a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife population to drop below self

sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history?

Potential Significant Impact. As described in the environmental analysis herein, the proposed project has the potential to degrade the environment. The proposed project will not substantially alter biological resources since the proposed horizontal expansion area of the Olinda Alpha Landfill previously has been disturbed. There are no waters of the U.S. or wetlands, endangered flora or fauna, or habitat conservation areas within the proposed expansion areas which are located entirely within the landfill property boundary . The proposed project would not result in any impacts to archaeological resources because the site has been previously disturbed by landfill operations.

There are no known historical resources on the proposed project site. Therefore, the proposed Olinda Alpha Landfill expansion will not result in any adverse impacts to historical resources.

(b). Does the project have possible environmental effects, which are individually limited but cumulatively considerable ("cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).

Potential Significant Impact. Implementation of the proposed project may result in cumulative impacts. These impacts will be considered in detail in the EIR.

(c). Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potential Significant Impact. Implementation of the proposed project may result in adverse environmental effects. These impacts will be evaluated in detail in the EIR.

Determination

Based upon the evidence in light of the whole record documented in the attached environmental checklist explanation, cited incorporations and attachments, I find that the proposed project:

The proposed project may have a significant effect on the environment which has not been previously analyzed. Therefore, an environmental impact report (EIR) is required.

5.0 NAMES OF PREPARERS

County of Orange Integrated Waste Management Department

Ray Hull, RELOOC Project Manager
Denny Carpenter, RELOOC Project Coordinator
John Arnau, Planner III

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Tin Cheung, Senior Scientist
Jerry Flores, Environmental Analyst
Kimberly Peterson, Senior Biologist
Jeff Post, Graphics
Daryl Fisher, Word Processing

6.0 REFERENCES

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INTEGRATED WASTE MANAGEMENT DEPARTMENT
320 N. FLOWER STREET, SUITE 400
SANTA ANA, CALIFORNIA 92703

NOTICE OF PREPARATION

DATE: January 8, 2004 (Previously issued September 9, 2002)

SUBJECT: Notice of Intent to Prepare Draft Environmental Impact Report # 588

Project Title: Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Olinda Alpha Landfill Implementation

Applicant: County of Orange Integrated Waste Management Department

Project Contact: Linda Hagthrop, Public Information Officer Phone: (714) 834-4176
Fax: (714) 834-4057

The County of Orange Integrated Waste Management Department (IWMD) has conducted an Environmental Analysis Checklist for the RELOOC Strategic Plan-Olinda Alpha Landfill Implementation project and has determined that an Environmental Impact Report (EIR) is necessary. The County of Orange IWMD will be the Lead Agency for the subject project and will prepare the EIR. In order for your concerns to be incorporated into the EIR, we request your input as to the scope and content of the environmental information. In the case of some agencies receiving this Notice, your agency must consider the EIR prepared by the County of Orange IWMD when considering a permit or approval for the project. Please restrict your comments to issues to be addressed in the EIR relevant to your agency's statutory responsibilities for the proposed project. The project description, location, a description of alternatives under review and an analysis indicating the probable environmental effects of the proposed action are contained in the attached materials. Interested individuals and groups also are invited to comment on the issues to be addressed in the EIR.

Please be advised that any written comments received in response to the Notice of Preparation (NOP) previously issued on September 9, 2002 will be retained and incorporated into the Draft EIR if we are requested to do so by the commentor. Otherwise, we encourage recipients of this reissued NOP to provide comments specifically on issues to be addressed in Draft EIR 588 for the amended project.

Pursuant to Section 21080.4 of CEQA, your response must be sent as soon as possible but *not later than 30 days after receipt of this notice.*

A public Scoping Meeting is scheduled for January 22, 2004 at Brea City Hall in the City Council chambers at 7:30 PM. All parties are invited to attend this meeting to provide comments and input on the contents of the Draft EIR for this project.

All parties that have submitted their names and mailing addresses will be notified if any significant changes in the proposed project occur. If you wish to be placed on the mailing list, please submit your name and mailing address to the contact person at the address below. If you have any questions or need additional information, please call the IWMD Project Contact at the number listed above. The mailing address is County of Orange, Integrated Waste Management Department, Office of Public Affairs, 320 North Flower Street, Suite 400, Santa Ana, CA 92703.

Submitted by:

_____
Ray Hull, RELOOC Project Manager

Attachment: Project Description and Alternatives
Initial Study

NOTICE OF PREPARATION
For Draft EIR 588

Regional Landfill Options for Orange County (RELOOC)
Strategic Plan - Olinda Alpha Landfill Implementation

1.0 INTRODUCTION

In compliance with the California Environmental Quality Act (CEQA), the County of Orange's Integrated Waste Management Department (IWMD) is preparing an Environmental Impact Report (EIR) to consider potential impacts from its proposed vertical and horizontal expansion of the Olinda Alpha Landfill. This Notice of Preparation (NOP) is being provided to Responsible Agencies, trustee agencies, federal, state and local agencies and other interested parties for the purpose of soliciting comments on the scope of the EIR and potential environmental impacts that may result from this proposed action.

2.0 BACKGROUND

2.1 REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY (RELOOC)

Strategic Planning

Strategic planning for municipal solid waste (MSW) needs in Orange County is the responsibility of the IWMD. The IWMD's mission is "…to meet the solid waste disposal needs of Orange County through efficient operations, sound environmental practices, strategic planning, innovation and technology." Regional Landfill Options for Orange County (RELOOC) is a short- and long-term strategic planning project initiated by IWMD in 1998 to address existing disposal system capabilities and future needs, and to develop viable short- and long-term solid waste disposal options. Following completion of the planning and feasibility phase of RELOOC, the Orange County Board of Supervisors selected the Strategic Plan (described below) as the preferred alternative to be evaluated in an EIR. The RELOOC Strategic Plan provides a framework for solid waste management over the next 40 years in the most cost-effective manner. The RELOOC Strategic Plan includes a two-phased approach to accomplishing this goal.

Phase I strategies include fully utilizing existing landfill system capacity by:

- Maximizing operational efficiency at existing landfills.
- Expanding FRB and Olinda Alpha landfills.
- Promoting diversion, recycling and market development with the public and haulers.
- Seeking to resolve community concerns related to the extended use of the existing landfills.
- Annually reviewing the RELOOC Strategic Plan and modifying it as appropriate in response to disposal industry trends and advances in technology.

Phase II strategies consist of a series of studies, which will:

- Determine if there is a need to increase the daily amount of solid waste permitted at the Prima Deshecha Landfill five years prior to the closure of the Olinda Alpha Landfill.
- Identify strategies to support, develop and implement feasible, viable alternative technologies or other approaches to maximize landfill capacity for possible consideration in future waste disposal agreements.
- Complete a study to determine the feasibility of expanding FRB Landfill into adjacent Round Canyon prior to re-negotiation of the 2017-2027 Waste Disposal Agreements.

The purpose of this EIR is to analyze potential impacts and provide environmental documentation for the implementation of the RELOOC Strategic Plan component to expand the Olinda Alpha Landfill, proposed as a Phase I strategy in the RELOOC Strategic Plan. A detailed discussion of the proposed project based on parameters developed pursuant to the Strategic Plan is provided below in Section 4.0.

The only other Phase I strategy component requiring CEQA analysis is the expansion of the Frank R. Bowerman (FRB) Landfill, which will be addressed in a separate EIR when the expansion plan for that site is better defined. A major landslide that occurred at the FRB Landfill in early 2002 has required extensive geotechnical investigation, landslide remediation design, biological resource evaluations and coordination/permitting with resource agencies in developing a remediation design for full development of the site. It is anticipated that the CEQA and resource agency approval process for the FRB Landfill will be lengthy. Since the Olinda Alpha and FRB components are independent of each other, a separate EIR will be prepared for the FRB Landfill expansion component of RELOOC Phase I once the full extent of the landslide remediation needs and its effect on the current master plan effort are known. In order to reduce further delays in implementing the overall RELOOC Phase I strategy, the implementation of the Olinda Alpha Landfill expansion is being proposed now.

The Phase II strategies are considered studies and are not subject to CEQA requirements. The Phase II strategies are considered long-term RELOOC program components and, if determined to be feasible as a result of future studies, may be selected for analysis in accordance with CEQA requirements at a later date during the RELOOC 40-year planning timeframe.

RELOOC Planning Process

The RELOOC planning process included the formation of a Steering Committee to provide policy guidance for the strategic planning process. The Committee's formation was developed in consultation with the County of Orange Waste Management Commission. Membership within the Steering Committee consisted of representatives from the:

- Orange County community at-large.
- City Managers Solid Waste Working Group.
- Landfill Host Cities (i.e., Brea, Irvine, San Juan Capistrano and San Clemente).
- Waste Management Commission.
- League of California Cities (Orange County Division).

- IWMD.
- County of Orange (County Executive Office).

The RELOOC Steering Committee directed the Consultant Team (comprised of landfill engineers, environmental experts and other individuals under contract with the IWMD) to evaluate a number of strategic planning options that would meet the short- and long-term RELOOC strategies. Key tasks assigned to the Consultant Team were:

- Identification of available options.
- Capacity analysis.
- Demand analysis.
- Economic analysis.
- Environmental impacts analysis.
- Evaluation (or goal achievement) matrix of options.
- Recommended Strategic Plan.

The RELOOC planning process involved extensive community and agency outreach and was an important element in the evaluation and selection of available options. In the ranking of options, community acceptance was one of five criteria used and was evaluated using a Community Involvement Program (CIP) developed specifically for RELOOC. The CIP and preliminary findings of the RELOOC Feasibility Study Report (FSR) were presented to the Orange County City Managers Association's Solid Waste Working Group (SWWG). As an outcome of input received from the SWWG and concurrence by the RELOOC Steering Committee, a phased approach to RELOOC developed. The phased approach to RELOOC was presented in a series of meetings and briefings to community groups, City Councils, Chambers of Commerce, and the community-at-large, primarily within the host cities affected by the phased approach. These meetings were conducted between August 23, 2001 and October 18, 2001. Based upon recommendations from the community, the SWWG and subsequent action by the RELOOC Steering Committee, a phased approach for the RELOOC Strategic Plan, previously discussed above, was selected by the County Board of Supervisors for CEQA analysis in May 2002.

In September 2002, an NOP for EIR 588 was circulated for public review that identified the RELOOC Phase I strategies. That NOP described vertical and horizontal expansions of the Olinda Alpha and FRB landfills based on preliminary information on the complex geological conditions at FRB Landfill available at that time scoping meetings were held in September, 2002 to receive public comments on the NOP for EIR 588. Since then, extensive work has occurred at the FRB Landfill to develop a landslide remediation design and, as discussed above, the approval process for that project is anticipated to be lengthy may take a number of years to complete. In order not to further delay the implementation of the Olinda Alpha Landfill expansion component of RELOOC Phase I, this EIR 588 is being prepared separate from an EIR to be prepared at a future date for the FRB Landfill expansion component of RELOOC Phase I. Each of these landfill expansion projects is independent of and does not alter the need for or impacts of the other.

2.2 COUNTY OF ORANGE SOLID WASTE DISPOSAL SYSTEM

Active Landfills and Former Refuse Disposal Stations

IWMD operates three MSW landfills strategically located throughout the County. Figure 1 shows the location of the three active landfills in Orange County (Olinda Alpha, Frank R. Bowerman and Prima Deshecha). Olinda Alpha Landfill serves northern Orange County. It also receives MSW from Los Angeles, San Bernardino and Riverside Counties. FRB Landfill serves the central area of the County and also receives MSW from southeastern Los Angeles County. FRB Landfill is the newest landfill in the system. Prima Deshecha Landfill serves the southern areas of Orange County and also receives MSW from cities in northern San Diego County and southern Los Angeles County. Importation of MSW from Los Angeles, San Bernardino and Riverside Counties will cease in 2015. At about that time, Olinda Alpha Landfill will need to import cover material if the landfill closure date is extended. It is anticipated that the truck trip reduction that occurs with the cessation of MSW importation at Olinda Alpha Landfill will offset the increase in truck trips required for the transport of cover material.

In addition to the management of the landfill disposal system, the IWMD is responsible for a range of activities at a number of former refuse disposal stations including the closed Coyote Canyon Landfill and the inactive Santiago Canyon Landfill that is currently going through final closure construction. A discussion of the three active landfills and the County's Landfill operations is provided herein.

Household Hazardous Waste Collection Centers

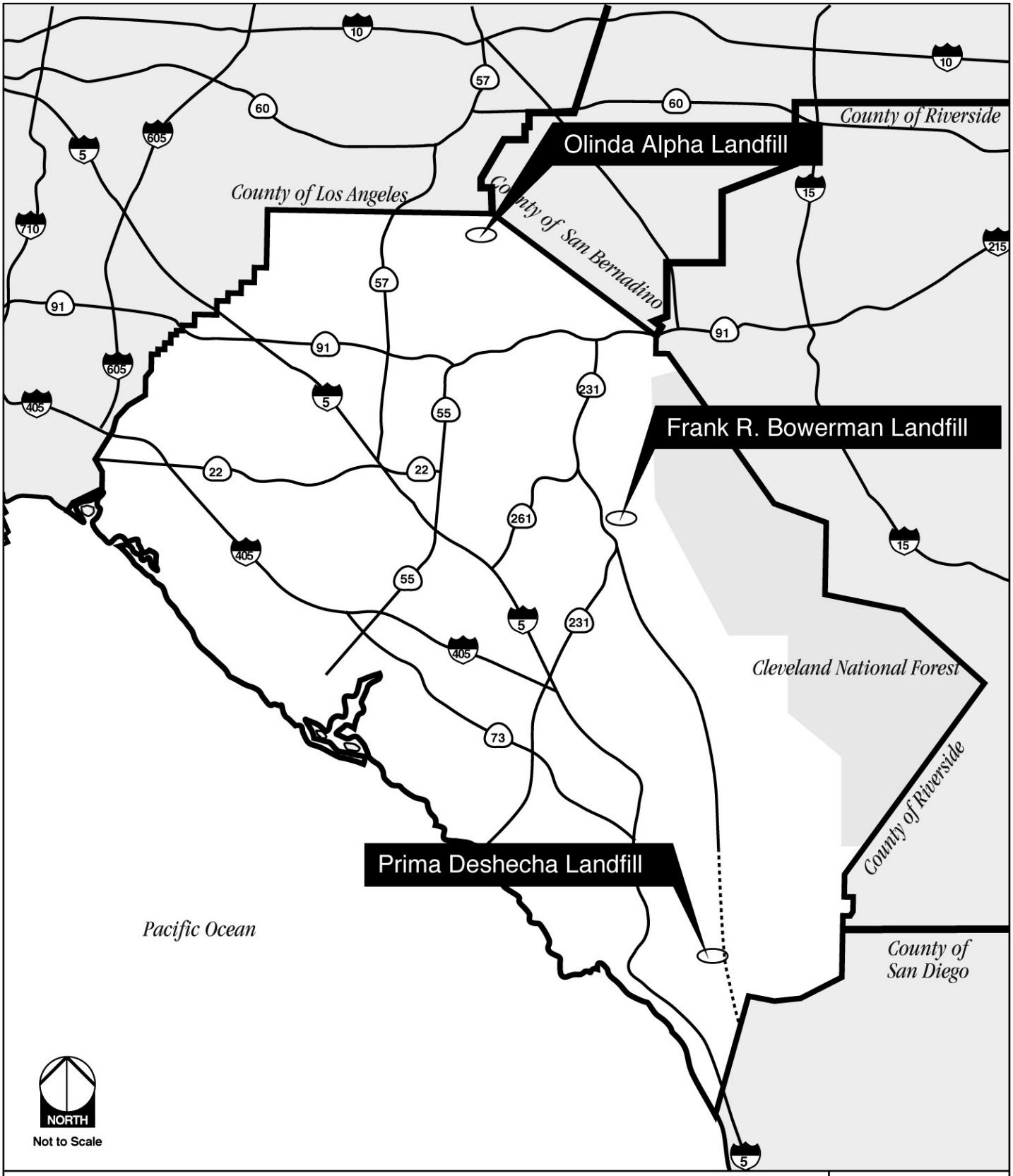
IWMD also operates four household hazardous waste (HHW) collection centers within the County that provide easily accessible disposal facilities for Orange County residents to properly dispose of HHW, thereby reducing the amount of HHW being improperly delivered to the landfills.

Landfill Operations

All of the County's active landfills are deep canyon, cut and cover facilities where the majority of waste is brought to the site from commercial haulers. To determine tipping fees, trucks are weighed by scales before entering the facility and then driven to a designated area of the landfill for waste disposal. The IWMD heavy equipment operators use compactors, bulldozers and large earthmovers to push and compact waste for ultimate burial and daily covering by soil or an approved alternative. No waste is left uncovered at the end of the working day.

Environmental Regulations

Landfill operation in the State of California is highly regulated and monitored by federal, state and local agencies. All Orange County landfills comply with the applicable California Code of Regulations (CCR) (primarily Title 27) and the Code of Federal Regulations, Title 40 (CFR), Parts 257 and 258 (Subtitle D) for landfills. The Olinda Alpha Landfill is a Class III landfill



Note: Project only includes landfill expansions at the FRB and Olinda Alpha Landfills; only implementation of bio-cell technology at Prima Deshecha Landfill

RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Regional Location of Orange County Landfills

Figure 1

permitted for the disposal of non-hazardous MSW. State law requires that landfills operate under the various regulatory requirements of the California Integrated Waste Management Board (CIWMB) that exercises its authority through the approval of Solid Waste Facilities Permits (SWFPs) issued by the Local Enforcement Agency (LEA). The LEA for Orange County landfills is the County of Orange Health Care Agency, Environmental Health Division.

Additionally, the Regional Water Quality Control Board (RWQCB) regulates landfill operations and designs to ensure protection of surface water and groundwater. The RWQCB exercises its authority through issuance of Waste Discharge Requirements (WDR). The South Coast Air Quality Management District (SCAQMD) also regulates landfill operations related to landfill gas emissions, subsurface gas migration, and fugitive dust control for Orange County landfills. Environmental monitoring of air, landfill gas (LFG) and groundwater is conducted at all the sites to detect LFG migration or groundwater contamination. A LFG extraction system and flare station are located at each site for LFG control. In addition, utilization of LFG for energy production currently is being conducted at Olinda Alpha and Prima Deshecha landfills and is in the development stages for the FRB Landfill. A groundwater remediation program including extraction wells and treatment currently is ongoing at Olinda Alpha Landfill. Additional LFG extraction wells and increased groundwater monitoring have been implemented at Prima Deshecha and FRB landfills to determine whether any groundwater remediation efforts also may be required at these sites.

Although the CIWMB has primary oversight and regulatory responsibilities for the landfills in Orange County and has designated the County of Orange Environmental Health Care Agency, Environmental Health Division as its LEA, landfills also are regulated through other laws enforced by agencies at the federal, state and local regulatory levels. In addition to the RWQCB and SCAQMD, these agencies include: U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), Orange County Fire Authority (OCFA) and the County of Orange Public Facilities & Resources Department (PFRD). Adherence to applicable laws and regulations would be required as part of project approval and operating conditions.

Landfill System Capacity

A variety of factors are utilized to determine landfill system capacity including total air space, refuse volume, liner volume, refuse-to-soil ratio and other factors. Based upon these factors, IWMD's records show that the current permitted remaining refuse capacity for Olinda Alpha, FRB and Prima Deshecha landfills is 23.9, 49.2 and 42.8 million tons, respectively, as of June 30, 2003. The Prima Deshecha Landfill is currently undergoing a permit revision process that will increase its remaining refuse capacity from 42.8 million tons to 76.4 million tons (as of June 30, 2003).

The permitted daily tonnage limit for FRB Landfill is 8,500 tons per day (TPD) of refuse. However, under the Settlement Agreement with the City of Irvine, the FRB Landfill currently is allowed to accept an annual average of 7,785 TPD (as of December 2003) and can increase this average daily rate by 1.75% per year until it reaches the permitted maximum of 8,500 TPD. The permitted daily tonnage limit for Olinda Alpha Landfill is 8,000 TPD of refuse. However, under

the Memorandum of Understanding with the City of Brea waste disposal is limited to an annual average of 7,000 TPD. The permitted daily tonnage for Prima Deshecha currently is 4,000 TPD.

Existing Landfill Agreements and Permits

A number of landfill agreements and permits currently are in place with Orange County cities, waste haulers and regulatory agencies responsible for oversight of the County's landfills. In addition to those regulatory agency permits and city agreements described above, the County also has ten-year Waste Disposal Agreements (WDA) with contract cities that are subject to negotiation for renewal by June 2004. The negotiations for renewal will need to be extended since the county landfill system will not have been defined by June 2004. Approval of the Olinda Alpha Landfill expansion is a key component of the system implementation required for negotiation of WDAs for an additional ten-year period.

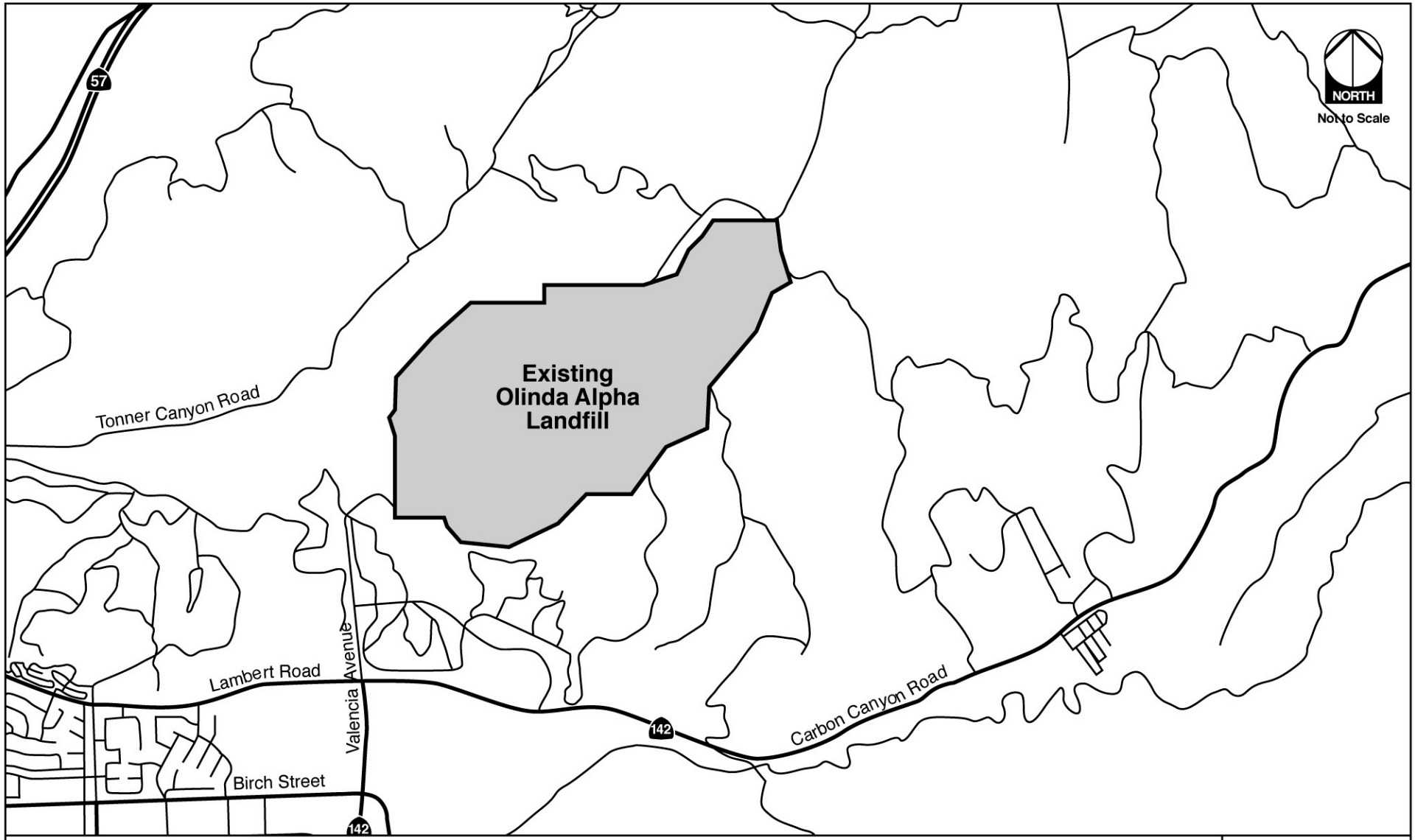
Existing Landfill Characteristics

Olinda Alpha Landfill

The Olinda Alpha Landfill is located at 1942 North Valencia Avenue near the City of Brea. This landfill opened in 1960. The site is comprised of 565 acres with approximately 420 acres permitted for refuse disposal. Access to the site is via Valencia Avenue as shown in Figure 2. The landfill is open Monday through Saturday from 6:00 A.M. to 7:00 A.M. for transfer trucks only and 7:00 A.M. to 4:00 P.M. for all commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is limited to Orange County residents. Only municipal solid waste (MSW) is accepted at the landfill, although limited special wastes (i.e., tires) also are accepted. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted at this landfill.

A Memorandum of Understanding (MOU) between the County and the City of Brea limits daily waste disposal to an annual average of 7,000 tons per day (TPD). However, the Olinda Alpha Landfill's Solid Waste Facility Permit (SWFP) currently allows a daily maximum of 8,000 TPD of MSW. The IWMD is in the process of increasing the daily tonnage limit to 10,000 TPD for up to 36 days per year to allow for increased tonnage days. These increased tonnage days would be floating (not designated) and by the end of the year all 36 days may not be used. Unused floating days would not roll over to the next year. It is anticipated that most of the increased tonnage days will fall immediately preceding or following a holiday. The annual average TPD at the Olinda Alpha Landfill will remain at 7,000 TPD.

The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is also subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and the SCAQMD to assure compliance with applicable regulations. The current closure date for the landfill would be December 2013.



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Olinda Alpha Landfill Location Map

Figure 2

Frank R. Bowerman Landfill

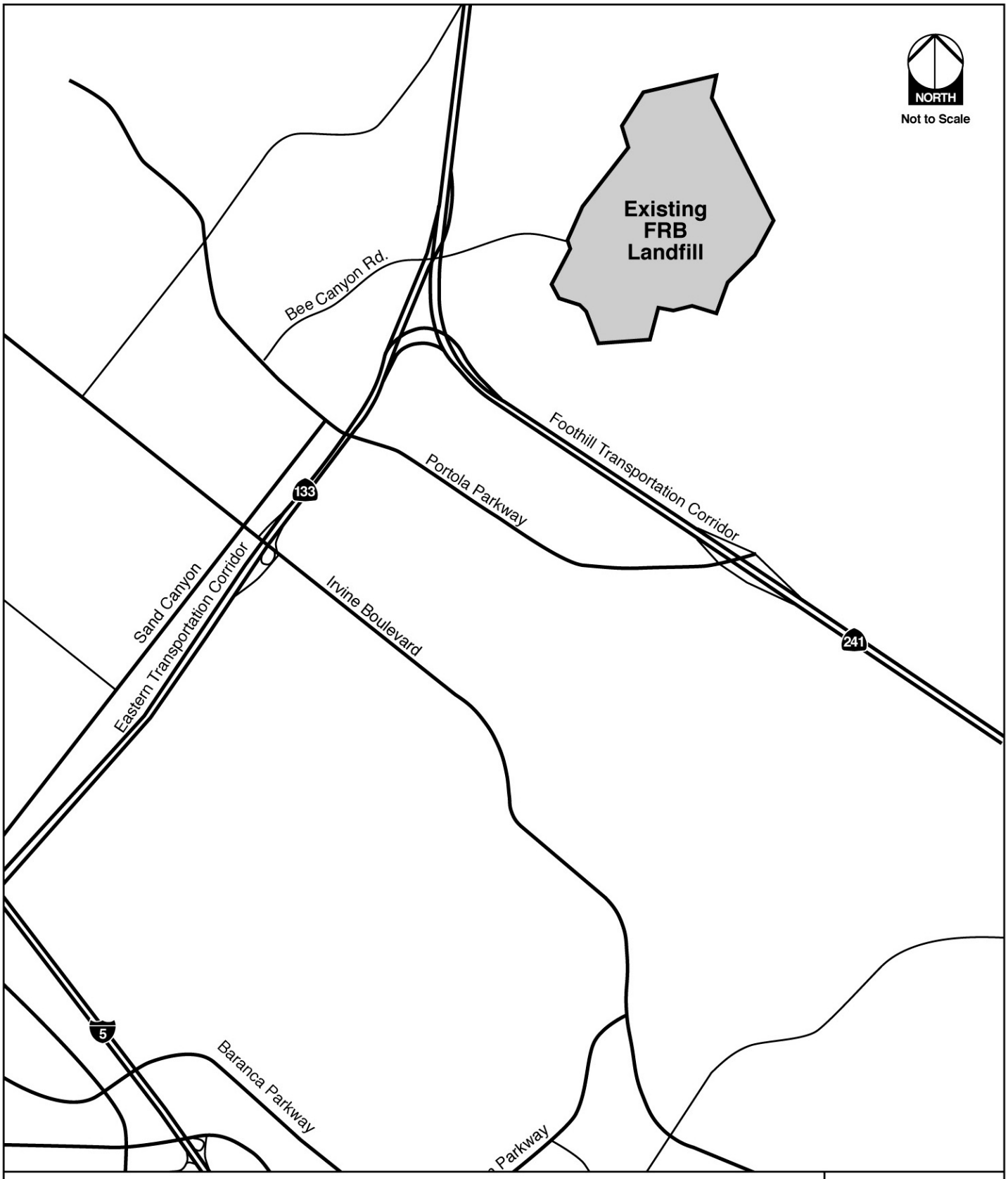
As shown in Figure 3, FRB Landfill is located at 11002 Bee Canyon Access Road in the City of Irvine. Access is available from the Santa Ana Freeway, (Interstate 5, I-5) or the San Diego Freeway (Interstate 405, I-405). The major cross streets are Sand Canyon and Portola Parkway. The facility is open Monday through Saturday, 7:00 A.M. to 4:00 P.M. for all commercial customers. Transfer trucks only are permitted from 4:00 P.M. to 5:00 P.M. Only MSW from commercial haulers and vehicles operating under commercial status are accepted at this landfill. Commercial status is verified by either showing a business license or current tax return to a fee booth attendant or participating in the County's deferred payment account process. Hazardous materials such as asbestos, batteries, chemicals, paints, medical waste and other substances considered hazardous are not accepted at this landfill.

Under the Settlement Agreement with the City of Irvine, the FRB Landfill is currently allowed to accept an annual average of 7,785 TPD (as of December, 2003) and can increase this average daily rate by 1.75 percent per year until it reaches a daily maximum of 8,500 TPD. The current SWFP for the FRB Landfill allows for the maximum daily tonnage limit of 8,500 TPD, but the IWMD is in the process of increasing the SWFP daily tonnage limit to 10,625 TPD to allow for up to 36 days of increased tonnage; similar to that discussed above for the Olinda Alpha Landfill. The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and the SCAQMD to assure compliance with applicable regulations.

The FRB Landfill comprises approximately 725 acres with 341 acres permitted for refuse disposal. This landfill opened in 1990 and its current permit closure date is 2022 based on current operational assumptions for the future. A recent major landslide at the FRB Landfill affecting future disposal areas has caused IWMD to re-evaluate and re-design the site's Master Plan for future development. As previously discussed, a separate EIR will be prepared for the new FRB Master Plan so as not to further delay the Olinda Alpha Landfill expansion approval process. Expansion of the FRB Landfill is, therefore, not being evaluated as part of this EIR 588. Existing permit conditions at the FRB Landfill are assumed for this project description. The currently proposed end use after landfill closure is open space.

Prima Deshecha Landfill

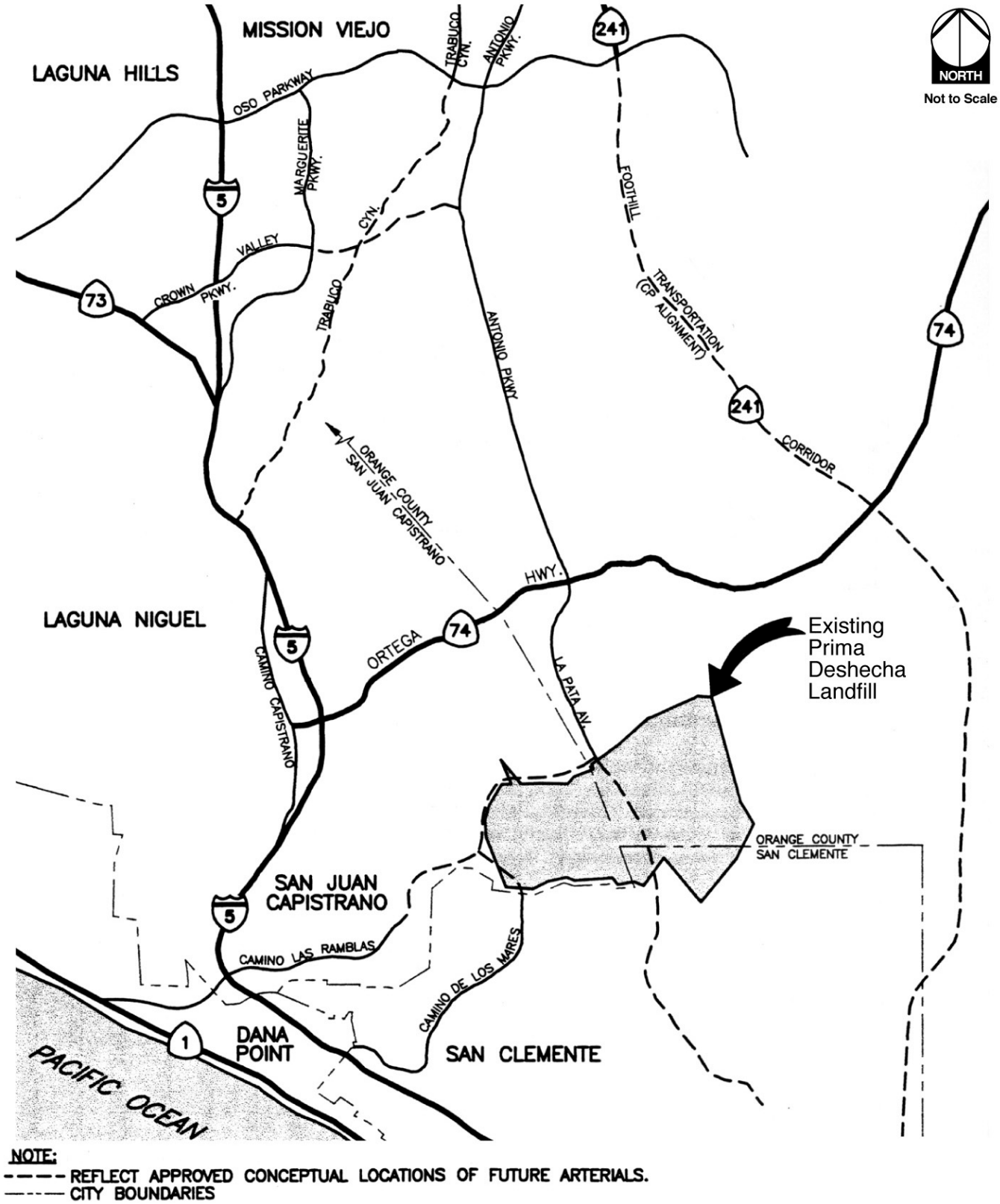
Prima Deshecha Landfill is located at 32250 La Pata Avenue as shown in Figure 4. Portions of the landfill property are in the City of San Juan Capistrano, the City of San Clemente and in County Unincorporated Area. The facility is open Monday through Saturday from 7:00 A.M. to 4:00 P.M. for all customers. However, commercial trucks and dump trucks are exclusively permitted from 4:00 P.M. to 5:00 P.M. MSW from commercial haulers and the public is accepted at this landfill. Public access is for Orange County citizens only while commercial haulers from within and outside the County deliver to the site. Commercial haulers from outside the County can deliver by Importation Agreement only. Commercial and public access is available from Ortega Highway and La Pata Avenue.



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Frank R. Bowerman Landfill Location Map

Figure 3



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Prima Deshecha Landfill Location Map

Figure 4

A limited amount of de-watered sewage sludge also is accepted at the landfill. Prima Deshecha Landfill is permitted to accept up to 4,000 TPD of MSW. The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and SCAQMD to assure compliance with applicable regulations.

The Prima Deshecha Landfill comprises approximately 1,530 acres with 1,000 acres permitted for refuse disposal operations. The landfill was opened in 1976 and is scheduled to close in approximately 2067 based on the amended 2001 General Development Plan (GDP). The GDP for Prima Deshecha Landfill indicates a County regional park as its end use after landfill closure.

3.0 PROJECT OBJECTIVES

The objectives of the proposed project to expand the Olinda Alpha Landfill were derived from the RELOOC study goals and objectives and the RELOOC planning process and are as follows:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of waste disposal agreements with cities.
- Ensure that the short-term disposal needs of the County's Solid Waste System are met.
- Maximize capacity of the existing landfill.
- Ensure adequate revenue and maintain local control of waste disposal to provide consistent and reliable public fees/rates.
- Maintain efficient, cost effective and high quality IWMD operations.
- Minimize adverse environmental impacts.

4.0 PROJECT DESCRIPTION

Purpose of the Project

The Regional Landfill Options for Orange County effort is a long-range strategic planning program initiated by the County of Orange's IWMD. The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long-term solid waste disposal options for the County. As part of that endeavor, the County is considering a number of short-term improvements to existing municipal solid waste landfills operated by the County's IWMD. The proposed project includes the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's short-term solid waste disposal needs.

The draft EIR will analyze the potential environmental impacts associated with the continued operation of the Olinda Alpha Landfill from 2013 to the estimated horizon year 2021. The potential environmental impacts associated with the current landfill operations through 2013 were analyzed in the Final EIR for the North County Landfill and Alternatives Technology Study (NOCLATS).

Proposed Modifications

The proposed project includes both a vertical and horizontal expansion of Olinda Alpha Landfill disposal prism. No change in the landfill property boundary is proposed. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (MSL) to 1,415 feet above MSL or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill site. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill. The horizontal expansion would occur only in areas that have already been disturbed by landfill operations. Figure 5 shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 6 shows the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project. The expanded landfill would ultimately accommodate disposal of an additional 12.3 million tons (MT) of MSW (as of 2003) and would extend the life of the landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, approved landfill elevations and existing disposal technologies. The proposed project would not result in any increase to either the Maximum Daily Permitted Tonnage or the annual average daily tonnage limits for the landfill.

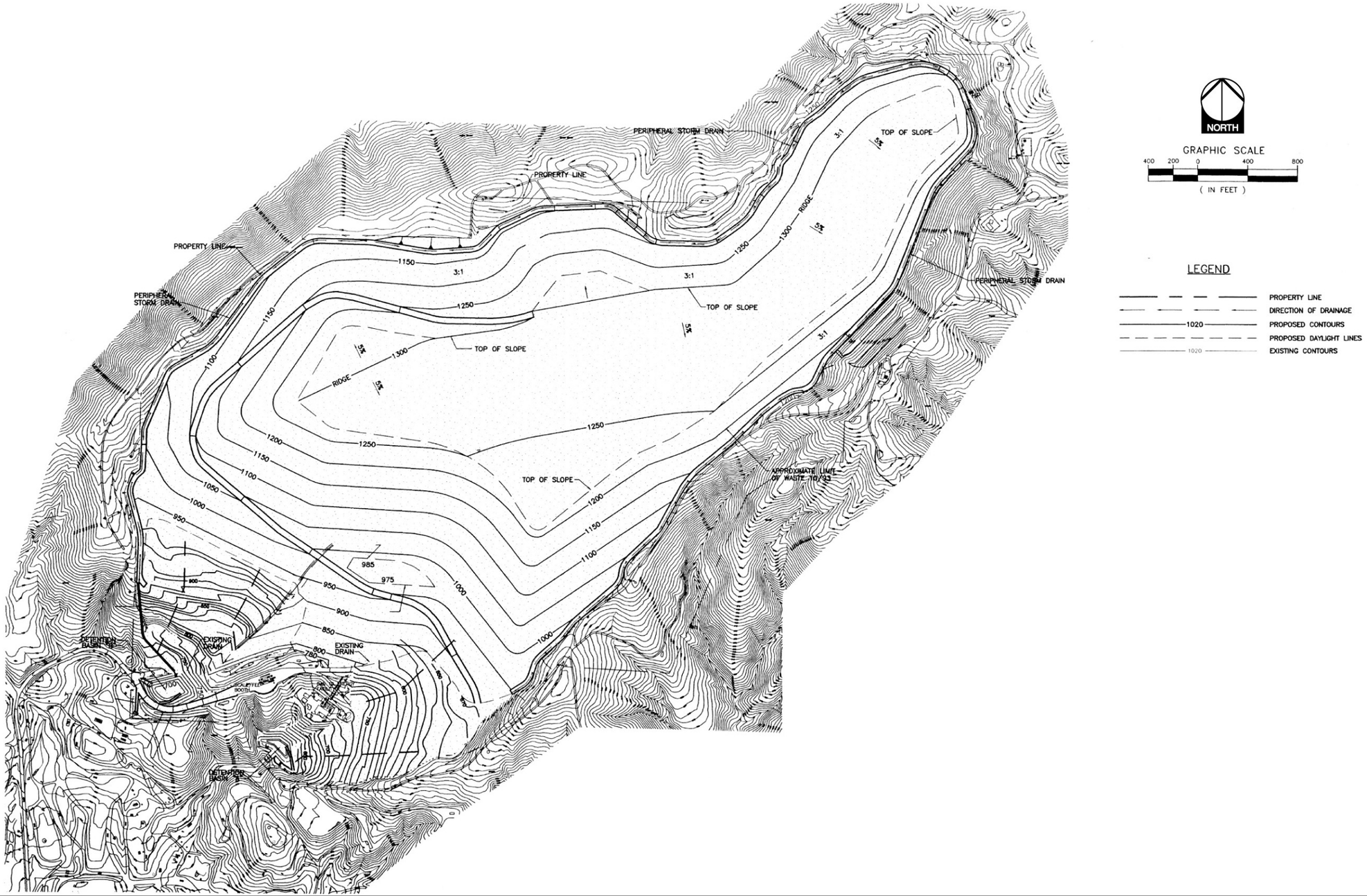
Phasing

The expansion of the Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill sites at once. These phased areas of development currently are being evaluated and will be provided in the EIR.

On-site soil to be utilized for daily cover, road construction and other related uses is available at the Olinda Alpha Landfill through closure in 2013; the site currently accepts dirt and continues to stockpile on-site for future cover use beyond 2013. When on-site soil for cover is depleted at the Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015. Fill and cover techniques at the landfill would be similar to the methods currently employed. Waste would be deposited, compacted and covered daily using appropriate landfilling methods.

Waste Composition

The waste composition at the Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Non-hazardous MSW would comprise the waste stream and existing screening safety mechanisms would continue to be employed to ensure that hazardous materials are not accepted. Access to Olinda Alpha Landfill would remain unchanged, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions. The additional traffic associated with soil import for cover use at Olinda Alpha Landfill by the year 2017 would be offset by the cessation of refuse importation.

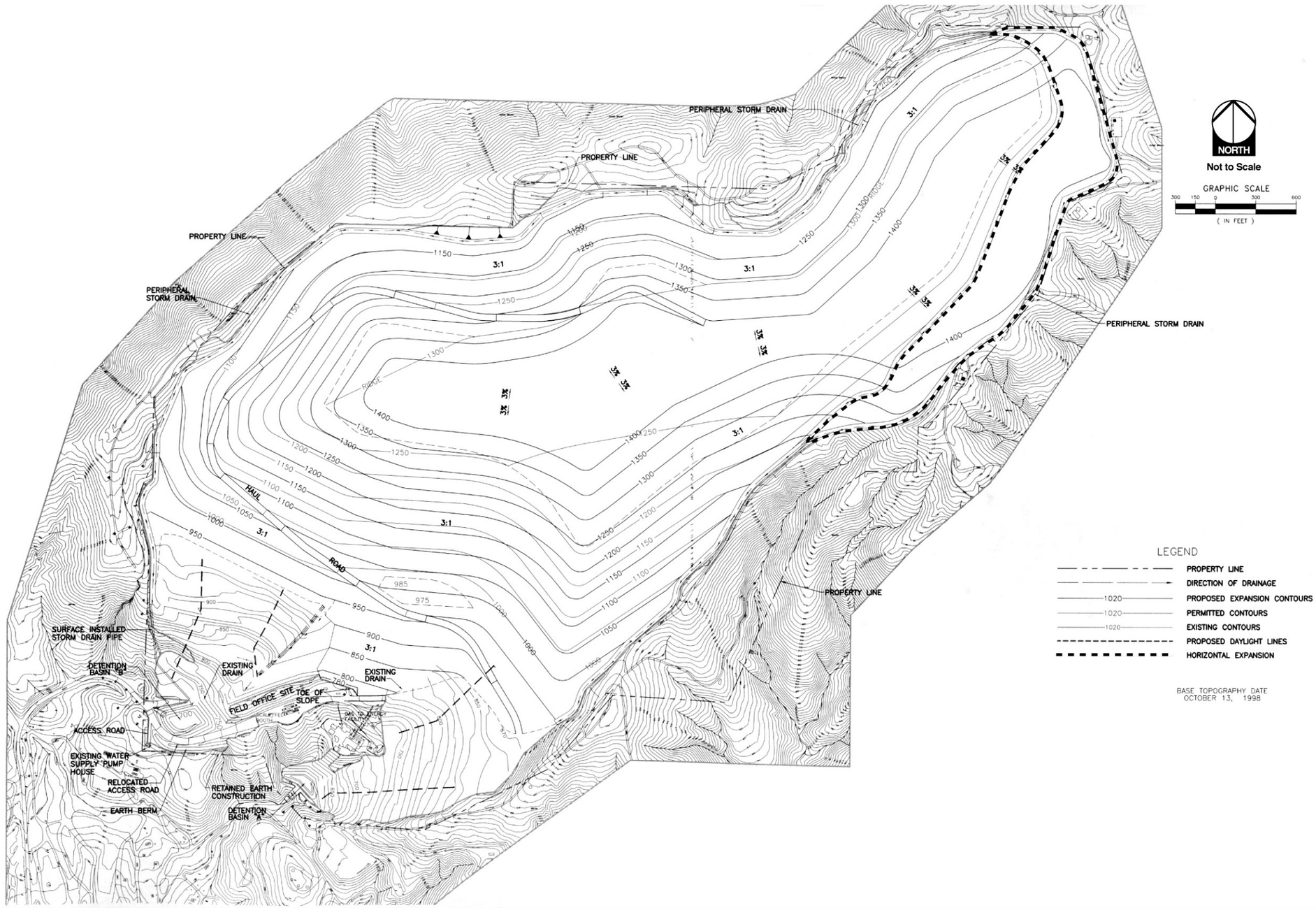


Source: Bryan A. Stirrat & Associates

RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Final Grading Plan (Permitted - 1996)

Figure 5



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Proposed Expansion Plan Map

Figure 6

Other Project Features

The project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional gas control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Employees would continue to perform landfill operations including administration, landfill cover operations and other landfill-related operations. The number and types of equipment utilized at the Olinda Alpha Landfill also would remain unchanged. The operating schedule at the Olinda Alpha Landfill would remain unchanged after implementation of the proposed project.

Surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate expansion of the Olinda Alpha Landfill.

5.0 ALTERNATIVES CONSIDERED

Section 15126.6(a) of the CEQA Guidelines indicates that "…an EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Further, Section 15126(c) of the CEQA Guidelines notes, "…the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects."

The alternatives to the proposed project, which would meet most of the defined project objectives, are described in the section following the No Project (No Action) Alternative:

5.1 ALTERNATIVE 1 - NO PROJECT (NO ACTION)

The No Project Alternative would include no action by the County of Orange. Under this Alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. All three County landfills would operate at their existing permitted capacities with no increase in long-term physical capacity or daily tonnage received at each respective landfill. These landfills would continue to operate based on their permitted capacity and closure dates. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 TPD of MSW under an MOU between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative importation of waste into the Orange County disposal system will end in 2013. Upon its closure, approximately 2,500 TPD of MSW, which is in excess of what could be accommodated at the FRB and Prima Deshecha landfills, would have to be accommodated at landfills outside of Orange County, since no increases in daily tonnage at FRB or Prima Deshecha landfills are assumed under the No Project Alternative. The projected excess TPD of MSW to be exported out of County is based on population projections for the system demand by 2021 and allowances for daily peak refuse inflow rates. Out-of-County landfills would have to be permitted to accept the excess tonnage

from Orange County and may include El Sobrante Landfill in Riverside County and/or the Mid-Valley Landfill in San Bernardino County.

5.2 ALTERNATIVE 2 – TWO LANDFILL SYSTEM IN 2013 (PRIMA DESCHECHA DAILY TONNAGE INCREASE)

Assumptions

- Increase permitted TPD at Prima Deshecha Landfill to a maximum daily limit of 5,000 tons per day TPD and a daily maximum of 6,250 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- TPD at FRB Landfill remains at 8,500 TPD, as an annual average and 10,625 TPD as a daily maximum for increased tonnage days.
- No expansion at Olinda Alpha Landfill
- County importation at all landfills ceases in 2013.

This Alternative would include increasing the current maximum TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD as an annual average when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in the EIR estimated horizon year 2021 based on forecasted population growth. A maximum daily TPD of 6,250 also is proposed to allow for up to 36 increased tonnage days anticipated mostly to fall on days immediately preceding or following a holiday. The FRB Landfill's permitted TPD received would remain unchanged at 8,500 TPD as a maximum daily limit and 10,625 TPD for 36 increased tonnage days.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of the County would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. Prima Deshecha Landfill's 2001 General Development Plan remaining refuse capacity would remain unchanged at 77.6 MT (as of January 2002). However, the incremental increase of Prima Deshecha's in-flow waste stream from 4,000 to a maximum daily limit of 5,000 TPD and a maximum daily limit of 6,250 TPD for 36 increased tonnage days would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years.

Under this alternative, the number of truck trips to Prima Deshecha Landfill would increase although the duration of the trips would be reduced since the life of the landfill would be shortened.

Under this Alternative, the County's MOU with the Cities of San Juan Capistrano and San Clemente would need to be amended prior to 2013 to provide for the increase in annual average and maximum daily tonnages. Similarly, permits currently in-place with the CIWMB and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended.

5.3 ALTERNATIVE 3 – TWO LANDFILL SYSTEM IN 2013 (FRANK R. BOWERMAN DAILY TONNAGE INCREASE)

Assumptions

- Increase permitted TPD at FRB Landfill to a maximum daily limit of 9,500 TPD and a daily maximum of 11,875 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- TPD at Prima Deshecha Landfill remains at a maximum daily limit of 4,000 TPD and is increased to allow for a daily maximum 5,000 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- No expansion at Olinda Alpha Landfill.
- County importation at all landfills ceases in 2013.

This Alternative would include increasing the current annual average TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in the EIR horizon year of 2021 based on forecasted population growth. A maximum daily TPD of 11,875 is also proposed to allow for up to 36 increased tonnage days anticipated to fall mostly on days immediately preceding or following a holiday. The Prima Deshecha Landfill's permitted TPD would remain unchanged at 4,000 TPD as an annual average and would be increased to allow for a daily maximum of 5,000 TPD to allow for up to 36 increased tonnage days anticipated to fall mostly on days immediately preceding or following a holiday.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of County would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of the FRB Landfill is 2022. This alternative would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill just meets the horizon year goal of 2021 for this EIR. The accelerated closure date to 2021 results in a net reduction of one (1) year. Under this alternative, the number of truck trips to the FRB Landfill would increase although the duration of the trips would be reduced since the life of the landfill would be shortened by one year.

Under this Alternative, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased tonnages in annual average and maximum daily tonnages. The County's MOU with the Cities of San Clemente and San Juan Capistrano would also need to be amended for an increase in the maximum daily tonnage. Similarly, permits currently in-place with the CIWMB and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended.

6.0 RESPONSIBLE AGENCIES

The agencies listed below have oversight over the project or may be responsible for issuing permits for the proposed project.

Federal Agencies

- United States Environmental Protection Agency (EPA).

State Agencies

- California Integrated Waste Management Board (CIWMB).
- California Water Resources Control Board (CWRCB).

Regional Agencies

- Regional Water Quality Control Board - Santa Ana Region (RWQCB).
- South Coast Air Quality Management District (SCAQMD).

County Agencies

- Orange County Solid Waste Local Enforcement Agency (LEA).
- Orange County Health Care Agency (OCHCA).
- Orange County Board of Supervisors (OCBS).
- Orange County Fire Authority (OCFA).
- Orange County Planning Department (OCPD).

City Agencies

- City of Brea.

GLOSSARY OF ACRONYMS

ACOE	United States Army Corps of Engineers
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIP	Community Involvement Program
CIWMB	California Integrated Waste Management Board
EIR	Environmental Impact Report
FRB	Frank R. Bowerman
FSR	Feasibility Study Report
HHW	household hazardous waste
I-5	Santa Ana Freeway, Interstate 5
I-405	San Diego Freeway, Interstate 405
IWMD	Integrated Waste Management Department
LEA	Local Enforcement Agency
LFG	Landfill gas
MCY	million cubic yard
MOU	Memorandum of Understanding
MSL	mean sea level
MSW	municipal solid waste
MT	million tons
NOP	Notice of Preparation
OCBS	Orange County Board of Supervisors
OCFA	Orange County Fire Authority
OCHCA	Orange County Health Care Agency
OCLEA	Orange County Health Care Agency, Environmental Health Division
OCPD	Orange County Planning Department
PFRD	Orange County Public Facilities & Resources Department
RELOOC	Regional Landfill Options for Orange County
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SWFP	Solid Waste Facilities Permit

SWWG	Orange County City Managers Association's Solid Waste Working Group
TPD	tons per day
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WDA	Waste Disposal Agreements
WDR	Waste Discharge Requirements

APPENDIX B
NOP DISTRIBUTION LIST

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Temecula CA 92591

T. Doyle
155 Copa de Oro
Brea CA 92823

Robert Eckes
2488 Foothill Lane
Brea CA 92821

Angela Evans
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Laguna Niguel CA 92677

John Ewles
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San Clemente CA 92673

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444 South 8th Street, Suite B1
El Centro CA 92243

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Huntington Beach CA 92648

Tom Frost
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Keith Fullington
481 Peppertree
Brea CA 92821

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Brea CA 92821

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Santa Ana CA 92701

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West Covina CA 91791

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Brea CA 92822

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Laguna Niguel CA 92677

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Irvine CA 92718

Dale Lessick
7 Lincoln
Irvine CA 92604

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Laguna Woods CA 92653

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Brea CA 92821

Steven Maguin
1955 Workman Mill Road
Whittier CA 90601

Jeff Maisch
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Brea CA 92821

Roger Mangrum
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Trabuco Canyon CA 92679

Wade Mansur
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Brea CA 92821

Mary Martinez
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Brea CA 92821

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24 Sonrisas
Irvine CA 92715

Dan Miller
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Newport Beach CA 92660

Heather Neale
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Laguna Niguel CA 92677

C. Perry
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Huntington Beach CA 92648

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153 Morning Glory Street
Brea CA 92821

Bill Ramsey
32400 Paseo Adelanto
San Juan Capistrano CA 92677

Chris Reimer
1 Civic Center Circle
Brea CA 92821

Clay Relano
32122 Cook Lane
San Juan Capistrano CA 92675

Gil Reza
1375 Sunflower Avenue
Costa Mesa CA 92626

Alex Slovin
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San Juan Capistrano CA 92675

Rachael Stoddard
15 Santa Barbara Place
Laguna Niguel CA 92677

Murray Storm
21231 Pinebluff Drive
Trabuco Canyon CA 92679

Anne Stuart
147 Morning Glory Street
Brea CA 92821

Phil Tanioka
504 Craftsman Circle
Brea CA 92821

Diane Taylor
175 Buckthorn
Brea CA 92821

Jeanne Verner
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Brea CA 92821

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575 Administration Drive, Room 117A
Santa Rosa CA 95403

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857 Vista Circle
Brea CA 92821

Caitlin Andrews
12 Gleneagles Drive
Newport Beach CA 92660

John Call
1439 Beechwood
Brea CA 92821

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Fair Oaks CA 95628

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19401 Sunray Lane, #205
Huntington Beach CA 92648

Don Fox
806 Cedar
Brea CA 92821

Glenn Goldstein
1255 Tamarack Avenue
Brea CA 92821

Tori Haidinger
27762 Paseo Barona
San Juan Capistrano CA 92675

Gary Koger
1060 Woodcrest
Brea CA 92821

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31591 Bluff Drive
Laguna Beach CA 92651

Bill Malecki
13915 Avenida Espana
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Irvine CA 92715

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Huntington Beach CA 92649

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Grass Valley CA 95945

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170 Copa de Oro
Brea CA 92823

Gordon Scruton
230 Copa de Oro
Brea CA 92823

David Stevenson
185 Lilac
Brea CA 92823

Ann Summers
215 Verbena Lane
Brea CA 92821

Theresa Ullrich
160 Buckthorn
Brea CA 92823

Brobeck, Attorneys at Law
Brinton C. Jeff
38 Technology Drive
Irvine CA 926185312

Brown, Vence & Associates, Inc.
Richard Tagore-Erwin
198 Cirby Way, Suite 170
Roseville CA 95678

California Integrated Waste Management Board
Bonnie Bruce
1001 I Street, P.O. Box 4025
Sacramento CA 95812

California Regional Water Quality Control Board
Dixie Lass
3737 Main Street, Suite 500
Riverside CA 92501-3339

California Regional Water Quality Control Board
John Odermatt
9174 Sky Park Court, Suite 100
San Diego CA 92123

City of Anaheim
Doris Roush
200 South Anaheim Blvd.
Anaheim CA 92805

City of Irvine
Michael Byrne
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Irvine CA 92713

City of Lake Forest
Jacqueline Maraya
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Lake Forest CA 92630

City of San Juan Capistrano
Douglas Dumhart
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San Juan Capistrano CA 92675

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Brea CA 92821

Irvine Community Development Co.
Joe Davis
550 Newport Center Drive
Newport Beach CA 92658-6370

Paul Moreno
Audubon Society-South Coast
28872 Escalona Drive
Mission Viejo CA 92692

Chuck Tobin
Burrtec Waste
9890 Cherry Avenue
Fontana CA 92335

California Native Plant Society
P.O. Box 54891
Irvine CA 92619

City of Dana Point
33282 Golden Lantern, Suite 212
Dana Point CA 92629

City of Oceanside
1200 Carlsbad Village Drive
Carlsbad CA 92008

Steve South
EDCO Disposal Corporation
6670 Federal Blvd.
Lemon Grove CA 91945

Robert Fraser
Ortega Highway Residents Association
1536 E. Washington Ave.
Santa Ana CA 92701-3246

Rancho Mission Viejo
28811 Ortega Highway, Box 9
San Juan Capistrano CA 92693

Donald Rose
San Diego Gas & Electric
P.O. Box 1831
San Diego CA 92112

Santa Margarita Company
30211 Avenida de Las Banderas
Rancho Santa Margarita CA 92635

Sierra Club
P.O. Box 5367
Fullerton CA 92635

David Stein
Southern California Association of Governments
818 West 7th Street, 12th Floor
Los Angeles CA 90017

Southern California Edison
2244 Walnut Grove Avenue, P.O. Box 800
Rosemead CA 91770

Talega Associates, LLC
951 Calle Negocio, Suite D
San Clemente CA 92673

Norm Witt
The Irvine Company
550 Newport Center Drive
Newport Beach CA 92660

Scott Bacsikin
Transportation Corridor Agencies
125 Pacifica, Suite 100
Irvine CA 92618-3304

Tom Hale
TVI
P.O. Box 24
Irvine CA 92650

Gaye Soroka
Waste Management
16122 Construction Circle East
Irvine CA 92712

Whispering Hills, LLC
19700 Fairchild Road
Irvine CA 92612

Aera Energy LLC
3030 Saturn Street, Suite 101
Brea CA 92821-6271

Boy Scouts of America
2333 Scout Way
Los Angeles CA 90026-4912

Chevron/Texaco Corp.
6001 Bollinger Canyon Road
San Ramon CA 94583

City of Industry
15660 East Stafford Street
City of Industry CA 91744

City of Industry Planning Dept
15651 East Stafford Street
City of Industry CA 91744-3922

City of Industry Public Works
15651 East Stafford Street
City of Industry CA 91744-3922

Merit Property Management, Inc
25910 Acero St, Suite 200
Mission Viejo CA 92691

Neuvo Energy Company
1021 Main Street
Houston TX 77002

PF&RD/Harbors, Beaches and Parks
300 N. Flower St.
Santa Ana CA 92703

Shell Western E & P, Inc.
P.O. Box 11164
Bakersfield CA 93389-1164

State of California
P.O. Box 942896
Sacramento CA 94296-0001

Texaco California, Inc.
5201 Truxtun Ave., #100
Bakersfield CA 93309-0640

APPENDIX C
COMMENTS LETTERS RECEIVED ON THE NOP

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Jan Boel
Acting Deputy Director

Notice of Preparation

January 13, 2004

To: Reviewing Agencies

Re: Regional Landfill Options for Orange County (RELOOC) Strategic Plan
SCH# 2004011055

Attached for your review and comment is the Notice of Preparation (NOP) for the Regional Landfill Options for Orange County (RELOOC) Strategic Plan draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Ray Hull
Orange County
320 North Flower Steet, Suite 400
Santa Ana, CA 92702-4048

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Associate Planner, State Clearinghouse

Attachments
cc: Lead Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
(916)445-0613 FAX(916)323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	2004011055
Project Title	Regional Landfill Options for Orange County (RELOOC) Strategic Plan
Lead Agency	Orange County
Type	NOP Notice of Preparation
Description	Proposed vertical and horizontal expansion of Olinda Alpha Landfill to meet the County's short and long term solid waste disposal needs. Project alternatives may include out-of-county waste export and increasing tons-per-day of municipal solid waste at active Orange County landfills.

Lead Agency Contact

Name	Ray Hull		
Agency	Orange County		
Phone	714-834-7202	*Fax*	
email			
Address	320 North Flower Steet, Suite 400		
City	Santa Ana	*State* CA	*Zip* 92702-4048

Project Location

County	Orange				
City	Brea				
Region					
Cross Streets	Lambert Road (South) and Valencia Avenue (Southwest)				
Parcel No.					
Township	3S	*Range* 9W	*Section* 8	*Base*	

Proximity to:

Highways	SR-57
Airports	
Railways	
Waterways	
Schools	
Land Use	

Project Issues	Aesthetic/Visual; Air Quality; Archaeologic-Historic; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Noise; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Water Quality; Water Supply; Landuse
Reviewing Agencies	Resources Agency; Department of Conservation; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 5; Native American Heritage Commission; California Highway Patrol; Caltrans, District 12; Air Resources Board, Major Industrial Projects; Integrated Waste Management Board; State Water Resources Control Board; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 8

Date Received 01/13/2004 *Start of Review* 01/13/2004 *End of Review* 02/11/2004

NOP Distribution List

County: ORANGE SCH# 2004011055

Resources Agency

- [■] **Resources Agency** Nadell Gayou
- [ ] **Dept. of Boating & Waterways** Suzi Betzler
- [ ] **California Coastal Commission** Elizabeth A. Fuchs
- [ ] **Colorado River Board** Gerald R. Zimmerman
- [■] **Dept. of Conservation** Roseanne Taylor
- [ ] **California Energy Commission** Environmental Office
- [ ] **Dept. of Forestry & Fire Protection** Allen Robertson
- [■] **Office of Historic Preservation** Hans Kreutzberg
- [■] **Dept of Parks & Recreation** B. Noah Tilghman Environmental Stewardship Section
- [ ] **Reclamation Board** Lori Buford
- [ ] **Santa Monica Mountains Conservancy** Paul Edelman
- [ ] **S.F. Bay Conservation & Dev't. Comm.** Steve McAdam
- [■] **Dept. of Water Resources** Resources Agency Nadell Gayou

Fish and Game

- [ ] **Dept. of Fish & Game** Scott Flint Environmental Services Division
- [ ] **Dept. of Fish & Game 1** Donald Koch Region 1
- [ ] **Dept. of Fish & Game 2** Banky Curtis Region 2
- [ ] **Dept. of Fish & Game 3** Robert Floerke Region 3
- [ ] **Dept. of Fish & Game 4** William Laudermilk Region 4
- [■] **Dept. of Fish & Game 5** Don Chadwick Region 5, Habitat Conservation Program
- [ ] **Dept. of Fish & Game 6** Gabrina Gatchel Region 6, Habitat Conservation Program
- [ ] **Dept. of Fish & Game 6 I/M** Tammy Allen Region 6, Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M** George Isaac Marine Region

Other Departments

- [ ] **Food & Agriculture** Steve Shaffer Dept. of Food and Agriculture
- [ ] **Dept. of General Services** Robert Sleppy Environmental Services Section
- [ ] **Dept. of Health Services** Wayne Hubbard Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission** Debby Eddy
- [ ] **Office of Emergency Services** John Rowden, Manager
- [ ] **Governor's Office of Planning & Research** State Clearinghouse

_____

- [■] **Native American Heritage Comm.** Debbie Treadway

- [ ] **Public Utilities Commission** Ken Lewis
- [ ] **State Lands Commission** Jean Sarino
- [ ] **Tahoe Regional Planning Agency (TRPA)** Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics** Sandy Hesnard
- [ ] **Caltrans - Planning** Ron Helgeson
- [■] **California Highway Patrol** John Olejnik Office of Special Projects
- [ ] **Housing & Community Development** Cathy Creswell Housing Policy Division

Dept. of Transportation

- [ ] **Dept. of Transportation 1** Mike Eagan District 1
- [ ] **Dept. of Transportation 2** Don Anderson District 2
- [ ] **Dept. of Transportation 3** Jeff Pulverman District 3
- [ ] **Dept. of Transportation 4** Tim Sable District 4
- [ ] **Dept. of Transportation 5** David Murray District 5
- [ ] **Dept. of Transportation 6** Marc Birnbaum District 6
- [ ] **Dept. of Transportation 7** Stephen J. Buswell District 7
- [ ] **Dept. of Transportation 8** Linda Grimes, District 8
- [ ] **Dept. of Transportation 9** Gayle Rosander District 9
- [ ] **Dept. of Transportation 10** Tom Dumas District 10
- [ ] **Dept. of Transportation 11** Bill Figge District 11
- [■] **Dept. of Transportation 12** Bob Joseph District 12

Cal EPA

Air Resources Board

- [ ] Airport Projects Jim Lerner
- [ ] Transportation Projects Kurt Karperos
- [■] Industrial Projects Mike Tollstrup

- [■] **California Integrated Waste Management Board** Sue O'Leary
- [ ] **State Water Resources Control Board** Jim Hockenberry Division of Financial Assistance

- [■] **State Water Resources Control Board** Student Intern, 401 Water Quality Certification Unit Division of Water Quality
- [ ] **State Water Resouces Control Board** Steven Herrera Division of Water Rights
- [■] **Dept. of Toxic Substances Control** CEQA Tracking Center

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1** Cathleen Hudson North Coast Region (1)
- [ ] **RWQCB 2** Environmental Document Coordinator San Francisco Bay Region (2)
- [ ] **RWQCB 3** Central Coast Region (3)
- [ ] **RWQCB 4** Jonathan Bishop Los Angeles Region (4)
- [ ] **RWQCB 5S** Central Valley Region (5)
  - [ ] **RWQCB 5F** Central Valley Region (5) Fresno Branch Office
  - [ ] **RWQCB 5R** Central Valley Region (5) Redding Branch Office
- [ ] **RWQCB 6** Lahontan Region (6)
  - [ ] **RWQCB 6V** Lahontan Region (6) Victorville Branch Office
- [ ] **RWQCB 7** Colorado River Basin Region (7)
- [■] **RWQCB 8** Santa Ana Region (8)
- [ ] **RWQCB 9** San Diego Region (9)

- [ ] **Other** _____

_____

_____

Last Updated on 01/12/04

·Reference sch# 2002091031·

)P Distribution List

County: ORANGE **SCH#** 2004011055

sources Agency

- **Resources Agency**
  Nadell Gayou
- **Dept. of Boating & Waterways**
  Suzi Betzler
- **California Coastal Commission**
  Elizabeth A. Fuchs
- **Colorado River Board**
  Gerald R. Zimmerman
- **Dept. of Conservation**
  Roseanne Taylor
- **California Energy Commission**
  Environmental Office
- **Dept. of Forestry & Fire Protection**
  Allen Robertson
- **Office of Historic Preservation**
  Hans Kreutzberg
- **Dept of Parks & Recreation**
  B. Noah Tilghman
  Environmental Stewardship Section
- **Reclamation Board**
  Lori Buford
- **Santa Monica Mountains Conservancy**
  Paul Edelman
- **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

h and Game

- **Dept. of Fish & Game**
  Scott Flint
  Environmental Services Division
- **Dept. of Fish & Game 1**
  Donald Koch
  Region 1
- **Dept. of Fish & Game 2**
  Banky Curtis
  Region 2
- **Dept. of Fish & Game 3**
  Robert Floerke
  Region 3
- **Dept. of Fish & Game 4**
  William Laudermilk
  Region 4
- [x] **Dept. of Fish & Game 5**
  Don Chadwick
  Region 5, Habitat Conservation Program
- **Dept. of Fish & Game 6**
  Gabrina Gatchel
  Region 6, Habitat Conservation Program
- **Dept. of Fish & Game 6 I/M**
  Tammy Allen
  Region 6, Inyo/Mono, Habitat Conservation Program
- **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- **Dept. of General Services**
  Robert Sleppy
  Environmental Services Section
- **Dept. of Health Services**
  Wayne Hubbard
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- **Delta Protection Commission**
  Debby Eddy
- **Office of Emergency Services**
  John Rowden, Manager
- **Governor's Office of Planning & Research**
  State Clearinghouse

- [x] **Native American Heritage Comm.**
  Debbie Treadway
- **Public Utilities Commission**
  Ken Lewis
- **State Lands Commission**
  Jean Sarino
- **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- **Caltrans - Planning**
  Ron Helgeson
- [x] **California Highway Patrol**
  John Olejnik
  Office of Special Projects
- **Housing & Community Development**
  Cathy Creswell
  Housing Policy Division

Dept. of Transportation

- **Dept. of Transportation 1**
  Mike Eagan
  District 1
- **Dept. of Transportation 2**
  Don Anderson
  District 2
- **Dept. of Transportation 3**
  Jeff Pulverman
  District 3
- **Dept. of Transportation 4**
  Tim Sable
  District 4
- **Dept. of Transportation 5**
  David Murray
  District 5
- **Dept. of Transportation 6**
  Marc Birnbaum
  District 6
- **Dept. of Transportation 7**
  Stephen J. Buswell
  District 7
- **Dept. of Transportation 8**
  Linda Grimes,
  District 8
- **Dept. of Transportation 9**
  Gayle Rosander
  District 9
- **Dept. of Transportation 10**
  Tom Dumas
  District 10
- **Dept. of Transportation 11**
  Bill Figge
  District 11
- [x] **Dept. of Transportation 12**
  Bob Joseph
  District 12

Cal EPA

Air Resources Board

- Airport Projects
  Jim Lerner
- Transportation Projects
  Kurt Karperos
- [x] Industrial Projects
  Mike Tollstrup

- [x] **California Integrated Waste Management Board**
  Sue O'Leary
- **State Water Resources Control Board**
  Jim Hockenberry
  Division of Financial Assistance

- [x] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center

Regional Water Quality Control Board (RWQCB)

- **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- **RWQCB 3**
  Central Coast Region (3)
- **RWQCB 4**
  Jonathan Bishop
  Los Angeles Region (4)
- **RWQCB 5S**
  Central Valley Region (5)
  - **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- **RWQCB 6**
  Lahontan Region (6)
  - **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- **RWQCB 7**
  Colorado River Basin Region (7)
- [x] **RWQCB 8**
  Santa Ana Region (8)
- **RWQCB 9**
  San Diego Region (9)

- **Other** _____

Last Updated on 01/12/04

HILLS FOR EVERYONE

Southern California comes together at the Puente - Chino Hills

Los Angeles County
Orange County
Riverside County
San Bernardino County

January 21, 2004

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street Suite 400
Santa Ana, CA 92703

RE: Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation – DEIR #588

Dear Mr. Hull,

For over twenty-five years, Hills For Everyone has worked to create and complete Chino Hills State Park. We are now working to connect the remaining open space in the Puente-Chino Hills Wildlife Corridor to ensure the long-term health of this ecosystem (see attached map). We appreciate the opportunity to comment on the aforementioned project.

CEQA requires agencies to prepare a cumulative impact analysis in evaluating the impact of a proposed project. Both federal and state courts have repeatedly underscored the importance of the cumulative impacts analysis. CEQA requires a discussion of the environmental impacts, both direct and indirect, of the proposed project in combination with all "closely related past, present and reasonably foreseeable probable future projects." Guideline Section 15355 (b); see also Cal. Pub. Res. Code 21083 (b); Guidelines Sections 15021 (a) (2), 15130 (a), 15358. The discussion of cumulative impacts must "reflect the severity of the impacts and the likelihood of their occurrence" (Guidelines 15130 (b)), and must document its analysis with references to specific scientific and empirical evidence. Mountain Lion Coalition v. California Fish and Game Commission, 214 Cal. App.3d 1043, 1047,1052 (1989).

Our overarching concern is the continued fragmentation of habitat and the creation of edge effects by the landfill in this region of the hills and the cumulative impacts on the resources on the adjacent Chino Hills State Park. We were surprised to see that biological resource was not going to be addressed in the Draft Environmental Impact Report. We urge that you do so. Not only does Chino Hills State Park now lie next to the landfill on the east but the Habitat Conservation Plan created for the Shell project in Yorba Linda also lies directly across Carbon Canyon Road to the south. In addition, Significant Ecological Area # 15 in the Los Angeles County General Plan lies due north of the project. The Department of Fish and Game has

designated the same land as Significant Natural Area # 94. The list of potential impacts on this resource rich landscape is lengthy even though the footprint will remain on land owned by the County. For example, we note the large flock of seagulls and other birds that visit the dump daily. When it is closed on Sunday and they have nowhere to feed, they can have a significant impact on wildlife/bird populations and habitats in neighboring natural lands including the State Park.

The last time the landfill was expanded, the effort to connect the Puente-Chino Wildlife Corridor effort had not yet begun. In the meantime scientists have taught us of the need for connectivity to protect the resources for the long term. This region is a "Hot Spot of Biodiversity," critical habitat for the California gnatcatcher and a "Missing Linkage" according to a report performed by San Diego Zoological Society and others. Now we also know that over $200 million has been invested in saving land in this ecosystem that the Olinda Landfill sits in the midst of (see attachment). Once the landfill is closed and restored to a natural area you can see how it will serve as a link in this region-wide Corridor.

Please keep me informed of any and all contracts, notices, hearings, staff reports, briefings, meetings and other matters related to the proposed project. We are pleased to respond to any questions you may have concerning our comments on the NOP. I can be reached at (714) 996-0502.

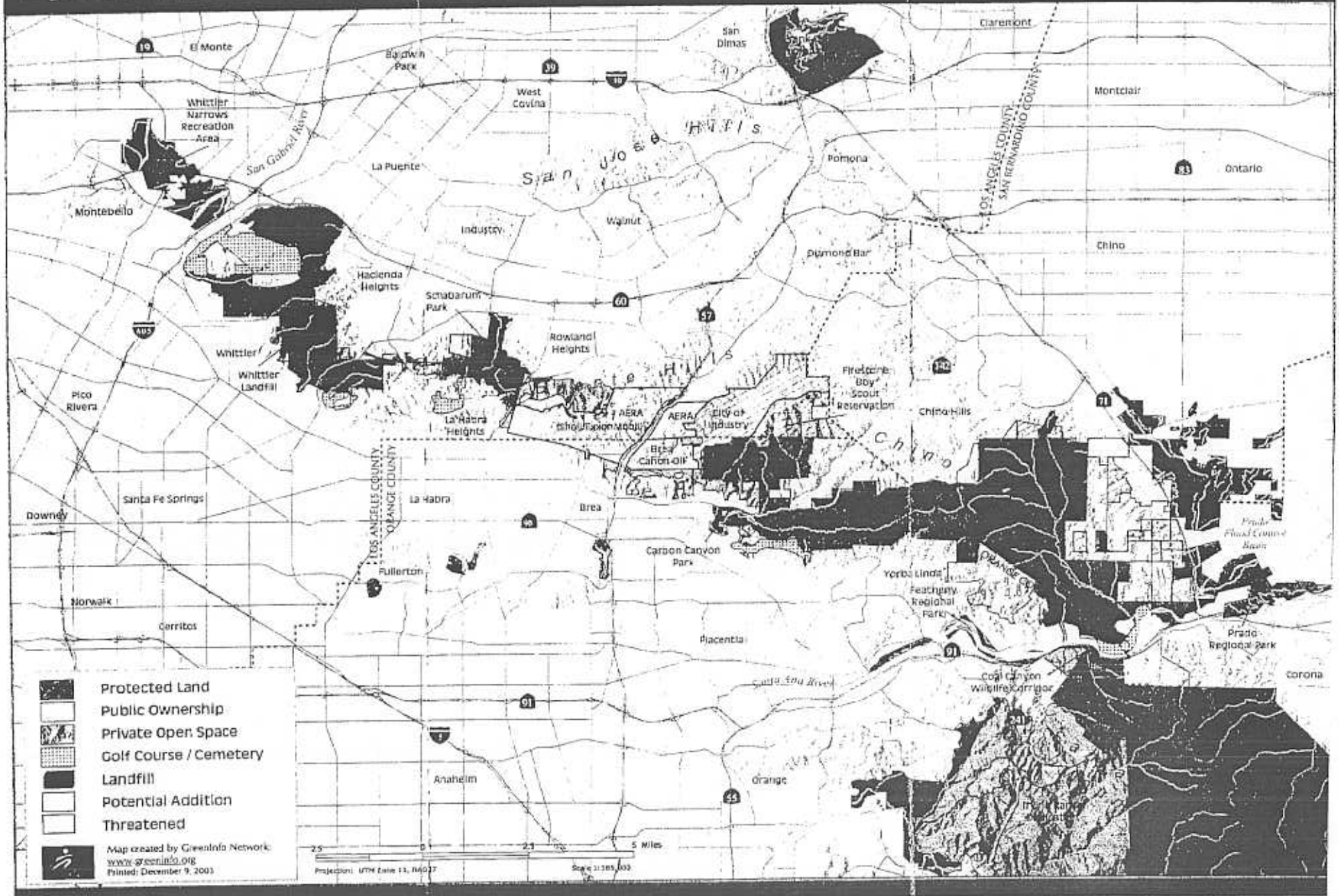
Very Truly Yours,

Claire Schlotterbeck

Claire Schlotterbeck
Executive Director

Enclosures

Open Space in the Puente-Chino Hills Wildlife Corridor



PUBLIC INVESTMENTS
IN THE PUENTE-CHINO HILLS WILDLIFE CORRIDOR

Public Agency Acquisition Investments				
Public Agency Landowner	Acquisition Date(s)	Total Acreage	Actual Public Investment	Estimated Current Value of Properties
City of Whittier	1994 - 1998	1723	15,086,500	$15,336,500
City of Yorba Linda*	N/A	170*		$2,550,000
County Sanitation Districts of Los Angeles County*	N/A	225*		$2,700,000
Los Angeles County Department of Parks and Recreation	1960-'80	583	3,735,000	$7,000,000
Los Angeles County Department of Public Works	N/A	35		$700,000
Orange County Department of Harbors, Beaches, and Parks	N/A	729		$14,580,000
Puente Hills Landfill Native Habitat Preservation Authority	1996-2002	1811	27,848,954	27,966,454
Mountains Recreation and Conservation Authority	1997	200	2,250,000	$2,250,000
CA Department of Parks and Recreation	1982-'96	11,770	62,443,972	$62,443,972
CA Department of Parks and Recreation & U.S. Fish & Wildlife Service	2000-2001	685	43,500,000	$63,500,000
Army Corps of Engineers	N/A	124		$1,860,000
	TOTAL	17,671 ac.	$154,864,426	$200,886,926

* Property dedicated as public open space as a result of the regulatory process.

3- 5 Year Acquisition Visions: Potential Open Space to be Acquired by Public Agencies			
Public Agency	Funding Source	Total Acreage	Estimated Public Investment
Puente Hills Landfill Native Habitat Preservation Authority	Los Angeles County tipping fees	1,150	$12,500,000
Wildlife Corridor Conservation Authority	Los Angeles County Proposition A	3,000	$10,000,000
City of Brea	Rivers & Mountains Conservancy	527	$3,000,000
CA Department of Parks and Recreation	EEMP, Private land conservancy	160	$1,924,000
	TOTAL	7367	$27,424,000

Restoration Investment by Public Agencies		
Public Agency	Years of Active Restoration	Public Investment
CA Department of Parks and Recreation	12	$275,550
Puente Hills Landfill Native Habitat Preservation Authority	2	$92,000
Mountains Recreation and Conservation Authority	2	$107,000
CA Department of Transportation (CalTrans)	2	(minimum)160,000
City of Whittier	2	N/A
Los Angeles County Department of Parks and Recreation	N/A	N/A
Orange County Harbors, Beaches and Parks	N/A	N/A
	TOTAL	$634,550

GRAND TOTAL $228,945,476

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009

In Reply Refer To:
FWS-OR-3724.1

JAN 2 3 2004

Linda Hagthrop
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, California 92703

Re: Notice of Preparation of an Environmental Impact Report for Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation, County of Orange, California

Dear Ms. Hagthrop:

We have reviewed the above referenced Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the expansion of the Olinda Alpha Landfill, as described in the Regional Landfill Options for Orange County (RELOOC) Strategic Plan for the County of Orange, California. This NOP was received on January 12, 2004. The proposed project would involve the vertical and horizontal expansion of the Olinda Alpha Landfill to allow it to operate until 2021 instead of 2013.

We offer the following comments and recommendations regarding project-associated biological impacts based on our review of the NOP and our knowledge of declining habitat types and species within Orange County. We provide these comments in keeping with our agency's mission to work "with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people." Specifically, we administer the Endangered Species Act (Act) of 1973, as amended. We also provide comments on public notices issued for a Federal permit or license affecting the Nation's waters pursuant to the Clean Water Act.

To facilitate the evaluation of the proposed project from the standpoint of fish and wildlife protection, we request that the EIR contain the following specific information:

1. A description of the environment in the vicinity of the project from both a local and regional perspective, including an aerial photograph of the area with the project site outlined.

2. A complete discussion of the purpose and need for the project and each of its alternatives.

3. A complete description of the proposed project, including the limits of development, grading, and fuel modification zones.

4. Quantitative and qualitative assessments of the biological resources and habitat types that will be impacted by the proposed project and its alternatives. An assessment of direct, indirect, and cumulative project impacts to fish and wildlife associated habitats, including growth-accommodating effects of the project (e.g., increased population, increased development, increased traffic). All facets of the project (e.g., construction, implementation, operation, and maintenance) should be included in this assessment. Proposed developments in the surrounding area should be addressed in the analysis of cumulative impacts.

   This assessment should include a list of Federal candidate, proposed, or listed species; State-listed species; and locally sensitive species that are on or near the project site, including a detailed discussion of these species and information pertaining to their local status and distribution. We are particularly interested in any and all information and data pertaining to potential impacts to populations of federally listed species.

   The analysis of impacts to biological resources and habitat types should include detailed maps and tables summarizing specific acreages and locations of all habitat types, as well as the number and distribution of all Federal candidate, proposed, or listed species; State-listed species; and locally sensitive species, on or near the project site that may be affected by the proposed project or project alternatives.

5. A detailed discussion of measures to be taken to avoid, minimize, and offset impacts to biological resources.

6. A detailed analysis of impacts of the proposed project on the movement of wildlife and measures proposed to avoid, minimize, and offset impacts to wildlife movement.

7. An assessment of potential impacts to wetlands and jurisdictional waters of the United States. Section 404 of the Clean Water Act prohibits the unauthorized discharge of dredged or fill material into such waters, including wetlands. This section also provides that the U.S. Army Corps of Engineers (Corps) may issue permits for discharges of dredged or fill material into jurisdictional waters and wetlands. Potential areas of Corps jurisdiction should be evaluated and wetlands should be delineated using the methodology set forth in the Corps' Wetland Delineation Manual (Environmental Laboratory 1987). The EIR should disclose all impacts to jurisdictional waters and wetlands, and proposed measures to be taken to avoid and minimize impacts, and mitigate unavoidable impacts.

We appreciate the opportunity to comment on the referenced NOP. Should you have any questions pertaining to these comments, please contact Jonathan Snyder of my staff at (760) 431-9440.

Sincerely,

Karen A. Goebel

For Karen A. Goebel
Assistant Field Supervisor

TRANSPORTATION CORRIDOR AGENCIES

January 16, 2004

Ms. Linda Hagthrop
RELOOC Project Manager
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: Notice of Intent to Prepare Draft Environmental Impact Report #588

Dear Ms. Hagthrop,

The Transportation Corridor Agencies (TCA) wishes to thank you for the opportunity to review and comment on the Notice of Preparation for the Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Olinda Alpha Landfill Implementation project. Please note that the TCA previously provided comments in 2002 on the proposed project and would like to have those as well as the following additional comments incorporated into the Draft EIR.

1. The figures referenced in the January 8, 2004, NOP were not included in the document for review. The TCA previously provided comment regarding some inaccuracies related to the maps contained in the original NOP and would like to verify that the maps have been corrected.

2. The TCA would like to review any future documents related to the proposed project and requests continued coordination on projects near the Toll Roads.

Should you have any questions regarding this letter, please contact me at (949) 754-3475.

Sincerely,

Valarie McFall
Principal Environmental Analyst

San Joaquin Hills
Corridor Agency

Chairwoman:
Linda Lindholm
Laguna Niguel

TRANSPORTATION CORRIDOR AGENCIES

Foothill/Eastern
Corridor Agency

Chairman:
Scott Diehl
San Clemente

November 12, 2002

Ms. Linda Hagthrop
RELOOC Project Manager
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: Notice of Preparation

Dear Ms. Hagthrop,

The following are comments on the Integrated Waste Management Department NOP regarding the Regional Landfill Options for Orange County (RELOOC) Phase 1:

1. Figure 1, Orange County Landfills. State Routes 241 and 133 are incorrectly shown as "231" on the map. Road identification needs to be corrected.

2. Figure 4, Prima Deshecha Landfill Location Map. The map incorrectly identifies the proposed extension of the Foothill Transportation Corridor – South (FTC-South), State Route 241 as the "CP Alignment." This alignment is now referred to as the Far East Corridor Complete Alternative. As discussed below there are now also additional alignments that are being studied for the extension of the FTC-South that need to be included in this map and evaluated as part of the Draft Environmental Impact Report for the RELOOC project.

3. The Foothill/Eastern Transportation Corridor Agency (TCA) is currently preparing the Environmental Impact Statement/Subsequent Environmental Impact Report (EIS/SEIR) for the South Orange County Transportation Infrastructure Improvement Project (SOCTIIP), which will study various transportation corridor improvements in southern Orange County. TCA submitted a SOCTIIP Notice of Preparation (NOP) for public and agency review dated June 7, 2002, and a copy is attached for your information. The SOCTIIP NOP shows several proposed alignments to extend the FTC-South, which cross the Prima Deshecha Landfill and have the potential to impact landfill operations. These FTC-South alignments should be included for consideration in the RELOOC EIR #558.

Certain alternatives proposed in the NOP specify an increase in the amount of tons per day (TPD) allowed at the Prima Deshecha Landfill, which would constitute an increase in the amount of vehicle trips as well. The TCA's proposed FTC-South project could easily accommodate this increase. However, the Agency requests the County coordinate with us and supple traffic data for inclusion into your environmental studies currently underway.

Sincerely,

Macie Cleary-Milan

Macie Cleary-Milan
Deputy Director, Environmental and Planning

Enclosures

cc:

City of Brea

February 3, 2004

Mr. Ray Hull
RELOOC Project Manager
County of Orange
Integrated Waste Management Department
320 N. Flower Street
Suite 400
Santa Ana, CA 92703

SUBJECT: COMMENTS ON NOP FOR RELOOC EIR

Dear Mr. Hull:

I am writing in response to the County's Notice of Preparation for the Environmental Impact Report for the RELOOC project. The City of Brea appreciates the opportunity to comment on the scope of the EIR. Generally, we feel the EIR must provide analysis and mitigation of all potential impacts that may affect the City of Brea, with special emphasis on any anticipated impacts to Brea residents. These include a focus in the following areas:

Traffic – The EIR should provide a comprehensive analysis of traffic impacts associated with the project. Specific emphasis on truck traffic impacts needs to be explored. Associated impacts such as noise, vibration, and air quality (particularly related to diesel trucks) also merit emphasis in the document. Information should include specifics on anticipated daily trips and impacts to intersections and roadways within the City of Brea and the surrounding communities.

Air Quality – Appropriate analysis related to not only vehicle emissions associated with landfill activity, but also of any on-going effects of landfill operation to air quality should be analyzed. A specific discussion on odors is merited, particularly as it relates to new nearby residential land uses and any impact. Air Quality discussion regarding on-site power generation equipment is also desired.

Aesthetics – The EIR should provide a through discussion of aesthetic impacts anticipated with the proposed vertical and horizontal expansion of the landfill. A comprehensive view shed analysis is merited. Appropriate mitigation measures, including landscaping, designed to visually blend the landfill into the natural surrounding landscape should be proposed for implementation.

Civic & Cultural Center • 1 Civic Center Circle • Brea, California 92821-5732 • 714/990-7600 • FAX 714/990-2258

Noise – In addition to traffic noise, the EIR should analyze other noise issues associated with landfill operations. These include noise from trash moving equipment, graders, etc. which operate on-site. Additionally, a review of COGEN electrical generators and other similar equipment which operate at the site should be included. Appropriate mitigation measures should be proposed wherever significant impacts are anticipated. Mitigation of any anticipated "nuisance noise" (less than significant, but audible to near-by residents) should also be considered within any proposal to modify the landfill.

Hydrology – The EIR should provide discussion of potential impacts to hydrology/drainage/water quality, particularly as they relate to nearby residential uses (e.g. potential for leaching and impact to landscaping on nearby properties).

Hazards – The EIR should provide a comprehensive discussion of the potential for health impacts, particularly as they relate to nearby residential land uses. Specific discussion of the potential for impacts as they may differentiate between adults and children is desired.

Biology—The City's General Plan contains Goals and Policies related to preserving and maintaining wildlife and animal movement corridors as well as preserving open space and natural habitat and vegetation communities. The EIR should review the potential for impacts to these resources and provide mitigation as appropriate.

Thank you for the opportunity to comment on the NOP. Feel free to reach me at (714) 990-7674 if you should have any questions regarding our comments.

Sincerely,

David M. Crabtree, AICP
City Planner

CC Tim O'Donnell, City Manager
Charles View, Development Services Director

ORANGE COUNTY FIRE AUTHORITY
P.O. Box 86, Orange, CA 92856-0086 • 145 South Water St., Orange, CA 92866

Chip Prather, Fire Chief *(714) 744-0400*

February 3, 2004

County of Orange
Integrated Waste Management Division
Attn; Ray Hull
320 N. Flower St. #400
Santa Ana, CA 92703

Re: **Olinda Alpha Landfill NOP**

Dear Mr. Hull,

Thank you for the opportunity to comment on the subject project. The Orange County Fire Authority does not believe this will be of any significant impact to our agency in regards to additional resources. Of concern to our agency is continued emergency access, fire lanes, and egress at the project. Please note the following comments:

Page 16 14.Hazards: Please note that fueling on-site requires UST/AST permits and disclosure from OCFA-Hazardous Materials Service Section.

Page 17, (g) We believe g should be" less than significant".There are impacts to the Orange County Emergency Plan and the OC HazMat Area Plan. The City of Brea emergency plan does not address unincorporated issues.

Page 19 15. Public Services: The nearest Fire Station listed is Brea #4. However they do not respond to that location. The nearest OCFA station that handles calls at the Olinda landfill is FS34 in Placentia. It should be mentioned that the landfill is within the Very High Fire Severity Hazard Zone. All buildings must conform to wildland occupancy standards.

Page 19 (a)(ii) Same is true for police, Brea is closer but does not necessarily respond. Police response is by OC Sheriffs.

While no additional public safety resources are needed as a result of this project, all standard conditions and guidelines will be applied to the project during the normal review process. If you have any additional questions, please contact me at (714) 744-0420.

Sincerely,

Michele Hernandez
Management Analyst, Strategic Services

DEVELOPMENT SERVICES DEPARTMENT
303 West Commonwealth Avenue. Fullerton, California 92832-1775

Telephone • (714) 738-6540
Fax • (714) 738-3104
Web site • www.ci.fullerton.ca.us

February 11, 2004

Linda Hagthrop
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Via Fax

Subject: Review of Environmental Documents for the Regional Landfill Options for Orange County Strategic Plan – Olinda Alpha Landfill Implementation

Dear Ms. Hagthrop:

The City of Fullerton has reviewed the Notice of Intent to prepare Draft Environmental Impact Report #588 and related documentation for the above mentioned project submitted by your agency for our review and comment. The City of Fullerton requests that the Integrated Waste Management Department continue to work with the city to support our diversion efforts in accordance with AB 939. The City believes that alternative measures should be explored to reduce the amount of waste going directly to the County landfills. Accordingly, an alternative should be considered in the DEIR which incorporates diversion measures and could result in reduced landfill expansion.

Thank you for giving us the opportunity to review the documents and to comment on potential issues that may affect the City of Fullerton. If you should have questions regarding this response, please call me at (714) 738-6884. We look forward to the opportunity to review the DEIR when it is circulated for review.

Sincerely,

Heather Sowers
Assistant Planner

Cc: Joel W. Rosen, AICP, Chief Planner

AERA

February 9, 2004

VIA FACSIMILE & FEDERAL EXPRESS

Linda Hagthrop
Public Information Officer
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

SUBJECT: NOTICE OF PREPARATION FOR THE RELOOC STRATEGIC PLAN – OLINDA ALPHA LANDFILL IMPLEMENTATION

Dear Ms. Hagthrop:

Thank you for the opportunity to provide comment regarding the "Notice of Preparation for the RELOOC Strategic Plan - Olinda Alpha Landfill Implementation" that we received on January 12, 2004. Aera Energy owns or controls 265 acres of property on both sides of Valencia Avenue extending essentially from the intersection of Rose Drive / Birch Street to Lambert Road as well as the land on the west side of Valencia approximately 600 feet north of its intersection with Lambert Road. This property, currently in use for company oil production operations, is designated for future residential development on both the Orange County and City of Brea General Plans. We expect the conversion to residential use will occur sometime during the current operating permit window for the Landfill (i.e. before 2013). Therefore, we are concerned about the potential eight-year extension of the life of landfill operation, the related continuation and possible increase in the level of trash truck traffic along a major frontage of our property.

The EIR should consider the full range of impacts (noise, traffic, safety, air quality, aesthetics, etc.) that an extension and expansion of landfill operations will have on these uses. The proposed landfill extension project will clearly require significant mitigation measures to eliminate impacts to properties along the haul route the entire length of Valencia Avenue. The EIR should specify mitigation measures, and examine alternatives to minimize the impact to the properties along Valencia Avenue.

We understand other property owners and Brea residents have expressed similar concerns and requested the EIR consider alternative access possibilities that could minimize environmental impacts associated with continuing to utilize Valencia Avenue for Landfill access. As you may know, we are currently in the process with both the County of Orange and the County of Los Angeles on a proposed master planned community involving our two county, 3,000-acre ownership north and west of the Landfill. This project is referred to as the Aera Master Planned Community (EIR project number 599). We understand there has been some discussion about evaluating possible new landfill access from the 57 freeway-Tonner Canyon interchange. In deference to our master planning work on our nearby property, we request that any such new access that might be studied should take into consideration two key issues. First, the Tonner Canyon interchange area will represent one of our primary project entry points and any potential landfill traffic should be carefully planned to avoid conflict with our project circulation and existing traffic using Brea Canyon Road. Second, it is critical that any access through Tonner Canyon be carefully designed to respect and minimize any disruption to important habitats and wildlife corridor connectivity. Our master plan incorporates a major open space linkage of several hundred acres through our property linking to

Aera Energy LLC • 3030 Saturn Street, Suite 101 • Brea, CA 92821 • (714) 577-9154

protected lands in the vicinity of the Tonner Canyon freeway interchange and ultimately connecting to other protected open space west of Harbor Boulevard north of La Habra Heights and beyond.

In closing, we appreciate the importance of maintaining efficient landfill operations in Orange County. We are willing to work with the County, and all stakeholders, to address issues associated with the possible eight-year extension of these operations.

Sincerely,

George L. Basye
Vice President

GLB:mep

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

407 W. IMPERIAL HWY. SUITE H, PMB 230, BREA, CALIFORNIA 92821
TELEPHONE: (310) 589-3230
FAX: (310) 589-2408

February 6, 2004

Ray Hull
RELOOC Project Manager
County of Orange Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92703

Comments on Notice of Preparation for Regional Landfill Options for Orange County Strategic Plan-Olinda Alpha Landfill Implementation

Dear Mr. Hull:

In a letter dated November 6, 2002 (enclosed), the Wildlife Corridor Conservation Authority commented on the Notice of Intent to Prepare (NOP) Draft Environmental Impact Report (DEIR) #588 for Regional Landfill Options for Orange County (RELOOC) Phase I. We request that you incorporate those comments into the DEIR for the revised project, the RELOOC Strategic Plan-Olinda Alpha Landfill Implementation. Please contact Judi Tamasi of our staff at (310) 589-3230 ext. 121 if you have any questions.

Sincerely,

Glenn Parker
Chair

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

407 W. IMPERIAL HWY. SUITE H. PMB 230. BREA, CALIFORNIA 92821
TELEPHONE: (310) 589-3230
FAX: (310) 589-2408

November 6, 2002

Linda Hagthrop
RELOOC Project Manager
County of Orange Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92703

Comments on Notice of Preparation for Regional Landfill Options for Orange County Phase I

Dear Ms. Hagthrop:

The Wildlife Corridor Conservation Authority (WCCA) has reviewed the Notice of Intent to Prepare (NOP) Draft Environmental Impact Report (DEIR) #588 for Regional Landfill Options for Orange County (RELOOC) Phase I, proposed expansions of Frank R. Bowerman and Olinda Alpha Landfills. WCCA was created to provide for the proper planning, conservation, environmental protection and maintenance of the habitat and wildlife corridor between the Whittier-Puente Hills and the Cleveland National Forest in the Santa Ana Mountains. With respect to the proposed project, WCCA's primary goals are to preserve the wildlife movement areas in addition to other ecological, recreational, and visual resources within the Puente-Chino Hills. In summary, the DEIR should include waste reduction as an integral project component and the establishment of a mitigation fund for land acquisition/preservation.

The proposed project consists of the vertical and horizontal expansion of the Olinda Alpha and Frank R. Bowerman Landfills to meet the County's short-term solid waste disposal needs. Specifically, the Olinda Alpha landfill would be expanded vertically 115 feet and the existing refuse footprint would be expanded approximately 33 acres in the northeast part of the existing property boundary. The project would extend the life of the Olinda Alpha Landfill from its permitted closure date of 2013 to approximately 2021. Implementation of bio-cell technology at the Frank R. Bowerman and Prima Deshecha landfills is also being considered as part of this project. This NOP covers Phase 1 of the RELOOC project. Please note that the following comments are limited to project elements for the Olinda Alpha Landfill which is located within WCCA's jurisdiction.

Need for Emphasis on Waste Reduction

Several strategies for Phase I are proposed, including promoting recycling (NOP, p. 1). The DEIR should also explicitly identify promoting waste reduction as a strategy for Phase 1. The Strategic Plan should be amended to include this strategy and corresponding implementation measures, if it is not already included. Waste reduction would help reduce environmental impacts associated with the landfill expansion.

Need for Mitigation Fund for Land Acquisition/Preservation

Although much of the Olinda Alpha Landfill project site is currently disturbed from existing landfill operations, the Olinda Alpha Landfill essentially abuts Tonner Canyon to the north and west. Tonner Canyon is a critical wildlife movement area that supports numerous sensitive ecological resources. Chino Hills State Park and Carbon Canyon are located to the east of the landfill site. As described below, the Olinda Alpha Landfill expansion and extension of landfill closure date potentially would result in numerous significant adverse ecological, recreational, and visual impacts. To adequately mitigate those impacts, the DEIR must include a mitigation measure that establishes a fund to pay for land acquisition in the concerned portion of the Chino Hills. (Fees are collected for the operation of the Puente Hills Landfill; these fees are used for land acquisition.) The DEIR must provide enough detail to ensure that this fund will be expended for land acquisition and preservation in a timely manner. The mitigation measures should include the requirement to generate sufficient funding to acquire natural land contiguous to or in the near vicinity of the Chino Hills core habitat. This land shall also be available for passive recreational uses such as hiking. The mitigation measures should also require that the land be acquired, and that recreational facilities and/or opportunities be provided, within two years of permitting. The mitigation measures in the DEIR should state that in the event of non-compliance with this timeframe, additional mitigation funds and/or acreage shall be required.

Recreational Impacts

The project potentially would result in significant impacts to recreational resources. The Olinda Alpha Landfill is shown on the County of Orange Master Plan of Regional Recreational Facilities as a proposed regional park (NOP, p. 24). The proposed project would extend the landfill's closure date by providing additional capacity and therefore would delay the use of this site as a recreational facility. This would delay a proposed City of Brea trail on the site, and potentially would delay a Diamond Bar Trail (a proposed regional trail) in the vicinity of the landfill. The NOP states the project will not foreclose the recreational opportunity (NOP, p. 24). The DEIR should clarify the types and locations of proposed recreational uses and other regional park uses on the site, if available, and analyze the impacts to those proposed uses.

Visual Impacts

The project may result in significant adverse visual impacts. The Olinda Alpha Landfill is currently visible from numerous public viewing areas, such as Chino Hills State Park, Carbon Canyon Regional Park, Carbon Canyon Road (which is given special consideration in the Brea General Plan), Lambert Road, State Routes 55, 57, and 91, and the Firestone Boy Scout Reservation (NOP, p. 20). Because the landfill will be expanded vertically, more of the landfill will be visible from these locations. The DEIR should provide line-of-sight pre- and post-project analyses from these public viewing areas. Specifically, the DEIR should address the visual impacts from the portion of the Firestone Boy Scout Reservation purchased by the City of Industry land to the north, should it become public parkland in the future.

Furthermore, the DEIR should acknowledge that if the landfill closure date is extended, then the creation of a regional park on the landfill site will be delayed, prolonging the adverse views of the active landfill from these parks and other public viewing areas.

Impacts to Biological Resources

Given its key location in the Puente-Chino Hills wildlife corridor, the DEIR should fully disclose the extent of known or potential wildlife movement and utilization adjacent to and in the vicinity of the site, and on the site (if any).

Per the NOP (p. 19), the proposed horizontal expansion at the Olinda Alpha Landfill is not expected to impact an existing wildlife movement corridor on the ridgeline east of the horizontal expansion because disturbance for this expansion will not extend into this ridgeline. However, the NOP points out that landfill expansion may generate dust, noise, or light emissions that could potentially disturb animal behavior, including possible shifts in the use of this wildlife corridor (habitat area).

The DEIR must fully analyze these potential effects to this adjoining habitat. There is the potential that lighting will affect wildlife movement and the DEIR must explicitly require that lighting not shine or spillover into natural habitat areas. Although much wildlife movement occurs at night, animals such as deer, bobcat, and coyote are seen during the day and may be impacted by the additional human and vehicle use, noise, and dust during the day. These potential impacts must be disclosed in the DEIR.

According to the NOP (p. 18), the proposed expansions will not extend into any areas not previously disturbed on the site. The DEIR should clarify what plant communities are present, if any, in the area of the proposed horizontal expansion, even if they are disturbed.

To reiterate, the DEIR should include waste reduction as an integral project component and the establishment of a mitigation fund for land acquisition/preservation. Thank you for the opportunity to comment. Please contact Judi Tamasi of our staff at (310) 589-3230 ext. 121 if you have any questions.

Sincerely,

Bob Henderson
Chair

Hull, Ray

From: Amirhosseini, Susan on behalf of info
Sent: Monday, February 09, 2004 1:11 PM
To: Hull, Ray
Subject: FW: Forward to Ray Hull

-----Original Message-----
From: Vivavargas@aol.com [mailto:Vivavargas@aol.com]
Sent: Monday, February 09, 2004 12:54 PM
To: info@iwmd.ocgov.com
Cc: Vivavargas@aol.com
Subject: Forward to Ray Hull

Dear Ray,

When I spoke to you Friday last you stated that the extention for comments on the Alpha Landfill NOP would be today (Monday). You also said that a copy of the NOP and Draft EIR could be found on the www.savebrea.org website. Unfortunately I can not open the PDF files on that website.....(probably due to my kids pop up junk that just kills my computer). Anyway, I would like to submit comments on the NOP and will e-mail then here and hope you will find this method acceptable.
Respectfully, Steven C. Vargas

1) At the end of the current MOU, year 2013, the County is obligated to remediate the finished landfill and turn over a 600 acre "natural park". What is the total acreage available or accessable to the people of Brea if the landfill is to close as scheduled?
a) What is the value of this land?
b) What are the social and environmental impacts of NOT turning over this land in 2013 as agreed?

1) Prior to the agreements contained in the 1994 MOU, What was the elevation of landfill and what was projected elevation (pre 1994 MOU) to be considered "at capacity"
a) As a result of the 1994 MOU what was the "verticle expansion" elevation agreed to? How much additional capacity did this allow? What is the current elevation of the landfill (January, 2004)?
b) What is the proposed elevation should this new extention/expansion be allowed? What is the new capacity that this would allow?
c) What are the visual impacts to the people of Brea and north orange County residents as a result of the propose elevation increases?

3) The people fo Brea have received conflicting quotes as to the amount of host fee that the City collects. Recent quotes from City Manager Tim O'Donnel state $600,000 per year. The County website states $918,000. How much per year in total revenue (any source) does the city of Brea receive per year from land fill operations?
a) Is there any restriction on where this money is spent?

b) Is this revenue stream only from "Imported Trash?"

c) If the city currently collects $00.92 per ton, what per ton amount has the County initially proposed for gate fee increase to purchase Open Space or pay for a Sports ParK? What would be the corresponding increase to trash rate to Brea residents?

4) In 2001, the City of Brea did a study to change the speed limit on Valencia Rd. to 35 MPH. What were the traffic counts going to the landfill?

a) If you do not have access this the City's numbers, what are your most recent counts passing the Gates at Alpha landfill?

b) The access route to the landfill where restricted in 1997 to remove truck traffic from Lambert Rd. What is the impact of this local decision to hauling routes, noise and pollution to residents on Imperial Hwy, Kramer and Valencia Rd?

I have more and will forward in a separate memo. Thank you .

Steven C. Vargas
489 Brittany Lane
Brea, Ca 92821
714-990-8847
fax 714-990-6893

Please confirm via e-mail receipt and acceptance of these e-mail comments to the NOP process.

Hull, Ray

From: Amirhosseini, Susan on behalf of info
Sent: Monday, February 09, 2004 1:44 PM
To: Hull, Ray
Subject: FW: Forward to Ray Hull

-----Original Message-----
From: Vivavargas@aol.com [mailto:Vivavargas@aol.com]
Sent: Monday, February 09, 2004 1:29 PM
To: info@iwmd.ocgov.com
Subject: Forward to Ray Hull

Dear Ray,

Additional comments and question regarding the NOP for the Apha Landfill in Brea:

1) The Alpha Landfill was established in 1963. The people fo Brea have shouldered the burden of landfill operations and traffic for over 40 years. With the projected closure in 2013, this will be nearly 50 years of operation. The county has to plan for 50 years out regarding landfill operations, Is the county current on planning projection for the next 50 years of landfill operations?

a) Where is the proposed site for future landfill operations in Orange County?

b) The Board of Supervisors are attempting to postpone a tough decision regarding the "siteing" of a new landfill, what are the projected costs associated with land aquisition by allowing the Board of Supervisors to get away with this breech of responsiblity?

1) After the 1994 County bankrupcy, numerous meetings where held with county officials and IMWD Board Memebers regarding the privitization of landfill operations, specifically at the Alpha Landfill in Brea. Where can the public access information regarding these meetings?

a) One of the proposals considered concerned Taromina Industries, who now holds the importation contract with LA trash haulers to access the Alpha Landfill in Brea. What are the financial advantages of these type of "transfer station" agreements with local trash operators? How does the County benefit? and how do these agreements benefit the people of Brea?

b) A recent proposal by IWMD Board Member Bev Perry is to increase the use of "transfer stations" to consolidate trash prior to travel to local landfills, thereby lessening truck trips per day. What are the economic costs to local business owners (gardeners, home repairmen, ect.) and to average consumers if access to the Alpha Landfill was restricted to 20- ton double loader trucks?

3) The people fo Brea have compained for years about increases to traffic on arterial roads. What is the feasibility of building an access road off Tonner Canyon for direct access to the dump?

a) Tonner Canyon is currently abondoned oil property in need of remediation, who is respondible for this remediation if an access road where to be built?

b) How does the cost of building an access road compare to paying increased gate fee's for local road improvements and soundwalls?

4) Local Councilman Marty Simonoff is employed by, and his family owns a major LA trash hauler that imports trash to the Alpha Landfill through an intermediary transfer company. Has the county looked into this relationship to determine if a conflict of interest exists?

a) If so, when? what were the results?

b) After the 2000 elections in Brea, Taromina Industry (sold to Republic) gave up its transfer station agreement to its Anaheim facility to a facility in Stanton (I believe it is in Stanton??), did this have anything to do with conflict of interest issues arising from votes taken in Brea? Has the County ever looked into this coincidence?

Unfortunately due to the lack of access to NOP process and information, these are the only question I have on the top of my head. I would have liked more time to study the material and look forward to continued commmunications. Thank you for your assistance in this matter.

Steven C. Vargas
489 Brittany Lane
Brea, Ca 92821
714-990-8847
fax 714-990-6893

Please confirm via e-mail receipt and acceptance of these e-mail comments to the NOP process.

COUNTY OF ORANGE
HEALTH CARE AGENCY

REGULATORY HEALTH SERVICES
ENVIRONMENTAL HEALTH

Excellence
Integrity
Service

JULIETTE A. POULSON, RN, MN
DIRECTOR

MIKE SPURGEON
DEPUTY AGENCY DIRECTOR
REGULATORY HEALTH SERVICES

STEVEN K. WONG, REHS, MPH
DIRECTOR
ENVIRONMENTAL HEALTH

MAILING ADDRESS:
2009 EAST EDINGER AVENUE
SANTA ANA, CA 92705-4720

TELEPHONE: (714) 667-3600
FAX: (714) 972-0749
E-MAIL: environhealth@hca.co.orange.ca.us

February 9, 2004

Ray Hull
RELOOC Project Manager
County of Orange IWMD
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: **Notice of Preparation and Environmental Analysis Checklist for Draft EIR 588 Olinda Alpha Landfill (SWIS No. 30-AB 0035), Brea**

Dear Mr. Hull:

On January 12, 2004, the Solid Waste Local Enforcement Agency (LEA) received a Notice of Preparation (NOP) for Draft EIR 588 and Environmental Analysis Checklist for implementation of strategic plan of Regional Landfill Options for Orange County (RELOOC) at Olinda Alpha (OA) sanitary landfill. Orange County Integrated Waste Management Department (OCIWMD) prepared this CEQA document. After review, the LEA has the following comments:

I. NOP

1. Section 2.2 – County of Orange Solid Waste Disposal System, page 4: *"Importation of MSW from Los Angeles, San Bernardino and Riverside Counties will cease in 2015. At about that time, Olinda Alpha Landfill will need to import cover material if the landfill closure date is extended"*. The LEA understands, however, that existing soil stockpiles at OA will be depleted (therefore the site will be dependent on imported soil) by 2013.

2. Section 2.2 – County of Orange Solid Waste Disposal System, page 7, Olinda Alpha Landfill: *"The IWMD is in the process of increasing the daily tonnage limit to 10,000 TPD for up to 36 days per year to allow for increased tonnage days."* When preparing the EIR, discussion of this proposed daily tonnage increase should be updated as OCIWMD withdrew the application for OA's SWFP revision for this change.

3. Section 2.2 – County of Orange Solid Waste Disposal System, page 9, Prima Deshecha Landfill: OCIWMD should consider including a brief discussion of the SWFP revision process (along with the changes in both design and operations) currently underway.

II. Environmental Analysis Checklist

1. Section 7 – Air Quality, page 10: *"No substantial modifications to existing support structures at the landfill are anticipated under the proposed project"*. In order to maintain control of lateral and vertical migration of landfill gas, it is very likely that additional flare(s) will need to be installed, as a result of OA expanding horizontally and vertically.

2. Section 14 – Hazards, page 16: When preparing the EIR, OCIWMD should consider analyzing the potential of subsurface off-site migration of landfill gas.

3. Section 14 – Hazards, page 16: *"This includes visual inspection of loads at the fee booths and the active face of the landfill and the rejection of loads containing hazardous wastes"*. When preparing the EIR, OCIWMD may want to include discussion of radioactive waste and the fact that fee booths at OA are equipped with radiation sensors.

4. Section 14 – Hazards, page 18: *"Current practices at this landfill to reduce the potential for fire and for rapid control of fires, should they occur, include keeping fire extinguishers on-site, frequent site watering for dust control, on-site water storage, prohibiting smoking on-site, clearing vegetation and fire breaks"*. OA landfill is also equipped with a fire hydrant located near the flare station and wharf valves.

We look forward on cooperatively working with you on this project. If you have any questions, please contact me at (714) 667-2026.

Sincerely,

Ossama "Sam" Abu-Shaban, PE, DEE
Senior Civil Engineer
Solid Waste Local Enforcement Agency
Environmental Health

cc: Tad Gebre-Hawariat, CIWMB
Raymond Seamans, CIWMB

Terry Tamminen
Agency Secretary
Cal/EPA

Department of Toxic Substances Control

Edwin F. Lowry, Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

February 6, 2004

Mr. Ray Hull
County of Orange Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92702-4048

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY (RELOOC) STRATEGIC PLAN - SCH # 2004011055

Dear Mr. Hull:

The Department of Toxic Substances Control (DTSC) has received your Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the above-mentioned Project.

Based on the review of the document, DTSC's comments are as follows:

1) The draft EIR needs to identify and determine whether current or historic uses have resulted in any release of hazardous wastes/substances at the site.

2) The draft EIR needs to identify any known or potentially contaminated sites within the proposed Project area. For all identified sites, the draft EIR needs to evaluate whether conditions at the site pose a threat to human health or the environment.

3) The draft EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may require remediation and the government agency to provide appropriate regulatory oversight.

4) If during construction of the project, soil and/or groundwater contamination is suspected, suspend construction in the area and implement appropriate Health and Safety procedures. If it is determined that contaminated soil and/or groundwater exist, the draft EIR should identify how any required investigation and/or remediation will be conducted and which government agency will provide appropriate regulatory oversight.

DTSC provides guidance for preparation of a Preliminary Endangerment Assessment (PEA), and cleanup oversight through, the Voluntary Cleanup Program (VCP). For additional information on the VCP, please visit DTSC's web site at www.dtsc.ca.gov.

If you have any questions regarding this letter, please contact Ms. Rania A. Zabaneh, Project Manager, at (714) 484-5479.

Sincerely,

Greg Holmes
Unit Chief
Southern California Cleanup Operations Branch
Cypress Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Unocal Land & Development Company
A Unocal Company
376 South Valencia Avenue
Brea, California 92823
Telephone (714) 577-3504
Facsimile (714) 577-1717
E-mail JAMartin@unocal.com

UNOCAL 76

February 6, 2004

James A. Martinez
Project Manager

Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

Attn: Ray Hull, RELOOC Project Manager

RE: **Olinda Alpha Landfill**

Dear Mr. Hull:

Unocal would like to request that it be placed on the mailing list and be notified of any meetings related to the Olinda Alpha Landfill. Mail all correspondence to the undersigned at the above address.

We would also like to express our disappointment that we were not notified directly, since Unocal property is on the direct route to the landfill. Unfortunately we did not attend the January 22, 2004 meeting at City Hall because we were not notified.

With regard to the NOP, the scope and content of the EIR should include the impacts of truck traffic on Imperial Highway and Valencia Avenue. Consideration should be given to providing alternate access routes to the landfill which should include Tonner Canyon, North of the landfill.

For many years Unocal's facility on Valencia has been burdened with the traffic to the landfill. We would like to be actively involved in the approval process.

Sincerely,

James A. Martinez

JAM:anl

Concerns regarding the Olinda Alpha Landfill and the extension to 2021
January 22, 2004

Erik and Tina Johnson
660 Partridge Drive
Brea, CA 92823
(714) 961-1707
ejand22@sbcglobal.net

1. Traffic danger
    a. Large trucks at high speeds on Valencia Avenue
        i. Children riding bikes, skateboards, scooters are at risk from being hit and injured or killed by a large, speeding truck
        ii. The horse trail on Valencia Avenue is also vulnerable to accidents due to the high volume of trucks
    b. Driver competency
        i. There is no place for a safe crash on Valencia Avenue; houses are in close proximity to the east side of the street.
        ii. If there is a crash on the west side, there is a high fire danger area in the ravine
2. Thoroughfare for new school
    a. Children (ages 11-14) will be walking up and down Valencia (school hours coincide with landfill hours)
    b. Even if bus service offered to affected children, after school hours activities (sports, drama club, etc.) would prevent some of them from using the bus
3. Traffic adjacent to new sports park
    a. People will be parking on Valencia Avenue (especially Saturdays)
    b. Children will be present in area on Saturdays and they will be all over the property and on the street (see a.)
4. Noise
    a. Trucks create high volume noise from approx. 5:30 a.m. to 5:30 p.m., even when the landfill has closed for the day there is still traffic from those arrived too late.
    b. Birds are constantly flying overhead and are loud and leave droppings all over the place.
    c. The generating station at the landfill causes constant noise.
5. Pollution
    a. Trucks spew fumes and exhaust. They also sometimes drop debris from their loads on the road.
    b. Landfill may have a negative impact on groundwater and air quality.
6. Break-downs
    a. Traffic is often blocked on Valencia Avenue due to breakdowns or violation stops by Brea Police Department. Valencia Avenue is supposed to be a no-stopping zone
    b. Trucks, weekly, park on Sandpiper Way to either receive vehicle repairs or wait for a tow truck
7. Incursions into neighborhood
    a. There have been numerous wrong turns onto Sandpiper Way.

   b. Requests to park loads overnight on Sandpiper and Partridge, this has happened twice in less than one year's time.

8. Smell
   a. Diesel fumes from the truck traffic are a constant.
   b. The landfill on occasion when the winds blow just right produces an unpleasant smell.

9. Hours
   a. Trucks often arrive early and late, before 6 a.m. and after 5 p.m.
   b. The sign posting the landfill hours in on Lambert Road, but trucks are prohibited from Lambert. There should be signs on both Imperial Highway and Valencia Avenue.

Flores, Jerry

From: Ruiz, Gilberto
Sent: Tuesday, January 13, 2004 1:04 PM
To: Flores, Jerry
Subject: FW: Public inquiry re: RELOOC NOP & Public Meeting

Importance: High

FYI.

Let's prepare a response folder for the NOP/IS. Thanks.

-----Original Message-----
From: Christine Arbogast [mailto:carbogast@bas.com]
Sent: Monday, January 12, 2004 11:46 AM
To: Ruiz, Gilberto; Benner, Michael; Doug MacPherson
Subject: FW: Public inquiry re: RELOOC NOP & Public Meeting
Importance: High

The fun begins....

-----Original Message-----
From: Hagthrop, Linda [mailto:Linda.Hagthrop@iwmd.ocgov.com]
Sent: Monday, January 12, 2004 10:56 AM
To: Hull, Ray
Cc: IWMD-PUBLIC AFFAIRS; Richmond, Bob; Arnau, John; Stirrat, Bryan; Arbogast, Christine
Subject: Public inquiry re: RELOOC NOP & Public Meeting
Importance: High

I received the first call this morning on this subject from Tina Johnson, a resident of Olinda Ranch. Her home is on the northern-most street right next to Valencia Ave. Her comments/issues included:

* She is a stay at home mother with 3 small children.
* Her issue is with traffic, traffic and traffic - noise, emissions, frequency hours (they start at 5 am) and safety.
* She pointed out that the exhibit in the NOP was from several years ago and did not show the development.
* She will be at the 1/22 Public Meeting with as many neighbors as she can get to join her.
* She is going door to door circulating a petition to prevent the landfill closure date from being extended past 2013.
* She was aware of the landfill and traffic from the disclosure statement and thought she could handle the traffic until 2013.
* There will be a Jr. High School at Birch and Valencia with children walking to and from school.
* One person has already been killed on Valencia in that area - not by a truck. She stated that a jogger was hit by a van (the driver was reaching for a cell phone).
* She will present a written document with all her issues to both IWMD at the meeting and to the City of Brea.
* She will push to get the City to oppose an extension of the closure date.
* She said it would be OK to increase the tonnage amount received at the site if the 2013 closure date could be retained.

Linda Hagthrop
Public Information Officer
Integrated Waste Management Department
Office: (714) 834-4176
Fax: (714) 834-4057
www.oclandfills.com

State of California - The Resources Agency ARNOLD SCHWARZENEGGER, *Governor*

DEPARTMENT OF FISH AND GAME
http://www.dfg.ca.gov
4949 Viewridge Avenue
San Diego, CA 92123
(858) 467-4201

February 11, 2004

Mr. Ray Hull
Orange County
320 North Flower Street, Suite 400
Santa Ana, California 92702-4048

Notice of Preparation for the Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation Draft Environmental Impact Report (DEIR), Orange County, California (SCH #2004011055)

Dear Mr. Hull:

The Department of Fish and Game (Department) appreciates this opportunity to comment on the above-referenced project, relative to impacts to biological resources. To enable Department staff to adequately review and comment on the proposed project, we recommend the following information be included in the Draft Environmental Impact Report (DEIR), as applicable:

1. A complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, and locally unique species and sensitive habitats.

   a. A thorough assessment of rare plants and rare natural communities, following the Department's May 1984 Guidelines (revised May 2000) for Assessing Impacts to Rare Plants and Rare Natural Communities (Attachment 1).

   b. A complete assessment of sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service.

   c. Rare, threatened, and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, § 15380).

d. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

2. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, should be included.

a. CEQA Guidelines, § 15125(c), direct that knowledge of the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

b. Project impacts should be analyzed relative to their effects on off-site habitats. Specifically, this should include nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed Natural Communities Conservation Planning (NCCP) reserve lands. Impacts to and maintenance of wildlife corridor/movement areas, including access to undisturbed habitat in adjacent areas, should be fully evaluated and provided.

c. A discussion of impacts associated with increased lighting, noise, human activity, changes in drainage patterns, changes in water volume, velocity, and quality, soil erosion, and /or sedimentation in streams and water courses on or near the project site, with mitigation measures proposed to alleviate such impacts should be included.

d. The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

e. A cumulative effects analysis should be developed as described under CEQA Guidelines, § 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

3. A range of alternatives should be analyzed to ensure that alternatives to the proposed project are fully considered and evaluated. A range of alternatives which avoid or otherwise minimize impacts to sensitive biological resources should be included. Specific alternative locations should also be evaluated in areas with lower resource sensitivity where appropriate.

a. The Department considers Rare Natural Communities as threatened habitats having both regional and local significance. Thus, these communities should be fully avoided and otherwise protected from project-related impacts (Attachment 2).

4. Mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats should be discussed. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

   a. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

   b. Areas reserved as mitigation for project impacts should be protected from future direct and indirect impacts. Potential issues to be considered include limitation of access, conservation easements, monitoring and management programs, control of illegal dumping, water pollution, and fire.

   c. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

5. A California Endangered Species Act (CESA) Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that the Department issue a separate CEQA document for the issuance of a 2081 permit unless the project CEQA document addresses all project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a 2081 permit. For these reasons, the following information is requested:

   a. Biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA Permit.

   b. A Department-approved Mitigation Agreement and Mitigation Plan are required for plants listed as rare under the Native Plant Protection Act.

6. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether intermittent or perennial, should be retained and provided with substantial setbacks which preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations.

   a. If the site has the potential to support aquatic, riparian, or wetland habitat, a jurisdictional delineation of lakes, streams, and associated riparian habitats should be included in the DEIR, including a delineation of wetlands pursuant to the U. S. Fish and Wildlife Service wetland definition adopted by the Department[1]. Please note that some wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

   b. The project may require a Lake or Streambed Alteration Agreement, pursuant to Section 1600 *et seq.* of the Fish and Game Code, with the applicant prior to the applicant's commencement of any activity that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank (which may include associated riparian resources) of a river, stream or lake, or use material from a streambed. The Department's issuance of a Lake or Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by the Department as a responsible agency. The Department as a responsible agency under CEQA may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. To minimize additional requirements by the Department pursuant to Section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement[2].

The Department holds regularly scheduled pre-project planning/early consultation meetings. To make an appointment, please call our office at (858) 636-3160.

---

[1] Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

[2] A Streambed Alteration Agreement form may be obtained by writing to: Department of Fish and Game, 4949 Viewridge Avenue, San Diego, CA 92123, by calling (858) 636-3160, or by accessing the Department's web site at www.dfg.ca.gov/1600 .

Thank you for this opportunity to comment. Questions regarding this letter and further coordination on these issues should be directed to Meredith Osborne at (858) 636-3163.

Sincerely,

For William E. Tippets
Deputy Regional Manager
California Department of Fish & Game

Attachments

cc: Department of Fish and Game
File
San Diego

State Clearinghouse
Sacramento

mao/mao

DEVELOPMENT SERVICES DEPARTMENT

303 West Commonwealth Avenue, Fullerton, California 92832-1775

Telephone • (714) 738-6540
Fax • (714) 738-3110
Web site • www.ci.fullerton.ca.us

February 11, 2004

Linda Hagthrop
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Via Fax

Subject: Review of Environmental Documents for the Regional Landfill Options for Orange County Strategic Plan – Olinda Alpha Landfill Implementation

Dear Ms. Hagthrop:

The City of Fullerton has reviewed the Notice of Intent to prepare Draft Environmental Impact Report #588 and related documentation for the above mentioned project submitted by your agency for our review and comment. The City of Fullerton requests that the Integrated Waste Management Department continue to work with the city to support our diversion efforts in accordance with AB 939. The City believes that alternative measures should be explored to reduce the amount of waste going directly to the County landfills. Accordingly, an alternative should be considered in the DEIR which incorporates diversion measures and could result in reduced landfill expansion.

Thank you for giving us the opportunity to review the documents and to comment on potential issues that may affect the City of Fullerton. If you should have questions regarding this response, please call me at (714) 738-6884. We look forward to the opportunity to review the DEIR when it is circulated for review.

Sincerely,

Heather Sowers
Assistant Planner

Cc: Joel W. Rosen, AICP, Chief Planner

California Integrated Waste Management Board

Linda Moulton-Patterson, Chair
1001 I Street • Sacramento, California 95814 • (916) 341-6000
Mailing Address: P. O. Box 4025, Sacramento, CA 95812-4025
www.ciwmb.ca.gov

Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

February 11, 2004

Mr. Ray Hull
Orange County
320 North Flower Street, Suite 400
Santa Ana, CA 92702-4048

Subject: SCH No. 2004011055: Notice of Preparation of a Draft Environmental Impact Report for Regional Landfill Option for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation (Solid Waste Facilities Permit No. 30-AB-0035) Orange County

Dear Mr. Hull:

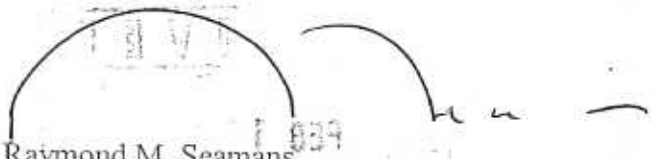
Thank you for allowing the California Integrated Waste Management Board (CIWMB or Board) staff to provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process.

Board staff has reviewed the environmental document cited above and the previous Notice of Preparation circulated under State Clearinghouse No. 2002091031 which described a similar project that included horizontal and vertical expansions of Frank R. Bowerman Landfill and Olinda Alpha Landfill. The current document only includes the expansion of Olinda Alpha Landfill.

Please refer to Board staff comment letter of October 21, 2002 (attached). We have no additional comments at this time. Board staff recommends that you refer to http://www.ciwmb.ca.gov/LEACentral/CEQA/disposal.htm and http://www.ciwmb.ca.gov/LEACentral/CEQA/compost.htm for guidelines on what information Board staff are looking for in their analysis of environmental documents for landfill operation and facilities that may handle compostable material.

If you have any questions regarding this letter or need a copy of our October 21, 2002, letter, please contact me at 916.341.6728 or email me at rseamans@ciwmb.ca.gov.

Sincerely,



Raymond M. Seamans
Permitting and Inspection Branch, Region 4
Environmental Review
Permitting and Enforcement Division
California Integrated Waste Management Board

Attachment

cc: Tadesc Gebre-Hawariat
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Suzanne Hambleton, Supervisor
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Patty Henshaw
County of Orange Health Care Agency
Environmental Health Division
2009 E Edinger Avenue
Santa Ana, CA 92705

California Integrated Waste Management Board

Linda Moulton-Patterson, Chair
1001 I Street • Sacramento, California 95814 • (916) 341-6000
Mailing Address: P. O. Box 4025, Sacramento, CA 95812-4025
www.ciwmb.ca.gov

Gray Davis
Governor

Winston H. Hickox
Secretary for Environmental Protection

October 21, 2002

Linda Hagthrop, RELOOC Project Manager
County of Orange
Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92703

Subject: **SCH #2002091031** – Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for Phase I of the Regional Landfill Options for Orange County and consider potential environmental impacts from its proposed vertical and horizontal expansions of the Frank R. Bowerman (FRBLF), SWIS No. 30-AB-0360, and Olinda Alpha Landfills (OALF), SWIS No. 30-AB-0035, Orange County.

Dear Ms. Hagthrop:

Environmental Review Section (ERS) staff of the California Integrated Waste Management Board (IWMB or Board) have reviewed the document cited above. Following is a description of the proposed project based on ERS staff's understanding of the project as described in the NOP; IWMB agency background information; and comments as to the scope and content of the draft EIR. If the proposed *Project Description* below varies substantially from the project as understood by the lead agency, ERS staff requests that any significant differences be clarified and included in the draft EIR.

PROPOSED PROJECT DESCRIPTION

Strategic planning for municipal solid waste (MSW) needs in Orange County is the responsibility of the County of Orange's (County) Integrated Waste Management Department (IWMD). Regional Landfill Options for Orange County (RELOOC) is a short- and long-term strategic planning project initiated by the IWMD in 1998 to address existing disposal system capabilities and future needs, and to develop viable short- and long-term solid waste disposal options. The IWMD provided the RELOOC Strategic Plan to provide solid waste planning options over the next 40 years. The RELOOC Strategic Plan includes a two phase approach to accomplish this goal.

Phase I strategies to be analyzed in the draft EIR include fully utilizing existing landfill system capacity by:

- Maximizing operational efficiency at existing landfills.
- Expanding FRBLF and OALF.
- Promoting diversion, recycling and market development with the public and haulers.
- Seeking to resolve community concerns related to the extended use of the existing landfills.
- Annually reviewing the RELOOC Strategic Plan and modifying it as appropriate in response to disposal industry trends and advances in technology.

Phase II strategies are considered long-term RELOOC program components and if determined to be feasible as a result of future studies will be analyzed for CEQA compliance at a later date during the 40-year planning timeframe.

The proposed project includes the vertical and horizontal expansions of the FRBLF and OALF to meet the County's short-term solid waste disposal needs. Implementation of bio-cell technology at the FRBLF [and Prima Deshecha landfills (SWIS No. 30-AB-0019)] is also being considered. The expansions of the FRBLF and OALF would be implemented in phases and would not disturb all parts of the landfill sites at once. These phased areas of development are currently being evaluated and will be provided in the draft EIR.

ROLE OF THE IWMB

The IWMB must ensure that solid waste facilities (SWFs) meet required state standards for the protection of public health, safety, and the environment. The Board implements this goal through programs such as: permit oversight for solid waste facilities; certification and evaluation of Local Enforcement Agencies (LEA) which administer specific provisions of Assembly Bill (AB) 939, otherwise known as the Integrated Waste Management Act of 1989; review of environmental documents for proposed, new or expanded solid waste facilities for compliance with CEQA; enforcement of state standards for SWFs; corrective action programs for facilities out of compliance with state standards; and research and development for special waste management issues.

California Environmental Quality Act Review

CEQA compliance is required for the establishment, expansion, or change in operation(s) of a SWF requiring the issuance or revision of a Solid Waste Facility Permit (SWFP). IWMB staff's review of the Draft EIR is to help decision-makers (1) identify potential impacts from proposed projects, (2) determine whether any such impacts are significant, and (3) ascertain whether significant impacts can be mitigated to a level of insignificance in compliance with the CEQA statute and guidelines. In order for IWMB staff to ascertain that the draft EIR is complete and

adequate for our use in the SWFP permitting process, the proposed project should be described in sufficient detail and the potential environmental impacts must be identified clearly in the environmental assessment/Initial Study Section of the draft EIR. Mitigating measures to reduce potentially significant environmental impacts should be incorporated into the project, when feasible, in order to avoid potentially significant effects upon project implementation. When a potential significant environmental effect is identified and an argument is made as to why no mitigation is necessary, the discussion/analysis should be in sufficient detail that the reviewer/decision-maker can understand the lead agency's reasoning for their determination. In order to expedite document preparation and minimize redundancy - supporting documentation and/or studies would be helpful and should be incorporated by referenced in the draft EIR.

ERS STAFF'S COMMENTS

Since the IWMB would be a responsible agency involved in the discretionary approval process for the SWF design and operational aspects of the project proposals, ERS staff will need to perform an environmental review and analysis for this project using the EIR developed by the lead agency as required in CEQA Guidelines, California Code of Regulations (CCR) Section 15096. To assist ERS staff's analysis and evaluation of this project, and aid ERS staff in the determination of the adequacy of the EIR and related CEQA document(s) for IWMB SWFP concurrence purposes, we request that the following comments and questions be addressed in the draft EIR under preparation by the lead agency prior to circulation of the document. If these have already been addressed in an existing document (e.g. Report of Facility Information, Closure Plans, previous environmental documents), please indicate the document, page number(s) and section(s), and provide copies to the State Clearinghouse and IWMB along with the draft EIR.

Typical Considerations for Landfill SWFPs

The following is a list of typical considerations that ERS staff recommends for inclusion in the draft EIR in order to help evaluate the scope and content of the EIR for consideration in the issuance of revised SWFPs and proposed changes at the RELOOC facilities:

- Describe in detail the excavation plans for the proposed landfill expansions of the subject facilities. Exactly what areas of the landfill expansion will be directly over buried refuse that does not have the benefit of a composite liner system and/or a leachate collection and removal system (LCRS)? How will the additional overburden of waste materials affect the LCRS's ability to manage leachate?

- What is the proposed acreages for the solid waste/landfill facilities, landfill 'footprints', material processing and material storage areas, as well as the combined acreage for the entire facility? What are the minimum and maximum proposed landfill heights?

- What is the proposed average and peak daily tonnage of waste materials to be permitted for acceptance at the landfill facilities?

- What are the types and numbers of vehicles that will access the landfill facilities on a daily basis?

- What are the proposed hours and days of operation for the landfill facilities?

- What are the proposed types of waste (e.g. residential : MSW; industrial : ash, asbestos; etc.) to be disposed at the RELOOC facilities?

- What provisions are made in the design or operations of the facility to prevent project related impacts from litter, odor, dust, noise, glare, vectors, vehicle queuing, drainage, and health and safety?

- What special circumstance provisions will be required for the handling, processing, transport and storage of special wastes, if any?

The draft EIR must detail all provisions for landfill design and operation in order to indicate the ability of the facility to meet State Minimum Standards for environmental protection (see CCR Title 27, §§ 20005, et. seq.). The following internet link accesses checklists developed by Board staff as a guide to lead agencies in the preparation of EIR for landfills, transfer stations, material recovery facilities, and composting facilities:
http://www.ciwmb.ca.gov/PermitToolbox/CheckItems/CEQA/default.htm#Guidelines.

Much of the information needed for a clear and detailed project description is normally included in a facility's Report of Facility Information (RFI) for a SWF. If an RFI has been developed that incorporates RELOOC project descriptions and proposals, that RFI may be incorporated or referenced in the draft EIR.

Operation of Modules as Bioreactor Landfill Cells

It is not clear in the project description in the NOP what all the proposed phases of this project proposal will be. The draft EIR should have a complete and detailed description for each phase of this proposed project. This should include the number of landfill modules/cells at the site that will be operated as bioreactor cells, when each of these will be under operation, whether all landfill modules will be utilized for this purpose (or only future modules), and if current/existing modules will ever be utilized as bioreactor cells. Please describe the proposed design(s) of leachate containment and removal systems (LCRS) for the bioreactor cells? How do bioreactor cell LCRS designs differ from Class II landfill LCRS systems? How will the bioreactor cells be managed in order to prevent injury from equipment and vehicle use on the landfill mass during active decomposition of the landfilled materials? Where will the bioreactor's water supply come from and will it contain any dissolved solids, contaminants, or microorganisms?

Increase in Final Fill Elevation

Please provide a detailed description of the proposed final grading plan configuration for each landfill expansion site. Describe how the landfill grade contours will be maintained for the bioreactor cells when significant differential settlement creates pockets where rainwater can collect. Describe the final elevation, slopes and contours of the landfill, and if the highest vista of the landfill (including final cap) will be at or above any existing ridgelines or in direct line-of-sight from a scenic viewpoint. Please provide photos showing views of the area from the east,

south, west and north prior to, and digital representations of the views after the proposed increase in elevation.

As required by CCR Title 14, §§ 15126.2, 15126.4 and 15126.6, ERS staff requests that the draft EIR contain detailed considerations and discussions of the significant effects, mitigation measures and alternatives for the proposed project. This should include an analysis of the significant aesthetic effects on the surrounding community from the proposed increase in landfill heights within the existing and expansion 'footprints'. ERS staff request that one of the project alternative project proposals include an assessment as to whether the County's basic objectives would be feasibly attained, and significant effects avoided or lessened by the implementation of the proposed projects, without the vertical expansion of the landfill sites.

Expanded Landfill Gas (LFG) Management and Utilization

Please provide a detailed description of proposed LFG collection and combustion systems and the location of each. What will be the expected LFG volumes for the bioreactor cells? What provisions are in place to deal with the possibility of system failure? The draft EIR should include specific information on the proposed systems for use and management of LFG.

Expansion of Salvaging Operations

Please provide detailed analysis of the following:

- Who will be allowed to salvage waste?
- Will waste be salvaged at the landfill face or in alternate location?
- What training workers will salvage workers receive?
- Provisions for the security, protection, and safety of salvage workers such as measures that will ensure stability of working face, eliminate exposure to hazardous waste and materials, and any other human health and safety issues relating to the proposed salvaging operation.
- Will salvaging be performed in non-daylight hours, and if so, how will lighting be provided and positioned?
- Where will salvaged materials be stored?
- Will salvaged materials storage areas be covered to minimize contact water from storm events?
- How will salvaged material be distributed to the public or organizations as proposed?
- Identify whether or not the salvaged goods will be sold.
- Is a public buy-back area planned, and if so, where this area will be located on-site?
- Identify if there will be workers manning salvage material storage area(s).
- Will the public have access during all operating hours?

Household Hazardous Waste (HHW) Storage/Collection Facility

The draft EIR should describe in detail the design and operational features of the HHW facilities, especially those features that will allow the facility to comply with all local, state, and federal requirements for the transportation, storage, and disposal of HHW material. Furthermore, the following issues should be addressed in the draft EIR:

- Please provide a complete description of the operation of the proposed HHW facilities including a description of the operations immediately adjacent to the HHW facility.
- Describe any potential impacts of on-site and off-site traffic generated from the HHW materials facility with the operations immediately adjacent to the HHW facility. Will the traffic from each facility be kept separate? If so, what methods will be used? Please provide any supporting traffic study information prepared for the proposed project.
- Estimate the volume and weight during a specified time frame (month, quarterly, annually) for the various types of HHW anticipated or proposed to be collected at the HHW facilities. Discussion should include the proposed facility's capability to accept, temporarily store, and transport off-site the quantities accepted as well as any associated environmental impacts.

Composting Facility (CF)

If composting is proposed at any of the Phase I facilities, the draft EIR should contain a complete and detailed description of the composting facility information and operations. This should include, but not be limited to, detailed descriptions of the proposed composting processes such as:

- Types of feedstocks.
- Composting methods (i.e., windrows, static pile, in vessel, etc.).
- Average and maximum quantity of individual types of feedstock to be received daily (in tons and cubic yards).
- Maximum volume of feedstocks and active compost on-site at any time, etc.

The draft EIR must detail all provisions in order to indicate the ability of the facility to meet State Minimum Standards for environmental protection (see CCR Title 14, §§ 17850 et. seq.). The following internet link accesses checklists developed by Board staff as a guide to lead agencies in the preparation of EIR for landfills, transfer stations, material recovery facilities, and composting facilities:
http://www.ciwmb.ca.gov/PermitToolbox/CheckItems/CEQA/default.htm#Guidelines.

When and if a composting facility is considered for development and operation by the Orange County IWMD the checklist for compost facilities would be a very helpful tool in the CEQA process.

SWFP for Construction and Demolition (C&D) Projects

Please be advised that C & D regulations are currently in the rule-making process. The LEA will need to make a determination regarding the level of regulatory authority required for the C & D projects if, and when, they are proposed by the Orange County IWMD. For information related to the development of these regulations, please see the Proposed Regulations page of the Board's web site, http://www.ciwmb.ca.gov/Rulemaking/CDMater/.

Prime Agricultural Land

Some undeveloped land at the RELOOC landfills lateral expansion areas may be considered prime agricultural land. The draft EIR should identify any areas of prime agricultural or

Williamson Act contract lands that would be taken out of agricultural production or consideration thereof.

ERS STAFF'S IMPACT ASSESSMENT RECOMMENDATIONS

Potentially Significant Environmental Impacts

ERS staff has identified potentially significant project related impacts in the areas of **Land Use and Compatibility**; **Aesthetics**; **Ground Water Quality**; regional and localized **Air Quality**; regional and localized **Traffic**; site **Biology**; localized **Noise**; and **Health and Safety**. Most potentially significant project related impacts may be reduced to less than significant levels by project features and designs and/or mitigation measures. It may be that one or more potentially significant environmental impacts cannot be avoided if the project as proposed in this NOP is implemented.

Cumulative Impacts

It is important that the draft EIR address the cumulative impacts resulting from the individual/proposed project(s) and the combined projects as well as those incremental impacts resulting from the proposed projects' implementation.

Land Use Compatibility

The draft EIR should identify the proposed facilities' surrounding land use with a description of the density of the occupancy for commercial and residential areas. The draft EIR should be specific regarding the distance to the nearest sensitive receptor(s).

The project's surrounding land use must be designated as compatible with the proposed/current land uses at the project sites. The local government, in whose jurisdiction the facilities will be located, must make a finding that the facility is consistent with the General Plan (Public Resources Code Section 50000) and is identified in the most recent County Integrated/Solid Waste Management Plan (Public Resources Code Section 50001).

Traffic and Related Transportation System Impacts

Traffic volumes (the proposed projects separate and total daily vehicle counts) should be projected over a minimum of five years for the project at peak tonnages considering both short haul and possible long haul aspects of the project proposals. Discuss the cumulative effect of traffic for all of the projects proposed for analysis in the draft EIR. The issuance of revised SWFPs will require that peak daily tonnage and corresponding vehicle counts be proposed and analyzed in the draft EIR. On site traffic circulation for all project proposals should be discussed in detail in the draft EIR.

A traffic study may be necessary to determine whether the existing infrastructure can handle the projected vehicular movement, and whether improvements may be necessary to accommodate increased traffic; including the repair of, and maintenance of, existing roads, additional lighting, turn lanes, and pedestrian walk-ways; as well as cumulative impacts on the circulation within the

landfill vicinity (i.e. ingress and egress). The regional district of CalTrans should be contacted regarding potential issues related to an increase in traffic volumes around the RELOOC SWFs.

Air Quality

Local and regional impacts on air quality from vehicles, trucks, and equipment emission sources accessing the facility should be analyzed in detail, including emissions from equipment handling waste materials and potential dust generation during operations at the RELOOC facilities. Dust particulates (PM_{10}) and ozone precursors may be of particular concern if the regional air basin is 'non-attainment' for PM_{10} and ozone precursors. If the proposed projects are located within a 'non-attainment' air basin, cumulative impacts affecting the projected federal 'attainment' dates may be significant and unavoidable.

The distance to the nearest residential and/or commercial odor receptors, as well as the direction of the prevailing wind should be identified in the draft EIR. Mitigation measures, which will be employed to address impacts for the proposed facility, should be incorporated into the draft EIR with a description of the 'attainment' plan for the air basin(s) air quality. The local Air Pollution Control District should be contacted regarding air pollution discharge permits, which may be required to ensure compliance with ambient air quality standards.

Noise

Activities associated with vehicular transport of waste materials and the use of heavy equipment (e.g. large vehicles, rock crusher, tub grinder, trommel screen, etc.) to process materials may result in significant on-site and off-site noise levels. A noise study may be necessary if local receptors are impacted, and should be included in the draft EIR. Appropriate noise-attenuating mitigation measures, which can be implemented to reduce noise levels, should be incorporated into the draft EIR. Short-term and cumulative impacts should be assessed as well as operations related noise.

Risk of Upset/Human Health

In the event of an accident, explosion, fire, or the release of hazardous substances due to upset conditions or mechanical malfunctions, an Emergency Response Preparedness Plan should be prepared and available at the proposed RELOOC facilities. Personnel should be properly trained to handle emergency situations, including identification, location and use of fire suppression equipment, procedures for evacuation of the premises, and noticing for contacting the appropriate authorities in the event of such an occurrence. What is the response time for the nearest City/County Fire Department location? ERS staff request that such a plan be briefly described or referenced in the draft EIR with the appropriate mitigation measures in the event of such an occurrence. The plan should include such information as: existing and/or proposed hygienic facilities on site as well as first aid equipment accessibility and employee training. What is the distance to the nearest hospital? What will be the provisions for the permanent water supply? This information can be referenced in supporting documentation.

Please include in the draft EIR a map drawn to scale with a description of the security on and around the RELOOC facilities' locations, including fencing, lighting, gates and access roads.

Please be aware that the CCR Title 8, §§ CCR Section 3203 requires all employers in the State to implement and maintain an effective Injury Prevention Program (IPP). The Labor and Penal Codes have been amended to provide administrative, civil, and criminal penalties for failure to comply and/or for injuries or deaths occurring due to the absence of an effective IPP.

Surface Drainage

The draft EIR should include drainage plans along with the proposed final grading plans for the separate facilities. Site plans should identify the paved and exposed surfaces where the projects' proposed operations may take place. The plans should identify surface water runoff, including, but not limited to creeks, rivers, and/or diversion channels in areas adjacent to the project area. Indicate on a map drawn to scale the location of all project proposals to be carried out over buried landfill refuse. Identify on this site map any diversion berm(s) that will redirect flow away from/around the facility proposals and any drainage basins to keep drainage on-site. Will the proposed facilities be able to handle a 100-year, 24-hour storm event? IWMB staff recommends that the Regional Water Quality Control Board (RWQCB) be contacted to determine if a Report of Waste Discharge (ROWD) or National Pollution Discharge Elimination System (NPDES) permits are required for the RELOOC facilities.

Earthquake Faulting and Seismic Stress

Identify in the draft EIR any known earthquake faults in the vicinity of the proposed facility and the frequency of seismic activity as well as a range of most probable earthquake (MPE) magnitudes and maximum ground acceleration (MGA). How will the MPE MGA(s) affect the proposed slope stabilities at the RELOOC landfills? How will the proposed RELOOC facilities landfill design structures stand up to the MPE MGA(s) considering that the facility structures and/or landfill equipment may be located over buried landfill refuse? Please include a map of historic epicenters within a radius of ten miles of the facility.

Mitigation Reporting or Monitoring Program (MRMP)

As required by Public Resources Code (PRC) Section 21081.6, the Lead Agency should submit a MRMP at the time of local certification of the EIR. This should identify the environmental impacts associated with the proposed project, identify mitigation measures to reduce impacts to a less than significant level, identify agencies responsible for ensuring the implementation of the proposed mitigations, and specify a monitoring/tracking mechanism. PRC Section 21080 (c)(2) requires that mitigation measures "...avoid the effects or mitigate the effects to the point where clearly no significant effects on the environment would occur." The MRMP is also required to be made a condition of project approval. Changes to this Section 21081.6(b) also requires that "A public Agency shall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures." The MRMP should also indicate that agencies designated to enforce mitigation measures in the draft EIR have reviewed the MRMP and agreed that they have the authority and means to accomplish the designated enforcement responsibilities.

REGULATIONS which MAY AFFECT ASPECTS of the PROJECT PROPOSAL

Consideration for Construction and Location of Ancillary Buildings at a Landfill

Please be aware of the following regulations which may apply to the project proposal:

Title 27, CCR, Section 21190 – Postclosure Land Use.

(a) Proposed postclosure land uses shall be designed and maintained to:

(3) prevent landfill gas explosions.

(g) All on site construction within 1,000 feet of the boundary of any disposal area shall be designed and constructed in accordance with the following, or in accordance with an equivalent design which will prevent gas migration into the building, unless an exemption has been issued:

(1) a geomembrane or equivalent system with low permeability to landfill gas shall be installed between the concrete floor slab of the building and subgrade;

(2) a permeable layer of open graded material of clean aggregate with a minimum thickness of 12 inches shall be installed between the geomembrane and the subgrade or slab;

(3) a geotextile filter shall be utilized to prevent the introduction of fines into the permeable layer;

(4) perforated venting pipes shall be installed within the permeable layer, and shall be designed to operate without clogging;

(5) the venting pipe shall be constructed with the ability to be connected to an induced draft exhaust system;

(6) automatic methane gas sensors shall be installed within the permeable gas layer, and inside the building to trigger an audible alarm when methane gas concentrations are detected; and

(7) periodic methane gas monitoring shall be conducted inside all buildings and underground utilities in accordance with Article 6, of Subchapter 4 of this chapter (section 20920 et seq.).

You may contact Scott Walker of the Remediation, Closure, and Technical Services Branch at (916) 341-6319, or e-mail at swalker@ciwmb.ca.gov for technical assistance on the regulatory requirements for post closure land use at the RELOOC facilities.

Title 14, CCR, Section 17407.5. Hazardous, Liquid, and Special Wastes.

(a) An operation or facility shall not intentionally accept or store hazardous wastes, including batteries, oil, paint, and special wastes, unless it has been approved to handle the particular waste by the appropriate regulatory agencies. Such approvals shall be placed in the operating record.

(b) At operations and facilities where unauthorized hazardous wastes are discovered, control measures as are necessary to protect public health, safety and the environment, such as

elimination or control of dusts, fumes, mists, vapors or gases shall be taken prior to isolation or removal from the operation or facility,

(c) Liquid wastes and sludges shall not be accepted or stored at an operation or facility unless the operator has written approval to accept such wastes from the appropriate agencies and the EA. The EA shall authorize acceptance of these wastes only if the operation, facility, and the transfer vehicles are properly equipped to handle such wastes in a manner to protect public health, safety, and the environment.

Note:

Authority cited:
Sections 40502, 43020, and 43021 of the Public Resources Code.

Reference:
Sections 40053, 43020 and 43021 of the Public Resources Code.

CONCLUSION

ERS staff requests copies of any subsequent or revised environmental documents (EDs) in addition to the draft and final EIRs. Any subsequent or revised EDs should be circulated through the State Clearinghouse as required in Section 15205(a) of the CEQA Guidelines. The IWMB be noticed of the date, time and location of any public hearings regarding the project proposal at least ten days in advance.

ERS staff have no further comments on the project as proposed at this time. Thank you for the opportunity to comment on this project in the early planning stages. If you have any questions regarding these comments, please contact me at (916) 341-6327 or e-mail me at jloane@ciwmb.ca.gov

Sincerely,

John Loane, Integrated Waste Management Specialist (IWMS)
Permitting and Inspection Branch
Permitting and Enforcement Division
California Integrated Waste Management Board

cc: Tadese Gebre-Hawariat, IWMS
Permitting and Inspection Branch, Region 3
Permitting and Enforcement Division
IWMB

Suzanne Hambleton, Supervisor
Permitting and Inspection Branch, Region 3
Permitting and Enforcement Division
CIWMB

Sue O'Leary, Supervisor
Environmental Review Section
Permitting and Inspection Branch
Permitting and Enforcement Division
CIWMB

County of Orange LEAHealth Care Agency
Environmental Health Division
2009 E Edinger Ave
Santa Ana, CA 92705

Becky Frank
State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

APPENDIX D
WRITTEN COMMENTS/VERBAL COMMENTS FROM THE SCOPING MEETINGS

RELOOC
Regional Landfill Options for Orange County

Draft EIR No. 588 Scoping Meeting

WRITTEN COMMENT FORM

To make a written comment, question, or concern to be addressed in the RELOOC Draft EIR No. 588, please PRINT the comment, question or concern on this form and hand it to a staff member *AT THE INFORMATION TABLE* prior to leaving this meeting. If you would like to receive notification via the US mail of when the RELOOC Draft EIR No. 588 is available for review, a sign-up sheet for mailed notification is at the information table.

PLEASE PRINT

1) Will it be safe to eat fruits from trees in Olinda ranch?
2) How much trash smell & Bio burden particulates am I going to breathe in Olinda Ranch?
3) Can you direct traffic through Tonner Canyon?
4) Can you change the truck hours till after 9:00 after people went to work & children in schools? until Tonner Canyon open?

Sami Abuñadi
489 Hummingbird Dr.
Brea, Ca. 92823

fax 834 4057

RELOOC
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PLEASE PRINT

Would like to see the landfill trucks routed to Tonner Canyon Rd. It is unecessary to have these trucks routed thrOush newly built resideutial areas. The noise & pollution are becomins intolerable.

Roger A. Haanpaa
477 Hommingbird Dr.
Brea, CA 92823

Linda Hagthrop

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

RELOOC
Regional Landfill Options for Orange County

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PLEASE PRINT

The EIR should look at the landfills impact on bird habitat due to the importation of foreign bird species into the area. (i.e. seagulls & raven

To the extent that this can't be mitigated there should be an exploration of mitigation fees for purchase of bird habitat in nearby areas.

The impact of landfill odors should be studied

The impact on the wildlife corridor should be studied.

Full environmental review of any road building should be studied, which would include all non-landfill usage of the potential road.

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PLEASE PRINT

The EIR should check impact of air pollution due to expansion. Soil quality, land slide + soil erosion possibility due to ↑ height of landfill. What type of moving equipment is used in landfill - How much pollution do they generate? I am not in favor of a alternate route through Tonner Canyon that would divert more traffic from adjacent cities to Brea. The impact on the wildlife corridor should be studied. The areas that cannot be mitigated, there should be an exploration of mitigation fees to compensate for the damage done to wildlife to purchase other open space areas. Like the landfill in Whittier did. Open space and wildlife is important to the citizens of the city of Brea

Thank You for your time!

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

RELOOC
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PLEASE PRINT

The Olinda Alpha landfill's designated truck route desperately needs to be rerouted. Currently the landfill trucks use Imperial Highway and Valencia Avenue as its designated route. Resident's homes, parks and shopping centers are situated right along this route. Our bedroom windows and our kids play areas are within only a few feet of these trucks. There is no consideration for the resident's quality of life that live along Imperial Highway and Valencia Avenue. The horrible noise and ground shaking vibration wakes us up every morning and goes on throughout the entire day Monday through Saturday. Sound walls are of no use in solving the problems these landfill trucks bring. The blaring exhaust stacks of the landfill trucks stick up and over the useless sound walls. Toxic particles fly out of the trucks cargo bins and fly up and over the sound walls into our backyards and playgrounds. A large amount of black dust particles accumulate within a few days in our yards. The vibrations from the trucks idling engines while there sitting at the stop light at Imperial and Placentia Avenue pass right through the sound walls and rattle the dishes, pictures and fixtures in our homes. Or the heavy cargo bins pounding against the road when the trucks hit a bump, sewer cap, or pothole in the road.

We ask that air quality test be taken at the Artisan Walk homes along Imperial Highway. The large amount of black dust particles that settle in our yards need to be investigated if it is toxic and related to the landfill's activities.

We also ask that the landfill truck route be designated to Tonner Canyon Road. This would solve the unbearable problems of the horrendous truck noise, vibrations, toxic particulates, and road safety (pedestrians, kids playing in nearby areas, road wear and tear, city street congestion, exhaust pollutants, city aesthetics, etc., etc., etc.). All these concerns need to be investigated and addressed. The solution would be to use Tonner Canyon Road.

Phil

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

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PLEASE PRINT

I RESIDE IN THE CITY OF BREA AND WOULD LIKE TO HAVE THE TRASH TRUCKS RE-ROUTED TO TONNER CANYON.

David Smith

DAVID SMITH

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

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Regional Landfill Options for Orange County

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PLEASE PRINT

I LIVE IN BREA. I AM FINE WITH THE LANDFILL AND THE WAY IT IS OPERATED. I AM UNHAPPY WITH THE TRUCKS AND THE GREEN WASTE SITE. I WOULD LIKE THE TRUCKS TO BE REROUTED TO TONNER CYN. AND CLOSE THE GREEN WASTE SITE.

THANK YOU.

ROBERT LAWTON
3624 SKYLARK WAY
BREA CA. 92823

RELOOC
Regional Landfill Options for Orange County

Draft EIR No. 588 Scoping Meeting

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PLEASE PRINT

Although Orange County has a responsibility to use existing landfill capacity, Olinda Alpha landfill has a responsibility to be a good neighbor.

As a homeowner in Olinda Ranch, I would only agree to continued operations at the landfill if traffic to the landfill were re-routed to Tonner Canyon and the lower faces of the landfill facing Orange County were landscaped to blend in with remaining native vegetation.

Thank you.

ERIC BETTELHEIM
3667 STARLING WAY
BREA, CA 92823

RELOOC
Regional Landfill Options for Orange County

Draft EIR No. 588 Scoping Meeting

WRITTEN COMMENT FORM

To make a written comment, question, or concern to be addressed in the RELOOC Draft EIR No. 588, please PRINT the comment, question or concern on this form and hand it to a staff member *AT THE INFORMATION TABLE* prior to leaving this meeting. If you would like to receive notification via the US mail of when the RELOOC Draft EIR No. 588 is available for review, a sign-up sheet for mailed notification is at the information table.

PLEASE PRINT

My family and I oppose the expansion and extension of the Brea Land fill for the following reasons

1. Safety - The trucks pose a very serious danger to our children and to other drivers on the Brea area roads
2. Health: My son is asthematic. The smell produced by the landfill irritates his lungs and those of many kids and adults.
3. Quality of Life - Trucks are very noisy and unpleasant looking.
4. No entity (County, City or Land fill) should enjoy an economic gain at the expense of the residents of the City of Brea.

Thank you

Dr. Majed Muhtaseb
3619 Skylark Way, Brea, CA 92823
(714) 996-3800

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

mmuhtaseb@csupomona.edu

RELOOC
Regional Landfill Options for Orange County

Draft EIR No. 588 Scoping Meeting

WRITTEN COMMENT FORM

To make a written comment, question, or concern to be addressed in the RELOOC Draft EIR No. 588, please PRINT the comment, question or concern on this form and hand it to a staff member *AT THE INFORMATION TABLE* prior to leaving this meeting. If you would like to receive notification via the US mail of when the RELOOC Draft EIR No. 588 is available for review, a sign-up sheet for mailed notification is at the information table.

PLEASE PRINT

MY WIFE AND I RECENTLY PURCHASED A NEW HOME IN BREA - OLINDA. IN SO DOING, WE WERE ASSURED THAT THE LANDFILL WOULD BE CLOSING IN 2013. WE ARE CONCERNED ABOUT THE NEW PROPOSAL TO EXTEND THIS ANOTHER EIGHT YEARS. THE TRAFFIC ALONG VALENCIA WITH SO MANY LARGE TRUCK IS ONE ISSUE. THE OTHER ISSUE IS THE OFFENSIVE ODOR THAT PERVADES OUR COMMUNITY.

WE FEEL BREA IS A BEAUTIFUL CITY TO LIVE IN THAT CARES ABOUT ITS RESIDENTS. BY APPROVING ADDITIONAL TIME FOR THE LANDFILL TO REMAIN OPEN, WE FEEL BREA WILL BE VIOLATING TRUST WITH ITS RESIDENTS. BREA SHOULD STAND UP FOR ITS COMMUNITY AND ITS RESIDENTS AND DENY THIS PROPOSAL.

RELOOC Information Line: (714) 834-3562
Orange County Integrated Waste Management Department: www.oclandfills.com

RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Thursday, January 22, 2004
7:30 PM to 9:00 PM

City of Brea Council Chambers
1 Civic Center Circle

Scoping Meeting Comments

- Joyce Larson – Lived in Brea since 1987. Shortly after I moved to Brea the County was crying we are going to fill up, we've got to lengthen it and not long after that happened after all the approvals, then the County started imported trash. So the County betrayed us before how can we believe them this time?

- Warren Couler – Couple of things to point out. The power plants at the landfill do make excessive noise. Request a noise impact be studied. Lives in homes below the power plant. Never was known to him that there were power plants until he met with the director, who showed him the facility. Talked about reducing noise by putting up sound walls but has not heard from anyone in 1 ½ years, so he does not think anything has been done. He would like the noise to be addressed. No more power generation. If they do have an expansion there should be sound barriers around the facility or move the pad farther north. Also, he would like traffic to be studied. Not opposed to it being extended but would like the traffic re-routed through Tonner Canyon for two reasons: reduce noise in the neighborhood and to reduce traffic on Imperial Highway which is quite heavy getting on to Freeway.

- Tina Johnson – These issues concern her and here neighbors. She resides in Olinda Ranch at 660 Partridge. Concerns with noise, traffic and pollution and the impacts they have on the children growing up in Olinda Ranch. Studies done affected them differently. There are dangers that are present by the large trucks. She would like it studied and put in the EIR for the writing section. She did make a map of her neighborhood and drew a map of the children in her area under 18. Noise from trucks definitely needs to be studied. Aesthetically, if the landfill will be higher and over looks us it is important. Questioned where the catch basins are located when the Landfill is complete.

    - Answer: 2 catch basins and explains on a map where those candidates are.

  She replied that the catch basin to the left, sit right over her neighborhood and has concerns about getting into groundwater.

  Was there an EIR done since people have been living in the Olinda Ranch Development?

    - Answer: No.

- Phil Tonioka – Proud residents of Imperial and Placentia Avenue. Was shown maps of two other landfills (FRB & San Diego) which had there own road going in and out of the landfill. Concerned because the main road going in to Olinda Alpha is a main road and is concerned with the noise. People in Glenview built a 15 foot sound wall and did not solve the problem. Also concerned with the exhaust and the vibration of these trucks. The large amount of truck traffic on Imperial Highway. Complains that the truck wake him up at 5:15 in the am due to vibration, blaring past bedroom window. Says soundwall is not the solution and it will not fix the problem. With the affects of what the concern with the children growing up close to landfills, he explains that his wife grew up near Whittier landfill and says there is settlement due to cases with people who have cancer due to living next to landfills. Truck problem and truck noise is the main problem. Suggests Tonner Canyon.

- Keith Pallton – 41 Pepper tree. Air quality is the most important concern. Trucks going through Valencia and Imperial Highway. He is also concerned regarding the children in school or athletic field. Safety issue with trucks traveling on the community roads near school children. EIR should address Lambert and Carbon Canyon Road and the impact of the traffic. How many trips or round trips go to the landfill? Specific number of trips. Suggests making and off-ramp from the 57 just purposely for trash trucks so it would not negatively impact the wildlife.

- Unknown – Asked about the checklist and if the questions are the same that will be addressed in the EIR or are there more questions. Also asked if the checklist will be changed and notice that one question that was marked "No impact" was incorrect.

- Unknown – What levels are used regarding potential significant impacts, less than significant impact of mitigation and asked if there is a scoring system used.

- Unknown – Does not understand why they said they were going to close the landfill in 2013 and now planning to extend it again, is that going to be final and if you plan to have it open 8 years longer wouldn't it make more sense to go through Tonner Canyon?

- Unknown – Regarding my concern with the power plants can you address how long the life expectancy and also the pollution of the power plants.

- Unknown – When was the designated road chosen to the Landfill?

- Unknown – How is the EIR going to address the water quality in the landfill situation? The groundwater in the agriculture.

- Unknown – What happens to all the chemicals in the groundwater and wants to know if the plastic lining will protect it from leakage? Life of the lining.

- Unknown – Trucks are traveling through the streets where there are children. What about the pollution? Will the traffic go in the same direction?

- Unknown – Wants to know if we have people going out and testing the water, soil and air? Counting the trucks? Knocking on doors of residents in the area? Wants people in the community to be involved in gathering information.
- Unknown – How particulates will be exposed to in Olinda Ranch? Can you direct traffic through Tonner Canyon? Can the truck hours be changed after people leave for work and children are in school?

- Unknown – EIRs are looked at by many companies and agencies as another hoot that you doctor to get the stamp of approval regardless of the content. Does not want that to happen with this EIR, there is too much at stake. When you raise the parameter of the height that it could be uninviting in terms of aesthetics as you look at in this direction. Do you have something that you could hold up or that would relate to the scale on the height now and what the height would be from the entrance of Carbon Canyon Regional Park?

- Unknown – When will the solutions be addressed after the money for the extension comes through?

- Unknown – If the City does not approve the extension of the Landfill, what is done at that point?

- Unknown – What are the economic impact if the project does not go through?

- Unknown – Residents want to be reflected in the data. Resident offers his backyard for data.

- Unknown – Valencia and Sandpiper is an empty lot for a good set up.

- Unknown – Economic impacts of families living in the area due to illness from the Landfill.

- Unknown – Impact on home values?

- Unknown – Resident was told by homeowner association that the access road to the landfill was going to be moved.

- Unknown – If it were to go to the No Project, how far would they have to go for trash disposal and the cost to trash disposal?

Regional Landfill Options for Orange County (RELOOC)
SCOPING MEETING
BREA, CA
SEPTEMBER 18, 2002
7:30 P.M.

Introductions

- Brief introduction of Integrated Waste Management Department (IWMD) and consultant roles

PowerPoint Presentation (attached)

- Overview of the purpose of the meeting
- Explanation of terms
- Overview of California Environmental Quality Act (CEQA)
- Need for RELOOC
- Explanation of Orange County Landfills under jurisdiction of the IWMD and need to preserve capacity of facilities
- Brief overview of RELOOC Steering Committee planning process including a discussion of agencies/persons involved
- Explanation of the RELOOC Strategic Plan and purpose of Environmental Impact Report (EIR)
- Explanation of RELOOC short (i.e., physical modifications, annual review of Strategic Plan, etc.) and long-term (i.e., studies) Strategic Plan strategies
- Overview of Project Objectives
- Explanation of Project Description (i.e., expansion of Frank R. Bowerman (FRB) and Alpha Olinda Landfills). Discussion of FRB Landfill landslide and issues associated with the site (i.e., horizontal and vertical expansion (250 feet - 1,100 to 1,350) and need for approximately 2 acres of land from the Irvine Company located outside of the property boundary). Project will need permits from regulatory agencies and cities.
- Discussion of Alternatives, including feasibility and evaluation

Public Comments

Steve Vargas, Councilman

Question/Comment: What is the permit limit for Prima? What would the tons per day be increased to for Alternative 2. Isn't the access road (i.e., Ortega Highway) considered hazardous? What would you do to address this issue? The issues in Brea include traffic along Imperial Highway. Caltrans built a sound wall and this has helped lower noise and particulates coming from the trucks but it's still a bit noisy. So, even with 14 foot sound walls, the rumbling of the trucks and particulates is hazardous to my neighborhood. This is also disturbing to me as a resident. My concern is traffic and noise. The City's traffic engineer indicates that we have 2,200 trips per day going to the dump. We also increased a speed limit change along Valencia Road and raised the limit from 35 to 45 miles per hour. I have documentation that now indicates

life. I also noticed that each of the newer landfills have their own access. Perhaps we can find some resolution to these maters.

Answer: Thank you. Do we have your address? Yes. Thank you.

Dianne Taylor

Question/Comment: We have a lot of out of county waste being hauled through Carbon Canyon with debris and other material falling out and blocking the road. I was around when the Memorandum of Understanding was originally written and 2013 was the absolute drop dead deadline. We were told that this would never happen again. We have not seen the improvements promised including landscaping and the affects of scaring on the hillside. The mitigation measures we were promised have still not happened. We we're told that we would have a park. That has still not happened and the community is bitter. Both the vertical and horizontal expansion are totally unacceptable. I agree with the previous speaker that the truck traffic is really bad and was not this way back in the 1960s. It's truly unacceptable, including the traffic, noise, vibration, air quality. We also have new residential projects proposed that will be competing with the trash trucks. Tonner Canyon was also studied as an alternative access. Some of us would like to see direct access via Tonner or Valencia. If the landfill was allowed to be extended to 2017 (without the vertical or horizontal expansion) I would accept that and Tonner would be the only viable mitigation. The trucks need to be off of City of Brea roads. Smaller haulers should also not be allowed to use Carbon Canyon Road.

Answer: Thank you.

Norm Wit

Question/Comment: How many tons are being imported into the County landfills and to individual landfills? Why is the cessation of imported material not being addressed?

Answer: Thank you.

Chris Rimer, City of Brea

Question:/Comment: The information provided is difficult to understand, specifically the no increase in daily tonnage. It's obvious that this is inconsistent with the growth we are experiencing. We have 2,000 residential units planned for our City alone. What about the construction debris? More people make more trash. How do you explain that we have no increase in daily tonnage yet we have this explosive growth around us?

Answer: Thank you. Your questions will addressed in the EIR.

Regional Landfill Options for Orange County (RELOOC)
SCOPING MEETING
BREA, CA
SEPTEMBER 18, 2002
10:00 A.M.

Introductions

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- Discussion of Alternatives, including feasibility and evaluation

Public Comments

Phil Tanioka, Resident of Brea

Question/Comment: Negative consequences from transportation of waste. Operation hours are inconsiderate. They begin transport at 4:00 A.M. and roar past us. The exhaust pipes extend above the height of the sound walls. Vibration is also really bad. The vibration shakes objects in the house. Air quality is also an issue and affects our children and quality of life. The dust that blows out of the waste truck bins is really bad. We welcome you to come to our house to experience the affects. Trucks struggle to access the landfill due to the slope of the hill and create a lot of noise. When trucks leave the landfill with empty cargo bins, the bins vibrate and shake our homes. The screeching brakes are also a really bad situation. We are unable to relax on the weekend due to the activities on the landfill and along the street are ruining our quality of

that there are 2,400 trips per day. Some may be from construction vehicles. How many trucks actually pass your gate daily? I need the most recent number you have. Also, at what point did expansion of the landfill come into being? Also, the footprint of the landfill, could you give me the acreage at 2013 and 2017? According to the MOU, the County is to pay for and remediate the plateau of the landfill and turn it into a natural history park or preserve. Could you clarify this? Also, according to the MOU, the plateau was supposed to be comprised of 50 acres. Information from last year indicates that it could be a 150 acre plateau because of the expansion we've already done in 1995 (i.e., the vertical expansion). I would like to have that verified. So, if it closes in 2013, are we getting a 50 or 150-acre park?

You have discussed the injection of fluids to enhance compaction. What are the differences in using this technique on the two landfills that are lined compared to ours which is not lined. What would be the affect on our water table? Would you consider this at the Olinda Alpha Landfill? I want to ensure that the information that is given accurate. For example, you put out a nice brochure on how IWMD protects groundwater, but these apply to lined facilities and not Olinda Alpha (which is not lined). So, when you're rolling out a proposal in north Orange County and your graphics show a lined landfill, its not applicable and you tend to mislead. I want to ensure that if you're planning on introducing liquids, determine if it wouldn't apply to Brea and if not, don't mention it this way.

Please provide an estimate of what the County, in dollars, thinks it would cost extending the landfill to 2017 or 2021. You anticipate having mitigation, tipping and gate fees. I need a number on that. If it's incredibly high, maybe we can get some of that open space. If it's low, it's a mute point. I want to close the landfill as soon as possible. If its not economically feasible to do all of the things we want to do, maybe we should get the best thing we can which is a 150 acre plateau. Having that number would be important.

Response: Thank you.

Claire Schlotterbeck, Hills for Everyone

Question/Comment: The litany of broken promises related to the landfill is just staggering including what Mr. Vargas just said about it being an extension and not expansion. So I was surprised to see the expansion mentioned. The dump causes traffic problems along Imperial Highway for residents of Brea. Particulate mater is also a concern. Also, when you expand the landfill and make it higher you're causing damage to the Puente-Chino Hills wildlife corridor and you need to mitigate that damage if this goes through. Both of the properties located adjacent to the landfill are proposed for acquisition by one agency or another to be added to the Puente-Chino Hills wildlife corridor in Tonner Canyon. The expansion will also cause damage to Chino Hills State Park and will also need to be mitigated. The State Park was there before the dump and is being brought to the very edge of the park. Add language to the project objectives that they be mitigated and not reduced or minimized. We don't have much open space left and Bee and Round Canyons are beautiful canyons. The Plan needs to minimize the amount of trash that is being dumped.

Response: Thank you.

Melody Schlotterbeck, San Gabriel and Lower Los Angeles Rivers Mountains Conservancy

Question/Comment: Encourage people to visit landfills to see what is involved. Encourage mitigation fees that would pay for the purchase of open space in north Orange County or neighboring Los Angeles County. The Puente Hills Landfill has established a tipping fee of 1 dollar per ton that goes into their landfill native habitat preservation authority. Funds are dispersed for projects in the Whittier Hills and other surrounding areas. I would like to see a similar program adopted here. The 1 dollar number is ten years old however, I would like to encourage a study to determine the appropriate fee and the establishment of a habitat conservation authority for dispersing funds. There are 14,000 homes that have been approved or are currently being built. If you multiply that by 10 vehicle trips per day, that's a lot more cars on the road and it takes a lot longer to get anywhere in the City of Brea. The traffic issue really needs to be evaluated closely. I would also encourage the purchase of the Nuevo property adjacent to the landfill. Additional lands are open for sale and these should be purchased.

APPENDIX E
MEMORANDUM OF UNDERSTANDING/CITY OF BREA

MOU -

CITY OF BREA

BREA – MOU

03/10/92

RESOLUTION OF THE BOARD OF SUPERVISORS
ORANGE COUNTY, CALIFORNIA
March 10, 1992

On motion of Supervisor Vasquez, duly recorded and carried, the following resolution was adopted:

WHEREAS, on August 16, 1989, this Board, after consideration of the Phase I planning study for the North Orange County Landfill and Alternative Technologies Study, directed EMA to initiate the EIR process for landfill site selection; and

WHEREAS, on August 8, 1991, the Orange County Waste Management Commission/ Local Task Force recommended north County landfill sites to this Board, which included expansion of the Olinda/Olinda Alpha landfill as the highest priority; and

WHEREAS, on August 20, 1991, the Orange County Planning Commission recommended to this Board that Final EIR 523 is complete and adequate environmental documentation for the North Orange County Landfill and Alternative Technologies Study; and

WHEREAS, EIR 523 has been prepared in accordance with CEQA, the State Guidelines for Implementation of CEQA (CEQA Guidelines, California Code of Regulations 15000 et seq.);

NOW, THEREFORE, BE IT RESOLVED that:

1. Prior to approval of the FEIR (State Clearinghouse #90010470), this Board has reviewed and has considered the above-mentioned EIR and hereby certifies the FEIR for the North Orange County Landfill and Alternative Technologies Study as complete and adequate in that the report addresses all environmental effects of the proposed facility expansion and fully complies with the requirements of CEQA and the guidelines. Said FEIR is composed of the following elements:

a. Draft EIR 523 for the North Orange County Landfill and Alternative Technologies Study.

b. Appendices to the DEIR.

c. Agency staff reports to the Planning Commission dated July 25, August 6, and August 20, 1991.

d. Agency transmittal to this Board of Supervisors dated February 11, 1992.

e. Comments received on the DEIR and responses to those comments.

f. All attachments, incorporations and references delineated in a through e.

All of the above information has been and will be on file with the County of Orange, Environmental Planning Division, 12 Civic Center Plaza, Santa Ana, California.

COUNTY COUNSEL
ORANGE COUNTY

F0192-210 (3/77)

RESOLUTION OF THE BOARD OF SUPERVISORS
ORANGE COUNTY, CALIFORNIA
March 10, 1992

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WHEREAS, EIR 523 has been prepared in accordance with CEQA, the State Guidelines for Implementation of CEQA (CEQA Guidelines, California Code of Regulations 15000 et seq.);

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f. All attachments, incorporations and references delineated in a through e.

All of the above information has been and will be on file with the County of Orange, Environmental Planning Division, 12 Civic Center Plaza, Santa Ana, California.

2. This Board adopts the Findings with respect to each environmental effect identified in the FEIR and the explanation of its rationale with respect to each such Finding set forth in the document entitled "Statement of Findings and Facts" attached hereto and marked as Attachment A and made a part hereof.

3. This Board adopts the Findings with respect to alternatives set forth in the Statement of Findings and Facts.

4. This Board adopts the Findings with respect to overriding considerations set forth in the document entitled "Statement of Overriding Considerations," attached hereto and marked as Attachment B and made a part hereof.

5. This Board finds that the FEIR has identified all significant environmental effects of the project and that there are no known potential environmental impacts not addressed in the FEIR.

6. This Board finds that all significant effects of the project are set forth in the Statement of Findings and Facts and the FEIR.

7. This Board finds that, although the FEIR identifies certain significant environmental effects that will result if the project is approved, all significant effects that can feasibly be mitigated or avoided have been reduced to an acceptable level by the imposition of mitigation measures. All mitigation measures shall be incorporated into the project prior to or concurrent with project implementation. The list of mitigation measures is attached hereto and marked as Attachment C and incorporated herein by this reference.

8. This Board finds that potential mitigation measures or project alternatives not incorporated into the project (including the No-Project alternative) were rejected as infeasible, based upon specific economic, social and other considerations as set forth in Section III of the Statement of Findings and Facts and the FEIR.

9. This Board finds that the Mitigation Monitoring Report establishes a mechanism and procedures for implementing and verifying the mitigations pursuant to Public Resources Code Section 21086.6; the Report is attached hereto and marked as Attachment E.

10. This Board finds that the unavoidable significant impacts of the project, as identified in Attachment A that have not been reduced to a level of insignificance have been substantially lessened in their severity by the imposition of mitigation measures. All mitigation measures shall be incorporated into the project prior to or concurrent with project implementation. This Board finds that the remaining unavoidable significant impacts are clearly outweighed by the economic, social, and other benefits of the project, as set forth in the "Statement of Overriding Considerations."

Roger R Stanton
Chairman of the Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY
OF THIS DOCUMENT HAS BEEN DELIVERED
TO THE CHAIRMAN OF THE BOARD

Linda D Ruth
LINDA D. RUTH
Clerk of the Board of Supervisors
County of Orange, California

AYES: SUPERVISORS GADDI H. VASQUEZ, THOMAS F. RILEY, HARRIETT M. WIEDER, DON R. ROTH, AND ROGER R. STANTON

NOES: SUPERVISORS NONE

ABSENT: SUPERVISORS NONE

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, LINDA D. RUTH, Clerk of the Board of Supervisors of Orange County, California, hereby certify that the above and foregoing Resolution was duly and regularly adopted by the said Board at a regular meeting thereof held on the 10th day of March, 19 92, and passed by a unanimous vote of said Board.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 10th day of March, 19 92.

Linda D. Ruth
LINDA D. RUTH
Clerk of the Board of Supervisors
of Orange County, California

Roger R Stanton
Chairman of the Board of Supervisors

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Linda D. Ruth
LINDA D. RUTH
Clerk of the Board of Supervisors
of Orange County, California

RESOLUTION OF THE BOARD OF SUPERVISORS
ORANGE COUNTY, CALIFORNIA
March 10, 1992

On motion of Supervisor Vasquez, duly recorded and carried, the following resolution was adopted:

WHEREAS, less than seven (7) years of solid waste capacity remains at landfills currently serving northern Orange County; and

WHEREAS, the North Orange County Landfill and Alternative Technologies Study has been undertaken to identify and evaluate alternatives for providing additional solid waste disposal capacity for north Orange County; and

WHEREAS, on August 8, 1991, the Orange County Waste Management Commission/ Local Task Force recommended north County landfill sites to this Board, which identified expansion of the Olinda/Olinda Alpha landfill as the highest priority; and

WHEREAS, on March 3, 1992, the City of Brea approved a Memorandum of Understanding with the County which establishes duties and procedures regarding the continued operation of the Olinda/Olinda Alpha landfill;

NOW, THEREFORE BE IT RESOLVED that:

1. This Board approves the expansion of the Olinda/Olinda Alpha landfill as described in Final EIR 523 subject to three conditions:

a. The County will not utilize off-site borrow from borrow sites "A" or "B", the Beta parcel, or any property within the proposed or existing Chino Hills State Park (environmentally superior alternative).

b. The landfill will cease to accept solid waste no later than December 31, 2013.

c. The proposed Tonner Canyon access mitigation is not included with this approval.

2. This Board approves the Memorandum of Understanding with the City of Brea.

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Roger R. Stanton
Chairman of the Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY
OF THIS DOCUMENT HAS BEEN DELIVERED
TO THE CHAIRMAN OF THE BOARD

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Clerk of the Board of Supervisors
County of Orange, California

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NOES: SUPERVISORS NONE

ABSENT: SUPERVISORS NONE

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

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Linda D. Ruth
LINDA D. RUTH
Clerk of the Board of Supervisors
of Orange County, California

Roger R. Stanton
Chairman of the Board of Supervisors

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Linda D. Ruth
LINDA D. RUTH
Clerk of the Board of Supervisors
of Orange County, California

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE CITY OF BREA
AND
THE COUNTY OF ORANGE
REGARDING THE OLINDA-OLINDA ALPHA LANDFILL

THIS MEMORANDUM OF UNDERSTANDING is entered into on this 10th day of March, 1992 between the City of Brea ("City") and the County of Orange ("County"), through their respective legislative bodies. The purpose of this Memorandum of Understanding (MOU) regarding the County's proposed expansion of the Olinda/Olinda Alpha is to establish duties and procedures regarding the continued operation of the Olinda/Olinda Alpha landfill and other matters of mutual concern. The City and the County hereby agree that no expansion of the Olinda/Olinda Alpha landfill shall occur until applicable provisions of this MOU are implemented as follows:

A. Public Health and Safety

The potential danger of a landfill operation to public health and safety shall be minimized. Proper operation and monitoring shall be enforced. The following conditions are provided to achieve an environmentally safe operation.

1. Adherence to State Standards:

The Olinda/Olinda Alpha site will be operated in conformity with State requirements for a Class III landfill. Strict adherence to all applicable State standards is the legal responsibility of the landfill operating entity.

2. Surface and Groundwater Quality

a. Desiltation basins, surface water quality sampling, hazardous and toxic materials management procedures will be established to reduce nonpoint source pollution discharges to "the maximum extent practicable". Applicable "Best Management Practices" for the Olinda/Olinda Alpha landfill shall be implemented at the proposed site.

b. The appropriate Surface and Groundwater Hydrology and Water Quality Mitigation Measures per the NOCLATS EIR-523 shall be followed, as outlined in Attachment No. 1.

c. The County shall meet all National Pollutant Discharge Elimination System standards.

d. The County will submit a Groundwater Monitoring and Remediation Plan to the Regional Water Quality Control Board by July, 1992. Upon their approval of the plan, the County will prepare plans and specifications for an appropriate leachate collection and disposal system. The system should be in operation by March, 1993.

3. Methane Collection, Migration and Control Systems

Such activities shall be conducted under South Coast Air Quality Management District (SCAQMD) jurisdiction per Rule 1150.1 and per the regulations contained in the applicable Chapters and Sections of the California Code of Regulations (CCR), Title 14 and Title 23.

4. Hazardous Waste Exclusion Plan

a. The County will continue its load check program to prevent the disposal of hazardous material.

b. Any hazardous material found will be either properly stored and/or removed and properly disposed of.

c. County holds City harmless regarding hazardous materials cleanup to the extent permissible by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

B. Operating Procedures

In addition to meeting State standards, adherence to the following standards, even where they go above and beyond State standards, is a condition for landfill operation.

1. Operating Hours

The operating entity will limit landfill access to the hours of 6:00 AM to 4:00 PM Monday through Saturday.

2. Litter Control

a. The County shall require covers on all trash hauling vehicles.

b. The County shall control on-site windblown debris according to the latest acceptable landfill methods.

c. The County shall routinely clean-up debris from the access road.

d. The County shall establish a litter clean-up program for the following roadways:

The Tonner Canyon landfill access road from the landfill entrance to the 57 Freeway and any other City approved routes to and from the landfill.

3. Odor and Dust Control

a. The County will apply daily cover to the working face at Olinda/Olinda Alpha using appropriate cover material.

b. Grading areas and the access roads shall be watered daily, or as necessary to control dust, except when raining. Dust limits shall comply with SCAQMD standards.

c. Special operating procedures shall be established for Santa Ana wind and wet weather conditions.

4. Landscaping

a. County will develop an operational plan which will minimize the visual impact of the existing landfill as well as the proposed landfill expansion.

b. To further minimize the visual impact of the landfill, the County will obtain the City's approval of landscape and irrigation plans for the existing landfill and proposed expansion.

c. The County will submit landscape and irrigation plans as part of such plans for approval by the appropriate State agencies by September, 1992.

d. Plans will be implemented 90 days after State approval.

5. Closure - Post Closure

a. When the Olinda/Olinda Alpha landfill site is to close it shall be done in conformance with the State standards in effect at the time of closure.

b. The County will seek the City's input regarding Closure and Post Closure plan prior to submitting such plans to the appropriate agencies for approval.

6. Borrow Site

a. The County will not utilize off-site borrow from borrow sites "A" or "B", the Beta parcel, or any property within the proposed or existing Chino Hills State Park. The County may accept other off-site cover material which may become available.

b. The County shall aggressively advocate with appropriate State agencies the use of alternative cover such as shredded green waste.

c. To minimize environmental damage, the County may use alternative cover once approved by the State.

C. Access

1. The County will provide an access road to the landfill entrance via a route mutually agreed upon by City and County.

2. This access road will be designed and landscaped by the County. Road and landscape design plans must be mutually agreed upon by County and City.

3. If Tonner Canyon is used as an access road, a bridge over Valencia Avenue will be included as part of that project.

4. Valencia Avenue, upon City approval, may be used for landfill traffic entering or exiting the Olinda/Olinda Alpha site.

5. The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda/Olinda Alpha facility. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary the routes lie.

6. If Tonner Canyon is used as an access road, the Tonner Canyon interchange shall be modified consistent with the improvements necessary to handle the landfill trip generation based on an average annual maximum of 6,000 tons per day. If an assessment district or similar funding mechanism is established to cover the cost of full interchange improvements, the County agrees to participate in funding those improvements proportionate to its share of traffic demand. If during the expected lifetime of the landfill, traffic generation at the landfill increases, then the County will be responsible for full interchange or road improvements necessary to handle the increased demand.

7. No expansion of the landfill will occur until the access road and any landfill related interchange improvements are completed unless mutually agreed upon by the City and County.

D. Road Construction and Maintenance

1. The County will analyze existing structural sections and determine need for reconstruction of all designated landfill routes located in City or its sphere.

2. The City and County may share the cost for road reconstruction as well as maintenance of such streets, proportionate to Olinda/Olinda Alpha landfill-bound truck traffic. Such proportions will be determined via an axle count study to be conducted by County. Improvements made pursuant to this Agreement will not preclude or prejudice further improvements to such streets via Arterial Highway Funding Program.

E. Limitation on Volume

1. The Olinda/Olinda Alpha operation will be limited to a maximum annual average of six thousand (6,000) tons per day of municipal solid waste, excluding asphalt or soil.

2. Any waste discharge permit or the operating permit to be issued by the State of California shall specifically stipulate a maximum tonnage limitation of eight thousand (8,000) tons per day of municipal solid waste, excluding asphalt or soil.

3. Notwithstanding, the actual volume of municipal solid waste which may be accumulated throughout the expansion of Olinda/Olinda Alpha, the

landfill will cease acceptance of such waste no later than December 31, 2013. Any operating permit issued by the State which encompasses this date shall stipulate this limitation.

F. Landfill Park

1. The County shall establish temporary park uses on non-operating areas of the Olinda/Olinda Alpha landfill so long as the safety of the public and landfill operations can be maintained. Any temporary park and recreation facilities shall require the City's concurrence. The development and maintenance of these temporary facilities shall be funded from the Waste Management Enterprise Fund as a mitigation measure.

2. The County will prepare a General Development Plan for ultimate recreational uses to be established on the site following closure of landfill operations. Said plan shall be mutually agreed upon with the City and County. Said Plan shall be completed and approved prior to issuance of the State Operating Permit for the proposed expansion of the Olinda/Olinda Alpha landfill. Further, prior to the issuance of the State Operating Permit, the County shall develop a multi-year financial pro-forma indicating how sufficient funding shall accumulate for post-closure park development. The County shall accumulate, on a yearly basis, monies as indicated by the financial pro-forma.

3. The County shall provide that the closure plan for the Olinda/Olinda Alpha landfill includes a cover design appropriate for the recreational uses outlined in the General Development Plan for post closure uses.

G. Unanticipated Environmental Mitigation Claims

1. If, during the operation of the landfill expansion, unanticipated environmental impacts occur as a result of having the landfill within the City's boundary or sphere of influence, the City may file a claim with the County to offset such a burden. Any program proposal must demonstrate a reasonable relationship with the operation of the landfill.

2. The County shall disburse funds from the existing Environmental Mitigation Fund provided the program described offsets the environmental or infrastructure impacts reasonably associated with the landfill operation. The County shall accumulate sufficient funds on a yearly basis to cover anticipated program costs.

3. The County shall have full review and audit authority over such fund disbursements.

H. Land Use Planning

County shall not approve private development projects within the City's sphere of influence east of the 57 Freeway without verifying the City's

ability to provide necessary services. The County will not approve of private services such as septic tanks, individual wells, or retention basins.

I. Pursuit of Alternatives

The County and City agree to collaboratively explore waste recovery and other alternatives to landfill operations, as well as possible joint ventures in sponsoring such facilities.

J. Enforcement

1. The County will conform with all applicable regulations, restrictions and statutes at the Federal, State, and local level, as well as all provisions in this MOU.

2. If the ownership or operating responsibilities of the Olinda landfill are transferred or assigned to any other entity or agency, public or private, the County shall ensure that the obligations identified in this agreement will be reassigned so that the terms of this agreement shall continue to be met.

K. Arbitration

In the event that any dispute should arise between the parties hereto in regard to this MOU, the matter may be submitted to arbitration at the request of either the City or the County.

Said request shall state the matters the City/County considers to be in issue. The City/County shall, within thirty days, notify the requesting party, with its agreement with the listing of issues to be submitted to arbitration. Unless otherwise mutually agreed by the County Administrative Officer and the City Manager of Brea, an arbitrator shall be selected from a panel submitted by the American Arbitration Association and shall be selected from an uneven number listed, each party alternatively striking names from the list submitted until only the name of one arbitrator remains. The foregoing selection of an arbitrator shall be accomplished within 20 days of the submission of a list of arbitrators by AAA. In the event that the original request for arbitration is not answered within thirty days of delivery of notice, the party requesting arbitration may select an arbitrator from the list submitted by the American Arbitration Association and the decision of such an arbitrator shall be binding. If possible, the arbitrator shall conduct the first hearing within thirty days of selection and shall complete the arbitration and make an award in writing within thirty days of the close of an arbitration proceeding. The fees and expenses of the arbitrator, together with other expenses of the arbitration incurred or approved by the arbitrator, not including counsel fees or witness fees or other expenses incurred by a party for his own benefit, shall be borne equally by both parties.

L. Amendments

This memorandum of understanding may be amended at any time by mutual consent of the City and County.

"City":

THE CITY OF BREA, a municipal corporation

Dated: 3-3-92

By: _____
Ron Isles, Mayor

Attest:

_____
City Clerk

Dated: 3-3-92

_____
Frank Benest, City Manager

Attest:

_____
City Clerk

"County":

COUNTY OF ORANGE

Dated: 3-10-92

By: _____
Roger R. Stanton, Chairman
Orange County Board of Supervisors

Attest:

_____
Linda O. Ruth
Clerk of the Orange County
Board of Supervisors

92-135
3-10-92

ure is therefore part of the mitigation with respect to existing groundwater quality impacts through appropriate containment structures and monitoring programs in accordance with landfill design requirements outlined in Title 23. Additional mitigation measures are identified below:

1. The use of structural and non-structural Best Management Practices currently under development in response to the County of Orange's NPDES permit for stormwater quality shall be expanded as the new program evolves from an observational mode to a specific implementation. The proposed landfill projects shall comply with applicable Best Management Practices for such facilities. Development of the Orange County management plans for such industrial activities should be completed by July 1997 under terms of the existing NPDES.

2. The proposed landfill design and operational procedures have incorporated facilities which address the Federal NPDES goal of reducing nonpoint source pollution discharges to "the maximum extent practicable." Desilting basins, surface water quality sampling, detention and water quality management procedures are proposed with these water quality concerns in mind. Applicable Best Management Practices for landfills shall be implemented at the proposed sites, despite evidence that some local facilities may not be significant contributors of nonpoint source pollutants to surface runoff.

3. If wells are installed at any one of the potential landfill sites for the production of groundwater, each proposed well shall be flow tested to assess sustained production capability and drawdown characteristics. It is anticipated that flow rates would be relatively low (1 to 20 gallons per minute [gpm]) for wells completed in bedrock and potentially somewhat higher (2 to 10 times) for wells in extensive alluvial materials. The production of groundwater shall be maintained at a minimum volume necessary for the construction activities. This will minimize or limit the extent of impacts to the aquifer from groundwater extraction. In addition, groundwater wells, pumping hardware, and water distribution piping shall be maintained on a regular basis by the operator in order to extract groundwater as efficiently as possible, and to minimize pumping cost.

4. Containment structures shall be designed by and construction shall be supervised and certified by a registered civil engineer or a certified engineering geologist, with final inspection and approval by the State or Regional Water Resources Board (Title 23, Section 2540). Materials used in containment structures shall meet the general and specific criteria outlined in Sections 2541 and 2542 of Title 23.

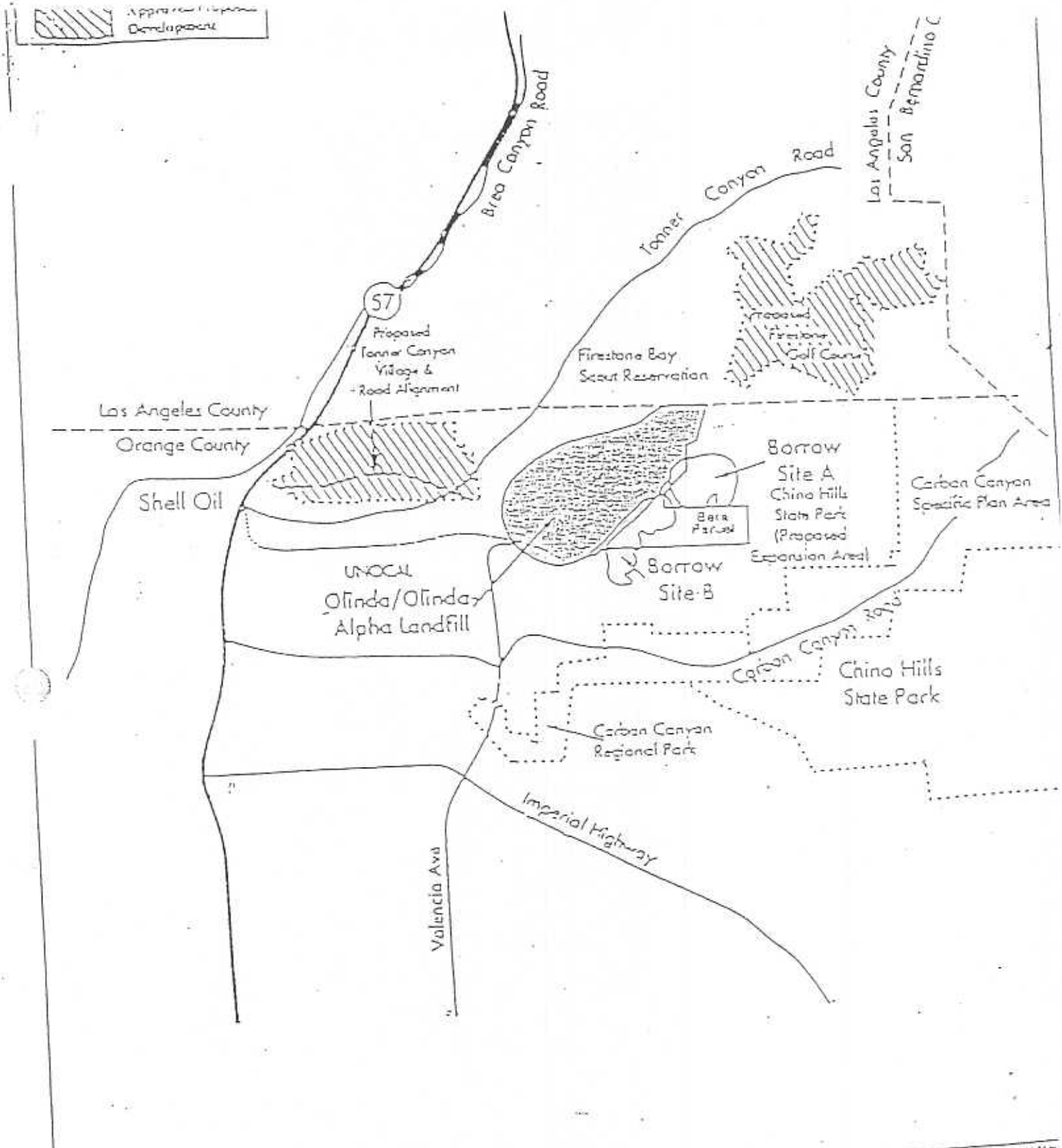
5. The monitoring program shall include procedures and appropriate sampling and analytical procedures that provide a reliable indication of groundwater quality in accordance with Section 2510 of Title 23 - General Groundwater Monitoring Requirements. The Regional Board shall specify in the waste discharge requirements for the Class III landfill permit what the length of the compliance period will be when water quality protection standards apply (Section 2554, Title 23). The compliance period is typically equal to the active life of the landfill, plus the closure period, and plus a post-closure maintenance period. The design, location, and indicator parameter selection for the groundwater monitoring program would be developed when a landfill site(s) is selected.

6. An additional monitoring well located hydraulically down-gradient of the Alpha/Olinda Canyon shall be installed to assess groundwater quality. The additional well would be installed using the same specifications as the previous wells.

7. Continued monitoring of surface and groundwater and the constituents listed is required by the owner according to Title 23 of the California Administrative Code. The compliance period for monitoring is typically equal to the active life of the landfill, plus the closure period, and plus a post-closure maintenance period or as specified by the Regional Board.

8. The water quality protection provisions outlined in Title 23 are intended to detect leaks at landfills and to provide a corrective action program should containment features fail to prevent leakage of wastes. Owners and operators shall conduct required programs in accordance with the provisions of Sections 2551 and 2555 of Title 23. These provisions require that the discharger shall institute a sophisticated detection monitoring program approved by the Regional Board. If indicator parameters or waste constituents are detected at the monitoring points as specified by the Regional Board, the discharger shall institute a verification monitoring program. If water quality protection standards have been exceeded at or down gradient of the monitoring points, the discharger shall institute a corrective action plan as approved by the Regional Board and in accordance with the requirements and provisions of Title 23.

9. In evaluating a site and establishing a system for on-site sewage disposal system, HCA/Environmental Health's "Onsite Sewage Disposal System Guidelines" shall provide the standard measure of acceptability.



Surrounding Land Uses:
Olinda/Olinda-Alpha Landfill

NORTH ORANGE COUNTY LANDFILL AND ALTERNATIVE TECHNOLOGIES STUDY EIR
COUNTY OF ORANGE

North

1ST AMENDMENT

COUNTY OF ORANGE

VICKI L. WILSON
Assistant Director

INTEGRATED WASTE MANAGEMENT DEPARTMENT
1200 N. Main Street, Suite 201
Santa Ana, California 92701
(714) 568-4160
FAX (714) 834-0754

February 9, 1993

Frank Benest, Ed.D.
City Manager
City of Brea
Number One Civic Center Circle
Brea, California 92621-5758

Dear Mr. Benest:

SUBJECT: First Amendment to Memorandum of Understanding (MOU) Between the City of Brea and the County of Orange Regarding the Olinda/Olinda Alpha Landfill

The purpose of this letter is to request to update the MOU to reflect current actions in response to regulation and scheduling requirements. The changes are in two major areas; Groundwater and Landscaping.

Groundwater:

As indicated in the March 10, 1992 MOU the County was to develop a Groundwater Monitoring and Remediation Plan to be submitted to the Santa Ana Regional Water Quality Control Board (SARWQCB) by July 1992. The County submitted the "Work Plan for Ground Water Investigation and Remediation, Olinda/Olinda Alpha Landfills" within the time frame of the MOU. The work plan approved by the SARWQCB is more complex and longer than was anticipated in the MOU and, as a result, will require that the March 1993 date in the MOU for system operation be changed. The Work Plan, as approved by the SARWQCB consists of two phases prior to commencement of system construction. Phase I is the Groundwater Investigation Component, and Phase II is the Selection, Design and Implementation of the Ground Water Monitoring Plan. The County requests that Paragraph A,2,d of the MOU be amended replacing the March 1993 date for system operation to July 1994.

Landscaping:

The second proposed change to the MOU concerns Paragraphs 8,4,c and 8,4,d which address operating procedures and landscaping. On January 5, 1993 the Board of Supervisors selected Bryan A. Stirrat and Associates (BAS) as the

1040SM

A/E firm to prepare a Master Plan and Waste Discharge Requirements to obtain a Solid Waste Facility Permit for the Olinda/Olinda Alpha Landfill Vertical Expansion Project. The Integrated Waste Management Department (IWMD) is currently developing a specific scope of work and schedule for this project with BAS which requires an amendment to the schedule of dates listed in the referenced paragraphs.

The County will submit landscape and irrigation plans to the California Integrated Waste Management Board (CIWMB) as part of the Solid Waste Facility Permit Application. That application will be submitted in June 1994 requiring a change to the September 1992 date listed in MOU Paragraph B,4,c.

The County will implement the landscape and irrigation plans upon approval of the CIWMB which is anticipated in March 1996. The existing MOU, Paragraph B,4,d, requires plans to be implemented 90 days after state approval. The County requests that the implementation date for landscape and irrigation plans be modified to read by July 1996.

The County's requested changes to the MOU are indicated in the enclosed First Amendment to the March 10, 1992 Memorandum of Understanding between the City of Brea and the County of Orange. Please sign and date both copies of the First Amendment and return one signed original to me.

Also, enclosed for your information is the updated Brea MOU Compliance Schedule which was presented on September 10, 1992 to the City and Community Advisory Committee. Suzanne McClanahan of my staff will contact Jim Cutts of your staff to schedule the next Community Advisory Committee Meeting shortly after the Board of Supervisors approves the negotiated contract with BAS.

Please call me or Suzanne McClanahan at (714) 568-4866 should you or your staff have any questions or require additional information regarding our request for first amendment changes to the MOU.

Sincerely,

Murry L. Cable, Director
Integrated Waste Management Department

SM:av

Enclosures

cc: Gaddi Vasquez, Third District
Vicki Wilson, IWMD
Suzanne McClanahan, IWMD

10405M

FIRST AMENDMENT
TO MEMORANDUM OF UNDERSTANDING BETWEEN
THE CITY OF BREA AND
THE COUNTY OF ORANGE REGARDING
THE OLINDA/OLINDA ALPHA LANDFILL

This FIRST AMENDMENT is made and entered into this 6th day of April, 1993, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding between the parties dated March 10, 1992.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The Public Health and Safety/Surface and Groundwater Quality Section, is amended by deleting the last sentence in Paragraph A,2,d in its entirety and substituting the following sentence:

   Paragraph A,2,d
   The system should be in operation by July 1994.

2. The Operating Procedures/Landscaping Section, is amended by deleting paragraphs B,4,c and B,4,d in their entirety and substituting the following:

   Paragraph B,4,c
   The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB) by June 1994.

   Paragraph B,4,d
   The County will implement landscape and irrigation plans, as approved by the CIWMB, by July 1996.

IN WITNESS WHEREOF, the parties hereto have executed this First Amendment to the Memorandum of Understanding on the dates opposite their respective signatures:

Date: 4-6-93

CITY OF BREA
By _____
City Manager

Date: 2/9/93

COUNTY OF ORANGE
By _____
County Administrative Officer

APPROVED AS TO FORM:
TERRY ANDRUS, COUNTY COUNSEL
ORANGE COUNTY, CALIFORNIA

By _____
Deputy

Date 2-10-93

1040SM

2ND AMENDMENT

AGENDA ITEM TRANSMITTAL

AGENCY/DEPT. USE	CLERK USE ONLY
CAO REVIEW	
[X] Concur	537J
[ ] Do Not Concur	
[ ] Exempt	

CONSENT [X]
DISCUSSION [ ]
PUBLIC HEARING [ ]

): BOARD OF SUPERVISORS, COUNTY OF ORANGE

:OM: Integrated Waste Management Department

CONTACT FOR INFORMATION
Vicki Wilson 834-4122

MEETING DATE	SUBJECT	SUPV. DIST.
June 13, 1995	Amendment to Brea Memorandum of Understanding for the Expansion of the Olinda/Olinda Alpha Landfill	3

UMMARY OF REQUEST (Description for Agenda):

\pprove the Second Amendment to the Memorandum of Understanding between the County of Orange and the :ity of Brea.

DDITIONAL DATA:

ee attached.

REVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:

March 10, 1992, Resolution No. 92-235

FUNDING SOURCE(S)	CURRENT YEAR COST	ANNUAL COST	BUDGETED?
Integrated Waste Management Department Enterprise Fund	NA	NA	[ ] YES [ ] NO NA

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?
[X] NO IF YES, STATE NUMBER ___ PERMANENT ___ LIMITED TERM

CONSISTENT WITH BOARD POLICY?
[X] YES [ ] NEW ITEM OR EXCEPTION

ECOMMENDED ACTION:

Approve the Second Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea and authorize the Chief Executive Officer to sign on behalf of the County.

CONCURRENCES (If Applicable)	ATTACHMENTS
B y Council	Memorandum of Understanding

6-9-95 Vicki L. Wilson

Vicki L. Wilson, Assistant Director

ADDITIONAL DATA:

On March 10, 1992, the Board of Supervisors certified the Final EIR 523 as adequate to satisfy the requirements of CEQA for the vertical expansion of the Olinda/Olinda Alpha Landfill and approved a memorandum of Understanding between the County of Orange and the City of Brea which established duties and procedures throughout the expansion process.

On February 9, 1993, The First Amendment to the MOU was approved which updated provisions to reflect current actions required in response to regulation and scheduling requirements. The changes related to the groundwater protection system and landscaping.

A second amendment has been negotiated between the County and the City of Brea in which the City approves the Olinda/Olinda Alpha Landfill Landscape Master Plan and the Project Report for the access road, subject to modifications to the MOU. On November 29, 1995, the Brea City Council approved the Second Amendment (included as the attachment) which serves to adjust the current County requirements. These requirements fall into two broad categories: access road issues and park planning and development.

The Second Amendment follows an extensive effort in cooperation with the City and its advisory bodies during which a thorough review of the vertical expansion of the Olinda/Olinda Alpha landfill was completed. During this process, the continued use of Valencia Avenue as access was affirmed, a naturalized landscaping treatment for the vertical expansion was selected and a shift in focus of the County's previous park commitment was identified. Rather than rely on a trust fund or similar mechanism to ensure full funding of an urban regional park on the landfill site, the amendment focuses on shorter range park planning and limited near term improvements coupled with an on-site natural regional park.

The MOU as revised by the Second Amendment, will serve to acknowledge the City's action to:

1. Approve the Landscape Master Plan.

2. Approve the Project Report for Access Road Alternatives and the use of Valencia Avenue as the sole means of access to and from the Olinda/Olinda Alpha Landfill subject to the following conditions:

   a. Valencia Avenue must be designed and constructed to meet the standards of a primary Arterial Highway from the south side of the Birch Street/Rose Drive intersection to the Alpha Access Road.

   b. The adjacent property owners and Caltrans in conjunction with the County work to widen Valencia Avenue to the ultimate Primary Arterial Highway standards which would be mutually beneficial to all parties concerned.

3. The General Development Plan is approved with the exception that the Plan be revised to incorporate an interim plan that would immediately include:

   a. Develop four lighted ball fields.

   b. Acquire and develop an 18-20 acre park and recreation facility.

   c. Redesign and develop Olinda Regional Park into a Natural Park.

   d. Develop a trail through the Beta parcel of the landfill.

   e. Fund a City of Brea Master Plan Study for Parks, Recreation, and Human Services.

SECOND AMENDMENT
TO MEMORANDUM OF UNDERSTANDING BETWEEN
THE CITY OF BREA AND
THE COUNTY OF ORANGE REGARDING
THE OLINDA/OLINDA ALPHA LANDFILL

This SECOND AMENDMENT is made and entered into this 29th day of November 1994, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding between the parties dated March 10, 1992 and amended on April 6, 1993, hereafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. The Public Health and Safety/Surface and Groundwater Quality Section, is amended by deleting the last sentence in Paragraph A,2,d in its entirety and substituting the following sentence:

   Paragraph A,2,d
   The interim system should be in operation by July 1994. The permanent leachate disposal and collection system should be in operation by June 1995.

2. The Operating Procedures/Landscaping Section, is amended by deleting Paragraphs B,4,c and B,4,d in their entirety and substituting the following:

   Paragraph B,4,c
   The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB).

   Paragraph B,4,d
   The County will continue to implement landscape and irrigation plans, as approved by the CIWMB.

3. The Access Section, is amended by deleting Paragraph C,7 in its entirety and substituting the following:

   Paragraph C,7
   No expansion of the landfill will occur until a Public Works construction contract has been put out to bid for the access road and any landfill related interchange improvements unless mutually agreed upon by the CITY and COUNTY. County agrees to award bid within 90 days after receipt of bids.

4. The Landfill Park Section, is amended by deleting Paragraphs F,1 and F,2 in their entirety and substituting the following:

Paragraph F,1
Because of potential interference of landfill operations resulting from the development of temporary park facilities on non-operating areas of the Olinda/Olinda Alpha Landfill, the COUNTY agrees to the following permanent facilities in lieu of the

development of temporary facilities. These permanent facilities will be developed by the COUNTY over the life of the landfill operation.

a. Development of recreational facilities within the next two years based on the findings of the Master Plan for Parks and Recreation for the City of Brea. ($1.5 million)

b. Obtain additional property adjacent to, or within reasonable proximity to, the landfill and develop a park and recreational complex on approximately 18-20 acres of land within the next five years. ($3.9 million and land acquisition)

c. Redesign the Olinda Regional Park to be a Natural Regional Park. Park development will commence in 2015 upon completion of landfill closure activities and will be phased over ten year period. ($3.4 million)

d. Develop and construct the trail through the Beta Parcel within two years as discussed in the conceptual General Development Plan. ($75,000)

e. All funding amounts identified above are indicated in 1994 dollars, as of November 1994. Since the above referenced park and recreation improvements will be made in subsequent years, these funding amounts will be adjusted annually referencing the November Consumer Price Index (Los Angeles, Anaheim, Riverside), All Urban Consumers Index [1967 = 100], published by the United States Department of Labor Bureau of Labor Statistics.

Should the development of these facilities be infeasible due to technical, environmental, or legal concerns, the CITY and COUNTY agree to negotiate in good faith and implement other feasible and financially comparable alternatives.

Paragraph F,2
The CITY and COUNTY will cooperate in the preparation of a Master Plan of Parks and Recreation for the CITY. Scope of said Master Plan shall be mutually agreed upon by the CITY and COUNTY. The Master Plan will address a variety of issues, including but not limited to, maintenance levels, scheduling, and user fees at COUNTY facilities within the CITY or its sphere of influence. COUNTY EMA/Harbors, Beaches & Parks will allocate $65,000 for development of the Master Plan. Said Master Plan shall be completed and approved by the CITY and COUNTY prior to issuance of the State Operating Permit for the proposed expansion of the Olinda/Olinda Alpha Landfill.

All other terms and conditions of the agreement remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment to the Memorandum of Understanding on the dates opposite their respective signatures:

CITY OF BREA

Date: 12/6/94

By: _____
City Manager

COUNTY OF ORANGE

Date: _____

By: _____
County Administrative Officer

By _____
Deputy

Date: 6/9/95

x:\Landfill\Amend#2

BOARD OF SUPERVISORS
ORANGE COUNTY, CALIFORNIA
MINUTES

JUNE 13, 1995

AMENDMENT TO BREA MEMORANDUM OF UNDERSTANDING FOR THE EXPANSION OF THE OLINDA/OLINDA ALPHA LANDFILL: The Integrated Waste Management Department requests approval of the Second Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.

MOTION: On motion by Supervisor Bergeson, seconded by Supervisor Steiner, the Board approved the Second Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea and authorized the Chief Executive Officer to sign on behalf of the County. MOTION UNANIMOUSLY CARRIED.

3RD AMENDMENT

AGENDA ITEM TRANSMITTAL

CONSENT [ ]
DISCUSSION [X]
PUBLIC HEARING [ ]

AGENCY/DEPT. USE	CLERK USE ONLY
CEO REVIEW	
[X] Concur	
[ ] Do Not Concur	
[ ] Exempt	

TO: BOARD OF SUPERVISORS, COUNTY OF ORANGE

FROM: Integrated Waste Management Department

CONTACT FOR INFORMATION
Vicki Wilson 834-4122
Ken R. Smith 834-3601

MEETING DATE	SUBJECT	SUPV. DIST.
August 19, 1997	Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill	3

SUMMARY OF REQUEST (Description for Agenda):

Approve the Third Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.

ADDITIONAL DATA:

See page 2.

PREVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:

March 10, 1992, Resolution No. 92-235; June 13, 1995, Minute Order

FUNDING SOURCE(S)	CURRENT YEAR COST	ANNUAL COST	BUDGETED?
Integrated Waste Management Department Enterprise Fund	$4,000,000	NA	[X] YES [ ] NO
		NA	

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?
[X] NO IF YES, STATE NUMBER ___ PERMANENT ___ LIMITED TERM

CONSISTENT WITH BOARD POLICY?
[X] YES [ ] NEW ITEM OR EXCEPTION

RECOMMENDED ACTION:

1. Find that the proposed project is covered by Final EIR No. 550, previously approved on August 5, 1997.
2. Approve the Third Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea and authorize the Clerk of the Board to sign on behalf of the Chairman of the Board of Supervisors.

CONCURRENCES (If Applicable)	ATTACHMENTS
City of Brea	Memorandum of Understanding

7/30/97
DATE

Vicki L. Wilson
AGENCY OR DEPARTMENT AUTHORIZED REPRESENTATIVE

Vicki L. Wilson, Director
Integrated Waste Management Department

ADDITIONAL DATA:

Background:

On March 10, 1992, the Board of Supervisors certified EIR No. 523 as adequate to satisfy the requirements of CEQA for the vertical expansion of the Olinda Alpha Landfill and approved a Memorandum of Understanding (MOU) between the County of Orange and the City of Brea which established obligations for the expansion process and other matters of mutual concern.

On April 6, 1993, the First Amendment to the MOU was approved which updated provisions to reflect actions required in response to regulations and scheduling requirements. The changes related to the ground water protection system and landscaping.

On June 13, 1995, the Second Amendment was approved which adjusted County requirements related to access road issues and park planning and development. The changes included approval of the Landscape Master Plan, approval of the project report designating the use of Valencia Avenue as the sole access road to and from the Olinda Alpha Landfill, and approval of the General Development Plan with revisions to incorporate interim park planning.

Third Amendment To The MOU Between the County of Orange and the City of Brea

A Third Amendment has been negotiated with the City which follows a cooperative effort to update the MOU based on current conditions. The use of Valencia Avenue as the principal access road to the Olinda Alpha Landfill was evaluated in Final EIR No. 550 and in accord with that EIR the MOU is revised to designate Valencia Avenue as the landfill access route, deleting all references to the Tonner Canyon alternative. It also identifies City and County responsibilities for access road design, implementation, and construction. The agreement authorizes an increase in the landfill daily tonnage limit to 7,000 tons per day, effective August 1, 1997 which is consistent with the County's current permit for Olinda Alpha. The MOU also specifies City and County responsibilities for park and recreation facilities planning and development.

The MOU as revised by the Third Amendment, serves to acknowledge the City and the County's agreement to:

Access

a. Designate Valencia Avenue as the landfill access road.
b Design and construct Valencia Avenue as a four lane ultimate-width roadway from Birch Street to Lambert Road and as a four lane interim-width roadway from Lambert Road to the northern most Olinda Heights access road.
c. Set March 1998 as the date for County to publish an Invitation for Bid for road construction and October 1999 as the date for County completion of construction.
d. Designate City responsibility for access road landscaping.
e. Authorize landfill expansion effective July 1, 1997.

Limitation of Volume

a. Increase the refuse volume limitation to a maximum annual average of 7,000 tons per day effective August 1, 1997.

Landfill Park

a. Authorize $1.5 million for planning and design of City sports park facilities.
b. Authorize $4 million for City acquisition of sports park property.
c. Authorize $3.9 million for City sports park facilities improvements.

ADDITIONAL DATA:

e. Set the construction date for the Beta Parcel Trail six months after Monterey Resources, Inc. installation of a traffic light on Carbon Canyon Road.
f. Designate funding amounts as 1997 dollars adjusted annually referencing the Consumer Price Index.

IWMD has submitted a $4 million budget adjustment for sports park acquisition expenditures which is subject to Board of Supervisors' approval of the fiscal year 1997-98 budget.

CEQA Compliance:

The proposed project is covered by Final EIR 550, previously approved on August 5, 1997.

THIRD AMENDMENT
TO MEMORANDUM OF UNDERSTANDING BETWEEN
THE CITY OF BREA AND
THE COUNTY OF ORANGE REGARDING
THE OLINDA ALPHA LANDFILL

This THIRD AMENDMENT is made and entered into this 5th day of August, 1997, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding (MOU) between the parties dated March 10, 1992 and amended on April 6, 1993 and November 29, 1994, hereinafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. **Operating Procedures**
The Operating Procedures Section is amended by deleting Paragraph B.2.d. in its entirety and substituting the following:

Paragraph B.2.d.
The County shall establish a litter clean-up program for the Valencia Avenue landfill access road and any other City approved routes to and from the landfill.

2. **Access**
The Access Section is amended by deleting Paragraphs C.1 through C.7 in their entirety and substituting the following:

Paragraph C.1
Valencia Avenue is the designated landfill access road for the Olinda Alpha Landfill.

Paragraph C.2
The County will design and construct Valencia Avenue as a four lane divided ultimate-width Primary Arterial Highway from Birch Street to Lambert Road and as a four lane undivided interim-width roadway within existing right of way westerly of centerline and ultimate one half width right of way easterly of centerline from Lambert Road to the northern most Olinda Heights access road.

Paragraph C.3
The County will begin design on Valencia Avenue widening by July 1997 and advertise for construction on or before March 1998 with construction to be completed by October 1999 unless otherwise mutually agreed by City Manager and County Director of IWMD.

Paragraph C.4
With respect to Valencia Avenue widening, the City's only responsibility shall be within the median. The City shall design and install all landscaping, irrigation, and appurtenant facilities at no cost to the County. The County shall be responsible for installing PVC sleeves under the street pavement for future installation of irrigation lines by City. The locations shall be determined by the City upon review of the County's final design.

Paragraph C.5
The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda Alpha Landfill. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary the routes lie.

Paragraph C.6
Expansion of the landfill as described in EIR #523 may proceed effective July 1, 1997.

3. **Road Construction and Maintenance**
The Road Construction and Maintenance Section is amended by deleting Paragraphs D.1 and D.2 in their entirety and substituting the following:

Paragraph D.1
The County's only responsibility for road construction and maintenance is as described in the Access Section, Paragraphs C1. through C.6. Any obligations or other requirements in previous versions of this MOU are rescinded.

4. **Limitation on Volume**
The Limitation on Volume Section, is amended by deleting Paragraph E.1 in its entirety and substituting the following:

Paragraph E.1
Effective August 1, 1997, the Olinda Alpha Landfill operation will be limited to a maximum annual average of seven thousand (7,000) tons per day of municipal solid waste, excluding asphalt and soil.

5. **Landfill Park**
The Landfill Park Section, is amended by deleting Paragraph F.1 in its entirety and substituting the following:

Paragraph F.1.a.
Because of potential interference of landfill operations resulting from the development of temporary park and recreation facilities on non-operating areas of the Olinda Alpha Landfill, the County agrees to allocate funds for specified permanent facilities in lieu of the development of temporary facilities. These permanent park and recreation facilities will be planned, designed, acquired, and constructed by the City. The County will allocate funds for the park and recreation facilities listed below provided the following funding allocation procedures have been followed:

Funding Allocation Procedure
(A) City will provide an annual certification that it has adopted an expenditure schedule for a Sports Park project (as referenced in the 1997 Parks, Recreation, Human Services, and Open Space Master Plan—see page 27 of the Master Plan) and project accounts in its current fiscal year budget.
(B) City will provide to County an annual Sports Park expenditure report for each account within 60 days of the close of each fiscal year.
(C) County will pay to City allocation specified below within 30 days of receipt of City certification, but no sooner than January of the specified fiscal year:

County Funding Allocation Schedule
1. FY 1997-1998 Property Acquisition - $4 Million January 1998
2. FY 1999-2000 Planning and Design - $1.5 Million January 2000.
3. FY 2000-2001 Construction - $3.9 Million January 2001

Funds not spent as allocated in FY 1999-2000 for Planning and Design may be reallocated for construction of the Sports Park project in FY 2000-2001

The County may, at any time, conduct an audit of the City's specified Sports Park accounts and expenditures. In no event will the County funding allocation be made earlier than January of the designated fiscal year. If City's project expenditures are not in accordance with the certified schedule, City and County will meet and confer to agree on a revised expenditure and allocation schedule. Subsequent County funding allocations will be delayed pending a mutually agreed upon expenditure schedule. This Memorandum of Understanding may be updated on an annual basis to reflect these schedule adjustments. City agrees to refund County payments if these funds are used for any activity other than for planning, design, acquisition, and construction of Sports Park facilities.

Paragraph F.1.b.
The County will redesign the Olinda Regional Park as a Natural Regional Park. Park development will commence in 2015 upon completion of landfill closure activities and will be phased over a ten year period. The County will allocate $3.4 million for this park project.

Paragraph F.1.c.
The County will construct the Beta Parcel trail within six months (6) after Monterey Resources, Inc. constructs and energizes the necessary traffic signal on Carbon Canyon Road which will provide a safe crossing for trail users.

Paragraph F.1.d.
All funding amounts identified in above Paragraphs F.1.a and F.1.b are indicated in 1997 dollars, as of June, 1997. Since the above referenced park and recreation improvements will be made in subsequent years, these funding amounts will be adjusted annually referencing the June consumer Price Index (Los Angeles, Anaheim, Riverside), All Urban Consumers Index [1997 = 100], published by the United States Department of Labor Statistics.

6. **Land Use Planning**
The Land Use Planning Section, is amended by adding the following to the end of paragraph H.:

In recognition of the City's long range planning in its Sphere of Influence, the County will continue to be sensitive and responsive to the City's comments on proposed land uses in that area.

7. **General Provisions**
Section L, Amendments, is amended by replacing the title with General Provisions and inserting the following paragraphs:

Paragraph L.1
Any discretionary actions by County set forth in this MOU which are not covered by EIR No. 523 and EIR No. 550 are subject to future California Environmental Quality Act (CEQA) compliance.

Paragraph L.2
This MOU may be amended at any time by mutual consent of the City and County.

All other terms and conditions of the agreement remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this THIRD AMENDMENT to the Memorandum of Understanding on the dates opposite their respective signatures:

COUNTY OF ORANGE

Date: AUG 19 1997

By: _____
Chairman, Board of Supervisors

SIGNED AND CERTIFIED THAT A COPY OF THIS THIRD AMENDMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD

Date: AUG 19 1997

By: ATTEST _____

Darlene J. Bloom
Clerk of the Board of Supervisors of
Orange County, California

CITY OF BREA

Date: 8/5/97

By: _____
Mayor, City of Brea

APPROVED AS TO FORM
Laurence M. Watson
County Counsel

By: _____

Date: 7/30/97

4TH AMENDMENT

AGENDA ITEM TRANSMITTAL

AGENCY/DEPT.USE	CLERK USE ONLY
CEO REVIEW	
[X] Concur	
[ ] Do Not Concur	
[ ] Exempt	

CONSENT [X]
DISCUSSION [ ]
PUBLIC HEARING [ ]

TO: BOARD OF SUPERVISORS, COUNTY OF ORANGE
FROM: Integrated Waste Management Department

CONTACT FOR INFORMATION
Vicki Wilson 834-4122
Suzanne McClanahan 834-4114

MEETING DATE	SUBJECT	SUPV. DIST.
June 29, 1999	Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding Olinda Alpha Landfill	3

SUMMARY OF REQUEST (Description for Agenda):

Approve the Fourth Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.

ADDITIONAL DATA:

See Page 2.

PREVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:

Mar[illegible]0,1992, Resolution No. 92-235; April 6, 1993, Minute Order(MO); June 13, 1995, MO; August 19, 1997, MO.

F[illegible]G SOURCE(S)	CURRENT YEAR COST	ANNUAL COST	BUDGETED?
Integrated Waste Management Department Enterprise Fund	N/A	N/A	[ ] YES [ ] NO N/A

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?
[X] NO IF YES, STATE NUMBER ___ PERMANENT ___ LIMITED TERM

CONSISTENT WITH BOARD POLICY?
[X] YES [ ] NEW ITEM OR EXCEPTION

RECOMMENDED ACTION:

1. Find that the proposed project is Categorically Exempt (Class 1) from the provisions of CEQA.
2. Approve the Fourth Amendment to the Memorandum of Understanding between City of Brea and County of Orange.
3. Authorize the Director of the IWMD to sign extension requests in accordance with the terms of the MOU on behalf of the County.

CONCURRENCE (If Applicable)	ATTACHMENTS
City of Brea	Amendment #4

6-9-99
DATE

Vicki L. Wilson
AGENCY OR DEPARTMENT AUTHORIZED REPRESENTATIVE

Vicki L. Wilson, Director
Integrated Waste Management Department

AIT\369DK

ADDITIONAL DATA:

Background:

On March 10, 1992, the Board of Supervisors certified EIR No. 523 as adequate to satisfy the requirements of CEQA for the vertical expansion of the Olinda Alpha Landfill and approved a Memorandum of Understanding (MOU) between the County of Orange and the City of Brea which established obligations for the expansion process and other matters of mutual concern.

On April 6, 1993, the First Amendment to the MOU was approved which updated provisions to reflect actions required in response to regulations and scheduling requirements. The changes related to the ground water protection system and landscaping.

On June 13, 1995, the Second Amendment was approved which adjusted County requirements related to access road issues and park planning and development. The changes included approval of the Landscape Master Plan, approval of the project report designating the use of Valencia Avenue as the sole access road to and from the Olinda Alpha Landfill, and approval of the General Development Plan with revisions to incorporate interim park planning.

On August 19, 1997, the Third Amendment was approved which updated the MOU based on the Final EIR 550. The MOU was revised to designate Valencia Avenue as the landfill access route, deleting all references to the Tonner Canyon alternative. It also identified City and County responsibilities for access road design, implementation, and construction. The agreement authorized an increase in the landfill daily tonnage limit to an annual average of 7,000 tons per day, effective August 1, 1997, which is consistent with the County's current operating permit for the Olinda Alpha Landfill. The MOU also specifies City and County responsibilities for park and recreation facilities planning and development.

Fourth Amendment to the MOU between City of Brea and County of Orange

A Fourth Amendment has been negotiated with the City that addresses the accumulation of solid waste following landfill closures on the six scheduled County holidays (New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas) and emergencies. Transfer stations and haulers experience increased collection on those days requiring the flexibility to increase the daily tonnage limits in order to meet the demand.

The MOU as revised by the Fourth Amendment, serves to acknowledge the City's agreement to:

1. Extend operating hours by one additional hour in the evening for one working day following a scheduled holiday or an emergency.
2. Increase the allowable daily tonnage limit to 10,000 tons per day for one working day following a scheduled holiday or an emergency.
3. Authorize the City Manager to extend these accommodations on a day to day basis, upon the request of the County.

CEQA Compliance:

The proposed project is Categorically Exempt (Class 1) from the provisions of CEQA. Class 1 (CEQA Guidelines Section 15301) provides for the exemption of projects involving operational changes to an existing facility where there is negligible or no expansion of use beyond that previously existing.

FOURTH AMENDMENT
TO THE MEMORANDUM OF UNDERSTANDING BETWEEN
CITY OF BREA AND COUNTY OF ORANGE
FOR OLINDA ALPHA LANDFILL

This FOURTH AMENDMENT is made and entered into this _____day of _____, 1999, by and between the County Of Orange, hereinafter referred to as "COUNTY" and the City of Brea, hereinafter referred to as "'CITY", and is made to the Memorandum of Understanding (MOU) between the parties dated March 10, 1992 and amended on April 6, 1993, June 13, 1995 and August 19, 1997, hereinafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

The Operating Procedures Section is amended by deleting Section B., Paragraph 1 and Section E., Paragraph 2 in their entirety and substituting the following:

Section B. Operating Procedures, Paragraph 1 - Operating Hours

Operating hours shall be limited to 6:00 a.m. to 4:00 p.m. Monday through Saturday. However, operating hours shall be extended one additional hour to 5:00 p.m. for one working day following New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas Day and for one working day following emergencies requiring landfill shutdown.

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

Section E. Limitation on Volume, Paragraph 2

The maximum tonnage per day of municipal solid waste discharged shall be limited to 8,000 tons per day. Operator shall be allowed to increase daily tonnage limit to 10,000 tons per day for one working day following Thanksgiving, Christmas, New Year's Day, Memorial Day, Independence Day, and Labor Day and for one working day following emergencies requiring landfill shutdown.

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

The annual average tonnage limit of 7,000 tons per day of municipal solid waste will not increase (Section E. Limitation on Volume, Paragraph 2).

All other terms and conditions of the agreement remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this FOURTH AMENDMENT to the Memorandum of Understanding on the dates opposite their respective signatures:

Date: 4/23/99

CITY OF BREA

By _____
City Manager

Date: _____

COUNTY OF ORANGE

By _____
Director, Integrated Waste
Management Department

APPROVED AS TO FORM:
Laurence M. Watson
COUNTY COUNSEL

By _____

Date: 4/16/99

PO:DK:BreaMOU4

5TH AMENDMENT

AGENDA ITEM TRANSMITTAL

CONSENT ☐
DISCUSSION ☒
PUBLIC HEARING ☐

AGENCY/DEPT. USE	CLERK USE ONLY
CEO REVIEW ☒ Concur ☐ Do Not Concur ☐ Exempt	

TO: BOARD OF SUPERVISORS, COUNTY OF ORANGE

FROM: Integrated Waste Management Department

CONTACT FOR INFORMATION:
John W. Sibley 834-4122
Gil Scofield 834-2065

MEETING DATE:	SUBJECT:	SUPV. DIST
AUG 15 2000	Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill.	3

SUMMARY OF REQUEST (Description for Agenda):

Approve the Fifth Amendment to the Memorandum of Understanding Between the County of Orange and the City of Brea.

ADDITIONAL DATA:
See Attached Pages.

PREVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:
March 10, 1992, Resolution No. 92-235, Minute Orders: April 6, 1993, June 13, 1995, August 19, 1997 and June 29, 1999.

FUNDING SOURCE (S):	CURRENT YEAR COST	ANNUAL COST	BUDGETED?
Integrated Waste Management Department Enterprise	$3,900,000	N/A	☒ YES ☐ NO

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?	CONSISTENT WITH BOARD POLICY?
☒ NO IF YES, STATE NUMBER PERMANENT LIMITED TERM	☒ YES ☐ NEW ITEM OR EXCEPTION

RECOMMENDED ACTIONS:

1. Approve the Fifth Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.
2. Authorize the Director, Integrated Waste Management Department to sign on behalf of the Chairman of the Board of Supervisors.

CONCURRENCES (If Applicable)	ATTACHMENTS
City of Brea	Proposed Fifth Amendment

7/25/00
DATE

for
AGENCY OR DEPARTMENT AUTHORIZED REPRESENTATIVE

John W. Sibley, Director
Integrated Waste Management Department

ADDITIONAL DATA:

Background:

On March 10, 1992, your Honorable Board certified EIR No. 523 as adequate to satisfy the requirement of CEQA for the vertical expansion of the Olinda Alpha Landfill. You also approved a Memorandum of Understanding (MOU) between the County of Orange and the City of Brea that established obligations for the expansion process and other matters of mutual concern.

Subsequent to certification of EIR No. 523 and approval of the related resolutions, the MOU underwent the following:

The First Amendment to the MOU was approved on April 6, 1993. This updated provisions related to the landfill's ground water protection and landscaping systems.

The Second Amendment was approved on June 13, 1995. This adjusted County requirements related to road access issues and park planning and development. The changes included approval of the Landscape Master Plan, approval of the project report designating the use of Valencia Avenue as the sole access road to and from the Olinda Alpha Landfill, and approval of the General Development Plan with revisions to incorporate interim park planning.

The Third Amendment was approved on August 19, 1997. This updated the MOU in accordance with Final EIR No. 550 designating Valencia Avenue as the Olinda Alpha Landfill access route and deleting all references to the Tonner Canyon alternative. The Third Amendment also included the following: City and County responsibilities for access road design, implementation, and construction; authorized an increase in the landfill daily tonnage limit to 7,000 tons per day; and specified City and County responsibilities for park and recreation facilities planning and development.

The Fourth Amendment was approved on June 29, 1999. This updated the MOU to address the accumulation of solid waste following landfill closures on any of the six scheduled County holidays. The Amendment allowed the following: the landfill to remain open one additional hour in the evening following a scheduled holiday or an emergency, to increase daily tonnage to 10,000 tons per day for one working day following a scheduled holiday or emergency and allowed the City Manager to extend these accommodations on a day to day basis, upon the request of the County.

FIFTH Amendment To The MOU Between the County and the City of Brea

The City of Brea submitted letters to IWMD on February 29 and March 20, 2000. They requested early release of $3.9 million payment referenced in the Third Amendment to the MOU. The requested funds are required to supplement existing land acquisition funds set aside for the Sport Park Facility identified in the MOU. The City has made an offer on the land, established a final price, and anticipates closing escrow within six months. The City's land purchase actions and advance funding request are also being made to avoid any increase in land value due to imminent development of available land in the immediate area of the Sport Park Facility site.

The proposed Fifth Amendment has been negotiated with the City. The MOU, as revised, modifies the Funding Allocation Procedure and Schedule.

CEQA Compliance

The recommended action is not a project as defined by CEQA.

FIFTH AMENDMENT

TO MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF BREA AND THE COUNTY OF ORANGE REGARDING THE OLINDA ALPHA LANDFILL

The FIFTH AMENDMENT is made and entered into this_____ day of _____, 2000, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding (MOU) between the parties dated March 10, 1992 and amended on April 6, 1993, June 13, 1995, August 19, 1997, and June 29, 1999, hereinafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Landfill Park – Funding Allocation Procedure and Schedule

The Landfill Park Section, is amended by deleting Paragraph F.1.a in its entirety and substituting the following:

Paragraph F.1.a. (1)

COUNTY agrees to allocate funds in the amount of $3.9 million for land acquisition, whereon permanent park and recreation facilities are to be constructed. These permanent park and recreational facilities will be planned, designed, acquired, and constructed by the CITY. The COUNTY will allocate funds for the land acquisition provided the following funding allocation procedures have been followed:

Funding Allocation Procedure

(A) COUNTY will pay to the CITY allocation specified below within 30 days of receipt of CITY certification.

Funding Allocation Schedule

1. FY 2000-2001 Property Acquisition - $3.9 Million

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//

Funds not spend as allocated in FY 2000-2001 for land acquisition may be reallocated for planning and construction of the Sports Park Facilities Project.

The COUNTY may, at any time, conduct an audit of the CITY's specified Sports Park Facilities accounts and expenditures.

If CITY's project expenditures are not in accordance with the certified schedule, CITY and COUNTY will meet and confer to agree on a revised expenditure schedule. CITY agrees to refund COUNTY payments if these funds are used for any activity other than planning, design, acquisition, and construction of Sports Park Facilities.

2. All other term and conditions of the MOU shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this FIFTH AMENDMENT to the Memorandum of Understanding on the dates opposite their respective signatures:

CITY OF BREA

Date: 7-6-00

By: Tim O'Donnell

CITY Manager

COUNTY OF ORANGE, a political subdivision of the State of California

Date: 7/17/00

By: for

John W. Sibley, Director
Integrated Waste
Management Department

APPROVED AS TO FORM:
LAURENCE M. WATSON
COUNTY COUNSEL

By:

Geoffrey K. Hunt, Deputy

Date: 6/20/00

ORANGE COUNTY BOARD OF SUPERVISORS

COPY

MINUTE ORDER

August 22, 2000

Received

AUG 25 2000

Auditor Controller
IWMD Accounting

Submitting Agency/Department: INTEGRATED WASTE MANAGEMENT DEPARTMENT

Approve amendment 5 to Memorandum of Understanding with City of Brea regarding Olinda Alpha Landfill to advance funding payment for Sport Park Facility- District 3 (Continued from 8/15/00, Item 48)

The following is action taken by the Board of Supervisors:

APPROVED AS RECOMMENDED ☒ OTHER ☐

Unanimous ☒ (1) SMITH: Y (2) SILVA: Y (3) SPITZER: Y (4) COAD: Y (5) WILSON: Y

Vote Key: Y=Yes; N=No; A=Abstain; X=Excused; B.O.=Board Order

Documents accompanying this matter:

- ☐ Resolution(s)
- ☐ Ordinances(s)
- ☐ Contract(s)

Item No. 75

Special Notes:

Copies sent to:

CEO
IWMD John Sibley
Auditor

I certify that the foregoing is a true and correct copy of the Minute Order adopted by the Board of Supervisors , Orange County, State of California.
DARLENE J. BLOOM, Clerk of the Board

By: Sandy Champion
Deputy

FIFTH AMENDMENT

TO MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF BREA AND THE COUNTY OF ORANGE REGARDING THE OLINDA ALPHA LANDFILL

The FIFTH AMENDMENT is made and entered into this 22 day of Aug 2000, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding (MOU) between the parties dated March 10, 1992 and amended on April 6, 1993, June 13, 1995, August 19, 1997, and June 29, 1999, hereinafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Landfill Park – Funding Allocation Procedure and Schedule

The Landfill Park Section, is amended by deleting Paragraph F.1.a in its entirety and substituting the following:

Paragraph F.1.a. (1)

COUNTY agrees to allocate funds in the amount of $3.9 million for land acquisition, whereon permanent park and recreation facilities are to be constructed. These permanent park and recreational facilities will be planned, designed, acquired, and constructed by the CITY. The COUNTY will allocate funds for the land acquisition provided the following funding allocation procedures have been followed:

Funding Allocation Procedure

(A) COUNTY will pay to the CITY allocation specified below within 30 days of receipt of CITY certification.

Funding Allocation Schedule

1. FY 2000-2001 Property Acquisition - $3.9 Million

//

//

Funds not spend as allocated in FY 2000-2001 for land acquisition may be reallocated for planning and construction of the Sports Park Facilities Project.

The COUNTY may, at any time, conduct an audit of the CITY's specified Sports Park Facilities accounts and expenditures.

If CITY's project expenditures are not in accordance with the certified schedule, CITY and COUNTY will meet and confer to agree on a revised expenditure schedule. CITY agrees to refund COUNTY payments if these funds are used for any activity other than planning, design, acquisition, and construction of Sports Park Facilities.

2. All other term and conditions of the MOU shall remain unchanged.

IN WITNESS WHEREOF, the parties hereto have executed this FIFTH AMENDMENT to the Memorandum of Understanding on the dates opposite their respective signatures:

CITY OF BREA

Date: 7-6-00

By: Tim O'Donnell

CITY Manager

COUNTY OF ORANGE, a political subdivision of the State of California

Date: 7/17/00

By: for

John W. Sibley, Director
Integrated Waste
Management Department

APPROVED AS TO FORM:
LAURENCE M. WATSON
COUNTY COUNSEL

By:

Geoffrey K. Hunt, Deputy

Date: 6/20/00

AGENDA ITEM TRANSMITTAL

CONSENT ☐

DISCUSSION ☒

PUBLIC HEARING ☐

AGENCY/DEPT. USE CEO REVIEW	CLERK USE ONLY
☒ Concur ☐ Do Not Concur ☐ Exempt	Received AUG 25 2000 Auditor-Controller IWMD Accounting

TO: BOARD OF SUPERVISORS, COUNTY OF ORANGE

FROM: Integrated Waste Management Department

CONTACT FOR INFORMATION:
John W. Sibley 834-4122
Gil Scofield 834-2065

MEETING DATE:	SUBJECT:	SUPV. DIST
AUG 15 2000	Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill.	3

SUMMARY OF REQUEST (Description for Agenda):

Approve the Fifth Amendment to the Memorandum of Understanding Between the County of Orange and the City of Brea.

ADDITIONAL DATA:

See Attached Pages.

PREVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:
March 10, 1992, Resolution No. 92-235, Minute Orders: April 6, 1993, June 13, 1995, August 19, 1997 and June 29, 1999.

FUNDING SOURCE (S):	CURRENT YEAR COST	ANNUAL COST	BUDGETED?
Integrated Waste Management Department Enterprise	$3,900,000	N/A	☒ YES ☐ NO

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?	CONSISTENT WITH BOARD POLICY?
☒ NO IF YES, STATE NUMBER PERMANENT LIMITED TERM	☒ YES ☐ NEW ITEM OR EXCEPTION

RECOMMENDED ACTIONS:

1. Approve the Fifth Amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.
2. Authorize the Director, Integrated Waste Management Department to sign on behalf of the Chairman of the Board of Supervisors.

CONCURRENCES (If Applicable)	ATTACHMENTS
City of Brea	Proposed Fifth Amendment

7/25/00
DATE

for
AGENCY OR DEPARTMENT AUTHORIZED REPRESENTATIVE

John W. Sibley, Director
Integrated Waste Management Department

Fifth Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill

ADDITIONAL DATA:

Background:

On March 10, 1992, your Honorable Board certified EIR No. 523 as adequate to satisfy the requirement of CEQA for the vertical expansion of the Olinda Alpha Landfill. You also approved a Memorandum of Understanding (MOU) between the County of Orange and the City of Brea that established obligations for the expansion process and other matters of mutual concern.

Subsequent to certification of EIR No. 523 and approval of the related resolutions, the MOU underwent the following:

The First Amendment to the MOU was approved on April 6, 1993. This updated provisions related to the landfill's ground water protection and landscaping systems.

The Second Amendment was approved on June 13, 1995. This adjusted County requirements related to road access issues and park planning and development. The changes included approval of the Landscape Master Plan, approval of the project report designating the use of Valencia Avenue as the sole access road to and from the Olinda Alpha Landfill, and approval of the General Development Plan with revisions to incorporate interim park planning.

The Third Amendment was approved on August 19, 1997. This updated the MOU in accordance with Final EIR No. 550 designating Valencia Avenue as the Olinda Alpha Landfill access route and deleting all references to the Tonner Canyon alternative. The Third Amendment also included the following: City and County responsibilities for access road design, implementation, and construction; authorized an increase in the landfill daily tonnage limit to 7,000 tons per day; and specified City and County responsibilities for park and recreation facilities planning and development.

The Fourth Amendment was approved on June 29, 1999. This updated the MOU to address the accumulation of solid waste following landfill closures on any of the six scheduled County holidays. The Amendment allowed the following: the landfill to remain open one additional hour in the evening following a scheduled holiday or an emergency, to increase daily tonnage to 10,000 tons per day for one working day following a scheduled holiday or emergency and allowed the City Manager to extend these accommodations on a day to day basis, upon the request of the County.

FIFTH Amendment To The MOU Between the County and the City of Brea

The City of Brea submitted letters to IWMD on February 29 and March 20, 2000. They requested early release of $3.9 million payment referenced in the Third Amendment to the MOU. The requested funds are required to supplement existing land acquisition funds set aside for the Sport Park Facility identified in the MOU. The City has made an offer on the land, established a final price, and anticipates closing escrow within six months. The City's land purchase actions and advance funding request are also being made to avoid any increase in land value due to imminent development of available land in the immediate area of the Sport Park Facility site.

The proposed Fifth Amendment has been negotiated with the City. The MOU, as revised, modifies the Funding Allocation Procedure and Schedule.

CEQA Compliance

The recommended action is not a project as defined by CEQA.

City of Brea

March 20, 2000

John Sibley
Director IWMD
County of Orange
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

Dear John:

The attached billing is to request the early release of the final $3.9 Million payment referenced in the Third Amendment to the MOU between the City of Brea and the County of Orange re: Olinda Alpha landfill.

The funds are being used to acquire land to build a Sports Park Facility. The need for the Sports Park Facility has previously been well documented.

As previously mentioned in the City Manager's correspondence dated February 29, 2000, the City of Brea is about to make an offer to acquire the Sports Park property and needs the additional funds to be able close escrow.

As you may be aware, the cost of land in the area has skyrocketed since the MOU was signed just two and a half years ago. The original estimate of land costs was $4 Million and was based on available comps at the time. However, the value of this type of property has more than doubled in that short time. Further development of available land in the immediate area is imminent, which will only make land even more costly for the City to acquire. Therefore, the City cannot afford to delay the purchase any longer by waiting until the original scheduled date (January 1, 2001) for the release of the final payment.

If you need any further information, please don't hesitate to call me at (714) 990-7675.

Yours truly,

Lawrence D. Hurst
Financial Services Director

Cc: Ron Pierre, Manager of Budget and Finance, IWMD
Frank Benest, City Manager
Sue Georgino, Redevelopment Services Director

LDH:ng/s:larry/sports park land acquisition

March 20, 2000
Date of Request

County of Orange
Customer Name

320 N. Flower St., #400
Mailing Address

Santa Ana, CA 92703
City State Zip

John Sibley – Director IWMB
To the Attention of

BREA CALIFORNIA

CITY OF BREA

INVOICE

Please send this form to:
Finance Department
Accounts Receivable

For Finance Use Only
6074

Customer Number

Invoice Number

Offset Account

Offset Account

A/R Type Code

A/R Type Code

Item #	Quantity	Description	Unit Price	Total Price
		3rd Billing – City of Brea Sports Park Property Acquisition PR #7847 See attached for detail		$3,900,000.00
			Subtotal	$3,900,000.00
			Tax	
			Total	**$3,900,000.00**

510-70-7847-3539
Credit Account

$3,900,000.00
Amount

Credit Account Amount

Lawrence D. Hurst
Requested by

1411
Dept./Div./Prgm.

Approved By

City of Brea

February 29, 2000

Mr. John Sibley
Director, IWMD
County of Orange
320 N. Flower Street, Ste. 400
Santa Ana, CA 92703

Dear John:

The City's Memorandum of Understanding (MOU) with the County regarding the extension of the Olinda/Olinda-Alpha Landfill provides a final payment of $3.9million to be paid by the County on January 1, 2001. The City of Brea is requesting that the County of Orange advance this money within the next six months since we are about to make an offer to acquire the land for the Sports Park and need this final payment to help fund the acquisition. The City is requesting that this final payment of $3.9 million be payable at the close of escrow for the land. Again, we anticipate that escrow will close within six months.

Thank you for considering this amendment to the MOU.

Sincerely,

Frank Benest
City Manager

FB:kts

corres\olinda landfill mou final paymt

cc: Mayor and Members of City Council
Larry Hurst, Financial Services Director
Sue Georgino, Redevelopment Services Director

Civic & Cultural Center • 1 Civic Center Circle • Brea, California 92821-5732 • 714/990-7600 • FAX 714/990-2258

From: Linda Hagthrop
To: Suzanne McClanahan
Date: 3/14/00 8:58AM
Subject: Brea MOU change

Hi Suzanne. Ron Pierre is working on a revision to the Brea MOU at JWS's request. The change has to do with providing funds to the City prior to the specified date. Ron realizes that we usually do this type of thing but must proceed because it was directed that way. Anyway, he needs to know the contact person to work with at the City.

He's sending down a copy of the letter directing this and he will keep us posted.

CC: Ron Pierre

3/14/00
Suzanne McClanahan

Attached is a copy of the letter received from the City of Brea requesting an early advance of $3.9 million.

Ron

AIT/CONTRACT ROUTING SLIP

FROM: Ron Pierre DATE: 4/19/00

[×] AIT [ ] AGREEMENT [×] AMENDMENT

BOARD MEETING DATE: June 27, 2000

SUBJECT: Fifth Amendment to Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill

ROUTING	INITIAL	DATE
1. Send e-mail to Patty Arreola with subject/hearing date and to obtain a footer number. S :\432		
2. Suzanne McClanahan, Program Office	SMC	4/20/00
3. Frank Kim, Finance/Budget Control		
4. Jim Pfaff * (QA/QC Review)		
5. Gil Scofield, Division Manager		
6. Patty Arreola		
7. John Sibley, Director		

- If AIT is not acceptable, AIT will be returned to Division Manager.

[×] Send to:

[×] County Counsel
[ ] CEO (Rosemary Dey)
[ ] Clerk of the Board (Sandy Champine)

AGENDA ITEM TRANSMITTAL

CONSENT [X]
DISCUSSION [ ]
PUBLIC HEARING [ ]

AGENCY/DEPT. USE	CLERK USE ONLY
CEO REVIEW [ ] Concur [ ] Do Not Concur [ ] Exempt	

TO: BOARD OF SUPERVISORS, COUNTY OF ORANGE

FROM: Integrated Waste Management Department

CONTACT FOR INFORMATION:
John W. Sibley 834-4122
Gil Scofield 834-2065

MEETING DATE:	SUBJECT:	SUPV. DIST
June 27, 2000	Amendment to the Memorandum of Understanding Between the City of Brea and the County of Orange Regarding the Olinda Alpha Landfill.	3

SUMMARY OF REQUEST (Description for Agenda):

Approve the Fifth Amendment to the Memorandum of Understanding Between the County of Orange and the City of Brea.

ADDITIONAL DATA:
See Attached Pages .

PREVIOUS RELEVANT BOARD ACTIONS ON THIS SPECIFIC ITEM:
March 10, 1992, Resolution No. 92-235, Minute Orders: April 6, 1993, June 13, 1995, August 19, 1997 and June 29, 1999.

FUNDING SOURCE(S): Integrated Waste Management Department Enterprise Fund	CURRENT YEAR COST $3,900,000	ANNUAL COST N/A	BUDGETED? [X] YES [ ] NO

WILL PROPOSAL REQUIRE ADDITIONAL PERSONNEL?
[X] NO IF YES, STATE NUMBER PERMANENT LIMITED TERM

CONSISTENT WITH BOARD POLICY?
[X] YES [ ] NEW ITEM OR EXCEPTION

RECOMMENDED ACTIONS:

1. CEQA Finding?
2. Approve execution of the Fifth amendment to the Memorandum of Understanding between the County of Orange and the City of Brea.
3. Authorize the Director of the IWMD to sign on behalf of the chairman of the Board of Supervisors.

CONCURRENCES (If Applicable)
Brea City Council

ATTACHMENTS
Fifth Amendment

DATE

AGENCY OR DEPARTMENT AUTHORIZED REPRESENTATIVE

John W. Sibley, Director
Integrated Waste Management Department

(will you attach the action taken by the City council or just defer

Does John want to not sign on behalf of the Board...

ADDITIONAL DATA:

Background:

On March 10, 1992, your Honorable Board certified EIR No. 523 as adequate to satisfy the requirement of CEQA for the vertical expansion of the Olinda Alpha Landfill. You also approved a Memorandum of Understanding (MOU) between the County of Orange and the City of Brea that established obligations for the expansion process and other matters of mutual concern. On April 6, 1993, the First Amendment to the MOU was approved. This updated provisions to reflect actions required in response to regulations and scheduling related to the landfill's ground water protection and landscaping systems.

On June 13, 1995, the Second Amendment was approved. This adjusted County requirements related to road access issues and park planning and development. The changes included approval of the Landscape Master Plan, approval of the project report designating the use of Valencia Avenue as the sole access road to and from the Olinda Alpha Landfill, and approval of the General Development Plan with revisions to incorporate interim park planning.

On August 19, 1997, the Third Amendment was approved which updated the MOU in accord with Final EIR No. 550 that designated Valencia Avenue as the Olinda Alpha Landfill access route and deleting all references to the Tonner Canyon alternative. The Third Amendment also included the following: City and County responsibilities for access road design, implementation, and construction; authorized an increase in landfill daily tonnage limit to 7,000 tons per day; and specified City and County responsibilities for park and recreation facilities planning and development.

On June 29, 1999, the Fourth Amendment was approved which updated the MOU to address the accumulation of solid waste following landfill closures on any of the six scheduled County holidays. The amendment allowed the following: the landfill to remain open one additional hour in the evening following a scheduled holiday or an emergency, to increase daily tonnage to 10,000 tons per day for one working day following a scheduled holiday or emergency and allowed the City Manager to extend these accommodations on a day to day basis, upon the request of the County.

FIFTH Amendment To The MOU Between the County and the City of Brea

On February 29 and March 20, 2000, the City of Brea submitted letters to IWMD requesting early release of the $3.9 million payment referenced in the Third Amendment. The request for an early release of funds is being made because the value of land for the Sports Park Facility has increased. According to the City, the value of land has nearly doubled since the Third Amendment was signed in 1997. The City has made an offer on the land, established a final price, and anticipates closing escrow within six months. The advance of $3.9 million is required to fund the land acquisition costs. Additionally, the City's land purchase action and advance funding request are made to avoid any additional increase in land value due to imminent development of available land in the immediate area of the Sports Park Facility site.

The Fifth Amendment has been negotiated with the City in a cooperative effort to update the MOU based on changed conditions reported in the City's letters to IWMD dated February 29 and March 20, 2000. The MOU, as revised, modifies the Funding Allocation Procedure and Schedule.

The MOU as revised by the Fifth Amendment, serves to acknowledge the City and the County's agreement to:

Landfill Park

A. Authorize the advance of $3.9 million by the County to the City for Sports Park Facilities property acquisition prior to the January 1, 2001.

FIFTH AMENDMENT

TO MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF BREA AND THE COUNTY OG ORANGE REGARDING THE OLINDA ALPHA LANDFILL

The FIFTH AMENDMENT is made and entered into this_____ day of _____ 2000, by and between the County of Orange, hereinafter referred to as "COUNTY", and the City of Brea, hereinafter referred to as "CITY", and is made to the Memorandum of Understanding (MOU) between the parties dated March 10, 1992 and amended on April 6, 1993, November 29, 1994, June 13, 1995, August 19, 1997, and June 29, 1999 hereinafter collectively referred to as the MOU.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. Landfill Park – Funding Allocation Procedure and Schedule

   The Landfill Park Section, is amended by deleting Paragraph F.1.a in its entirety and substituting the following:

   Paragraph F.1.a. (1)
   County agrees to allocate funds in the amount of $3.9 million for land acquisition, whereon permanent park and recreation facilities are to be constructed. These permanent park and recreational facilities will be planned, designed, acquired, and constructed by the City. The County will allocate funds for the land acquisition provided the following funding allocation procedures have been followed:

   Funding Allocation Procedure
   (A) County will pay to the City allocation specified below within 30 days of receipt of City certification.

   Funding Allocation Schedule
   1. FY 1999-2000 Property Acquisition - $3.9 Million

   Funds not spend as allocated in FY 1999-2000 for land acquisition may be reallocated for planning and construction of the Sports Park project. Facilities

   The County may, at any time, conduct an audit of the City's specified Sports Park accounts and expenditures. Facilities If City's project expenditures are not in accordance with the certified schedule, City and County will meet and confer to agree on a revised expenditure schedule. City agrees to refund County payments if these funds are used for any activity other than planning, design, acquisition, and construction of Sports Park Facilities.

IN WITNESS WHEREOF, the parties hereto have executed this FIFTH AMENDMENT to the Memorandum of Understanding on the dates opposite their respective signatures:

Date: _____ By: _____
Chairman, Board of Supervisors John Sibley

SIGNED AND CERTIFIED THAT A COPY OF THIS FOURTH AMENDMENT HAS BEEN DELIVERED TO THE CHAIRMAN OF THE BOARD

Date: _____ By: _____
Darlene J. Bloom
Clerk of the Board of Supervisors of Orange County, California

CITY OF BREA

Date: _____ By: _____
Mayor, City of Brea

APPROVED AS TO FORM
Laurence M. Watson
County Counsel

By: _____

Date: _____

ANNOTATED AGREETMENT

04/09/99

ANNOTATED AGREEMENT

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE CITY OF BREA
AND
THE COUNTY OF ORANGE
REGARDING THE OLINDA-OLINDA ALPHA LANDFILL

THIS MEMORANDUM OF UNDERSTANDING is entered into on this 10th day of March, 1992 between the City of Brea ("City") and the County Of Orange ("County"), through their respective legislative bodies. The purpose of this Memorandum of Understanding (MOU) regarding the County's proposed expansion of the Olinda/Olinda Alpha is to establish duties the procedures regarding the continued operation of the Olinda/Olinda landfill and other matters of mutual concern. The City and the County hereby agree that no expansion of the Olinda/Olinda Alpha landfill shall occur until applicable provisions of this MOU are implemented as follows:

A. Public Health and Safety

The potential danger of a landfill operation to public health and safety shall be minimized. Proper operation and monitoring shall be enforced. The following conditions are provided to achieve an environmentally safe operation.

1. Adherence to State Standards:
The Olinda/Olinda Alpha site will be operated in conformity with State requirements for a Class III landfill. Strict adherence to all applicable State standards is the legal responsibility of the landfill operating entity.

2. Surface and Groundwater Quality

   a. Desiltation basins, surface water quality sampling, hazardous and toxic materials management procedures will be established to reduce nonpoint source pollution discharges to "the maximum extent practicable". Applicable "Best Management Practices" for the Olinda/Olinda Alpha landfill shall be implemented at the proposed site.

   b. The appropriate Surface and Groundwater Hydrology and Water Quality Mitigation Measures per the NOCLATS EIR-523 shall be followed, as outlined in Attachment No. 1.

   c. The County shall meet all National Pollutant Discharge Elimination System standards.

   d. The County will submit a Groundwater Monitoring and Remediation Plan to the Regional Water Quality Control Board by July 1992. Upon their approval of the plan, the County will prepare plans and specifications for an appropriate leachate collection and disposal system. ~~The system should be in operation by March 1993~~. **Amendment #1, Paragraph A.2.d. – 4/6/93.** ~~*The system should be in operation by July 1994.*~~

   Amendment #2, Paragraph A.2.d. 11/29/94 (struck out "last sentence of Paragraph A.2d in its entirety and substituting") *The interim system should be in operation by July 1994. The permanent leachate disposal and collection system should be in operation by June 1995.*

3. Methane Collection, Migration and Control Systems

Such activities shall be conducted under South Coast Air Quality Management District (SCAQMD) jurisdiction per Rule 1150.1 and per the regulations contained in the applicable Chapters and Sections of the California Code of Regulations (CCR), Title 14 and Title 23.

4. Hazardous Waste Exclusion Plan

a. The County will continue its load check program to prevent the disposal of hazardous material.

b. Any hazardous material found will be either properly stored and/or removed and properly disposed of.

c. County holds City harmless regarding hazardous materials cleanup to the extent permissible by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

B. Operating Procedures

In addition to meeting State standards, adherence to the following standards, even where they go above and beyond State standards, is a condition for landfill operation.

1. Operating Hours

~~The operating entity will limit landfill access to the hours of 6:00 AM to 4:00 PM Monday through Saturday.~~ **Amendment #4, Paragraph 1 – 4/23//99** *Operating hours shall be limited to 6:00 a.m. to 4:00 p.m. Monday through Saturday. However, operating hours shall be extended one additional hour to 5:00 p.m. for one working day following New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas Day and for one working day following emergencies requiring landfill shutdown.*

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

2. Litter Control

a. The County shall require covers on all trash hauling vehicles.

b. The County shall control on-site windblown debris according to the latest acceptable landfill methods.

c. The County shall routinely clean-up debris from the access road.

~~d. The County shall establish a litter clean-up program for the following roadways.~~

~~The Tonner Canyon landfill access road from the landfill entrance to the 57 Freeway and any other City approved routes to and from the landfill.~~

Amendment #3, Paragraph B.2.d. – 8/5/97 (replace with) *The County shall establish a litter clean-up program for the Valencia Avenue landfill access road and any other City approved routes to and from the landfill.*

3. Odor and Dust Control

   a. The County will apply daily cover to the working face at Olinda/Olinda Alpha using appropriate cover material.

   b. Grading areas and the access roads shall be watered daily, or as necessary to control dust, except when raining. Dust limits shall comply with SCAQMD standards.

   c. Special operating procedures shall be established for Santa Ana wind and wet weather conditions.

4. Landscaping

   a. County will develop an operation plan which will minimize the visual impact of the existing landfill as well as the proposed landfill expansion.

   b. To further minimize the visual impact of the landfill, the County will obtain the City's approval of landscape and irrigation plans for the existing landfill and proposed expansion.

   ~~c. The County will submit landscape and irrigation plans as part of such plans for Approval by the appropriate State agencies by September, 1992.~~
   Amendment #1, Paragraph B.4.c. – 4/6/93. ~~*The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB) by June 1994.*~~

   Amendment #2, Paragraph B.4.c. – 11/29/94 (struck out Paragraph B,4,c) *The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB).*

   ~~d. Plans will be implemented 90 days after State approval.~~
   Amendment #1, Paragraph B.4.d. – 4/6/93. ~~*The County will implement landscape and irrigation plans, as approved by the CIWMB, by July 1996.*~~

   Amendment #2, Paragraph B.4.d. – 11/29/94 (struck out Paragraph B.4.d.) *The County will continue to implement landscape and irrigation plans, as approved by the CIWMB.*

5. Closure - Post Closure

   a. When the Olinda/Olinda Alpha landfill site is to close it shall be done in conformance with the State standards in effect at the time of closure.

   b. The County will seek the City's input regarding Closure and Post Closure plan prior to submitting such pans to the appropriate agencies for approval.

6. Borrow Site

   a. The County will not utilize off-site borrow sites "A" or "B", the Beta parcel, or any property within the proposed or existing Chino Hills State Park. The County may accept other off-site cover material which may become available.

   b. The County shall aggressively advocate with appropriate State agencies the use of alternative cover such as shredded green waste.

c. To minimize environmental damage, the County may use alternative cover once approved by the State.

C. Access

~~1. The County will provide an access road to the landfill entrance via a route mutually agreed upon by City and County.~~

Amendment #3, Paragraph C.1. – 8/5/97 *Valencia Avenue is the designated landfill access road for the Olinda Alpha Landfill.*

~~2. This access road will be designed and landscaped by the County. Road and landscape design plans must be mutually agreed upon by County and City.~~

Amendment #3, Paragraph C.2 – 8/5/97 *The County will design and construct Valencia Avenue as a four lane divided ultimate-width Primary Arterial Highway from Birch Street to Lambert Road and as a four lane undivided interim-width roadway within existing right of way westerly of centerline and ultimate one half width right of way easterly of centerline from Lambert Road to the northern most Olinda Heights access road.*

~~3. If Tonner Canyon is used as an access road, a bridge over Valencia Avenue will be included as part of that project.~~

Amendment #3, Paragraph C.3. – 8/5/97 *The County will begin design on Valencia Avenue widening by July 1997 and advertise for construction on or before March 1998 with construction to be completed by October 1999 unless otherwise mutually agreed by City Manager and County Director of IWMD.*

~~4. Valencia Avenue, upon City approval, may be used for landfill traffic entering or exiting the Olinda/Olinda Alpha site.~~

Amendment #3, Paragraph C.4. – 8/5/97. *With respect to Valencia Avenue widening, the City's only responsibility shall be within the median. The City shall design and install all landscaping, irrigation, and appurtenant facilities at no cost to the County. The County shall be responsible for installing PVC sleeves under the street pavement for future installation of irrigation lines by City. The locations shall be determined by the City upon review of the County's final design.*

~~5. The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda/Olinda Alpha facility. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary the routes lie.~~

Amendment #3, restated as Paragraph C.5. – 8/5/97 *The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda Alpha Landfill. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary routes lie.*

~~6. If Tonner Canyon is used as an access road, the Tonner Canyon interchange shall be modified consistent with the improvements necessary to handle the landfill trip generation based on an average annual maximum of 6,000 tons per day. If an assessment district or similar funding mechanism is established to cover the cost of full interchange improvements, the County agrees to participate in funding these improvements, proportionate to its share of traffic demand. If during the expected lifetime of the landfill, traffic generation at the landfill increases, then the County will be responsible for full interchange or road improvements necessary to handle the increased demand.~~

Amendment #3, Paragraph C.6.- -8/5/97 *Expansion of the landfill as described in EIR # 523 may proceed effective July 1, 1997.*

~~7. No expansion of the landfill will occur until the access road and any landfill related interchange improvements are completed unless mutually agreed upon by the City and County.~~

Amendment #2, Paragraph C.7. ~~*7. No expansion of the landfill will occur until a Public Works construction contract has been put out to bid for the access road and any landfill related interchange improvements unless mutually agreed upon by the CITY and COUNTY. County agrees to award bid within 90 days after receipt of bids.*~~

Amendment #3, Paragraph C.6. (Amendment #3 struck out Paragraph C; it replaced Paragraphs C.1-C.6; did not replace Paragraph C.7)

D. Road Construction and Maintenance

~~1. The County will analyze existing structural sections and determine need for reconstruction of all designated landfill routes located in City or its sphere.~~

Amendment #3, Paragraph D.1 – 8/5/97. (struck out Paragraph D.1 and D.2) *The County's only responsibility for road construction and maintenance is as described in the Access Section, Paragraphs C1. through C6. Any obligations or other requirements in previous versions of this MOU are rescinded.*

~~2. The City and County may share the cost for road reconstruction as well as maintenance of such streets, proportionate to Olinda/Olinda Alpha landfill bound truck traffic. Such proportions will be determined via an axle count study to be conducted by County. Improvements made pursuant to this Agreement will not preclude or prejudice further improvements to such streets via Arterial Highway Funding Program.~~

E. Limitation on Volume

~~1. The Olinda/Olinda Alpha operation will be limited to a maximum annual average of six thousand (6,000) tons per day of municipal solid waste, excluding asphalt or soil.~~

Amendment #3, Paragraph E.1. – 8/5/97 *Effective August 1, 1997, the Olinda Alpha Landfill operation will be limited to a maximum annual average of seven thousand (7,000) tons per day of municipal solid waste, excluding asphalt and soil.*

~~2. Any waste discharge permit or the operating permit to be issued by the State of California shall specifically stipulate a maximum tonnage limitation of eight thousand (8,000) tons per day of municipal solid waste, excluding asphalt of soil.~~

Amendment #4, Paragraph E.2. – 4/23/99 *The maximum tonnage per day of municipal solid waste discharged shall be limited to 8,000 tons per day. Operator shall be allowed to increase daily tonnage limit to 10,000 tons per day for one working day following Thanksgiving, Christmas, New Year's Day, Memorial Day, Independence Day, and Labor Day and for one working day following emergencies requiring landfill shutdown.*

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

The annual average tonnage limit of 7,000 tons per day of municipal solid waste will not increase (Section E. Limitation on Volume, Paragraph 2).

3. Notwithstanding, the actual volume of municipal solid waste which may be accumulated

throughout the expansion of Olinda/Olinda Alpha, the landfill will cease acceptance of such waste no later than December 31, 2013. Any operating permit issued by the State which encompasses this date shall stipulate this limitation.

F. Landfill Park

1. ~~The County shall establish temporary park uses on non-operating areas of the Olinda/Olinda Alpha landfill so long as the safety of the public and landfill operations can be maintained. Any temporary park and recreation facilities shall require the City's concurrence. The development and maintenance of these temporary facilities shall be funded from the Waste Management Enterprise Fund as a mitigation measure.~~

Amendment #2, Paragraph F.1. – 8/5/97 ~~*Because of potential interference of landfill operations resulting from the development of temporary park facilities on non-operating areas of the Olinda/Olinda Alpha Landfill, the COUNTY agrees to the following permanent facilities in lieu of the development of temporary facilities. These permanent facilities will be developed by the COUNTY over the life of the landfill operation.*~~

Amendment #2, Paragraph F.1.a. -

~~a. Development of recreational facilities within the next two years based on the findings of the Master Plan for Parks and Recreation for the City of Brea. ($1.5 million)~~

Amendment #3, Paragraph F.1.a. 8/5/97

~~*a. Because of potential interference of landfill operations resulting from the development of temporary park and recreation facilities on non-operating areas of the Olinda Alpha Landfill, the County agrees to allocate funds for specified permanent facilities in lieu of the development of temporary facilities. These permanent park and recreation facilities will be planned, designed, acquired, and constructed by the City. The County will allocate funds for the park and recreation facilities listed below provided the following funding allocation procedures have been followed:*~~

~~*Funding Allocation Procedure*~~
~~*(A) City will provide an annual certification that it has adopted an expenditure schedule for a Sports Park project (as referenced in the 1997 Parks, Recreation, Human Services, and Open Space Master Plan – see page 37 of the Master Plan) and project accounts in its current fiscal year budget.*~~
~~*(B) City will provide to County an annual Sports Park expenditure report for each account within 60 days of the close of each fiscal year.*~~
~~*(C) County will pay to City allocation specified below within 30 days of receipt of City certification, but no sooner than January of the specified fiscal year:*~~

~~*County Funding Allocation Schedule*~~
~~*1. FY 1997-1998 Property Acquisition – $4 Million January 1998*~~
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(A) COUNTY will pay to the CITY allocation specified below within 30 days of receipt of CITY certification.

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~~b. Obtain additional property adjacent to, or within reasonable proximity to, the landfill and develop a park and recreational complex on approximately 18-20 acres of land within the next five years. ($3.9 million and land acquisition)~~

Amendment #3, Paragraph F.1.b. 8/5/97

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~~d. Develop and construct the trail through the Beta Parcel within two years as discussed in the conceptual General Development Plan. ($75,000)~~

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1997 dollars, as of June, 1997. Since the above referenced park and recreation improvements will be made in subsequent years, these funding amounts will be adjusted annually referencing the June consumer Price Index (Los Angeles, Anaheim, Riverside), All Urban Consumers Index [1997=100], published by the United States Department of Labor Statistics.

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Should the development of these facilities be infeasible due to technical, environmental, or legal concerns, the CITY and COUNTY agree to negotiate in good faith and implement other feasible and financially comparable alternatives.

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1. If, during the operation of the landfill expansion, unanticipated environmental impacts occur as a result of having the landfill within the City's boundary of sphere of influence, the City may file a claim with the County to offset such a burden. Any program proposal must demonstrate a reasonable relationship with the operation of the landfill.

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County shall not approve private development projects within the City's sphere of influence east of

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The County and City agree to collaboratively explore waste recovery and other alternatives to landfill operations, as well as possible joint ventures in sponsoring such facilities.

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2. If the ownership or operating responsibilities of the Olinda landfill are transferred or assigned to any other entity or agency, public or private, the County shall ensure that the obligations identified in this agreement will be reassigned so that the terms of this agreement shall continue to be met.

K. Arbitration

In the event that any dispute should arise between the parties hereto in regard to this MOU, the matter may be submitted to arbitration at the request of either the City or the County.

Said request shall state the matters the City/County considers to be in issue. The City/County shall, within thirty days, notify the requesting party, with its agreement with the listing of issues to be submitted to arbitration. Unless otherwise mutually agreed by the County Administrative Officer and the City Manager of Brea, an arbitrator shall be selected from a panel submitted by the American Arbitration Association and shall be selected from an uneven number listed, each party alternatively striking names from the list submitted until only the name of one arbitrator remains. The foregoing selection of an arbitrator shall be accomplished within 20 days of the submission of a list of arbitrators by AAA. In the event that the original request for arbitration is not answered within thirty days of delivery of notice, the party requesting arbitration may select an arbitrator from the list submitted by the American Arbitration Association and the decision of such an arbitrator shall be binding. If possible, the arbitrator shall conduct the first hearing within thirty days of selection and shall complete the arbitration and make an award in writing within thirty days of the close of an arbitration proceeding. The fees and expenses of the arbitrator, together with other expenses of the arbitration incurred or approved by the arbitrator, not including counsel fees or witness fees or other expenses incurred by a party for his own benefit, shall be borne equally by both parties.

L. **Amendments**

This memorandum of understanding may be amended at any time by mutual consent of the City and County.

Amendment #3 L. 8/5/97 (replaced title) **General Provisions**

Amendment #3. Paragraph, L.1. 8/5/97

1. *Any discretionary actions by County set forth in this MOU which are not covered by EIR No. 523 and EIR No. 550 are subject to future California Environmental Quality Act (CEQA) compliance.*

Amendment #3, Paragraph L.2. 8/5/97

2. *This MOU may be amended at any time by mutual consent of the City and County.*

All other terms and conditions of the agreement remain unchanged.

THE CITY OF BREA, a municipal corporation

Dated:_____ By:_____
Ron Isles, Mayor

Attest:

_____
City Clerk

Dated:_____ _____
Frank Benest, City Manager

Attest:

_____
City Clerk

"County": COUNTY OF ORANGE

Dated:_____ By:_____
Roger R. Stanton, Chairman
Orange County Board of Supervisors

Attest:

_____
Linda D. Ruth
Clerk of the Orange County
Board of Supervisors

ANNOTATED AGREEMENT

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE CITY OF BREA
AND
THE COUNTY OF ORANGE
REGARDING THE OLINDA-OLINDA ALPHA LANDFILL

THIS MEMORANDUM OF UNDERSTANDING is entered into on this 10th day of March, 1992 between the City of Brea ("City") and the County Of Orange ("County"), through their respective legislative bodies. The purpose of this Memorandum of Understanding (MOU) regarding the County's proposed expansion of the Olinda/Olinda Alpha is to establish duties the procedures regarding the continued operation of the Olinda/Olinda landfill and other matters of mutual concern. The City and the County hereby agree that no expansion of the Olinda/Olinda Alpha landfill shall occur until applicable provisions of this MOU are implemented as follows:

A. Public Health and Safety

The potential danger of a landfill operation to public health and safety shall be minimized. Proper operation and monitoring shall be enforced. The following conditions are provided to achieve an environmentally safe operation.

1. Adherence to State Standards:
The Olinda/Olinda Alpha site will be operated in conformity with State requirements for a Class III landfill. Strict adherence to all applicable State standards is the legal responsibility of the landfill operating entity.

2. Surface and Groundwater Quality

a. Desiltation basins, surface water quality sampling, hazardous and toxic materials management procedures will be established to reduce nonpoint source pollution discharges to "the maximum extent practicable". Applicable "Best Management Practices" for the Olinda/Olinda Alpha landfill shall be implemented at the proposed site.

b. The appropriate Surface and Groundwater Hydrology and Water Quality Mitigation Measures per the NOCLATS EIR-523 shall be followed, as outlined in Attachment No. 1.

c. The County shall meet all National Pollutant Discharge Elimination System standards.

d. The County will submit a Groundwater Monitoring and Remediation Plan to the Regional Water Quality Control Board by July 1992. Upon their approval of the plan, the County will prepare plans and specifications for an appropriate leachate collection and disposal system. ~~The system should be in operation by March 1993~~. **Amendment #1, Paragraph A.2.d. – 4/6/93.** ~~*The system should be in operation by July 1994.*~~

Amendment #2, Paragraph A.2.d. 11/29/94 (struck out "last sentence of Paragraph A,2d in its entirety and substituting") *The interim system should be in operation by July 1994. The permanent leachate disposal and collection system should be in operation by June 1995.*

3. Methane Collection, Migration and Control Systems

Such activities shall be conducted under South Coast Air Quality Management District (SCAQMD) jurisdiction per Rule 1150.1 and per the regulations contained in the applicable Chapters and Sections of the California Code of Regulations (CCR), Title 14 and Title 23.

4. Hazardous Waste Exclusion Plan

a. The County will continue its load check program to prevent the disposal of hazardous material.

b. Any hazardous material found will be either properly stored and/or removed and properly disposed of.

c. County holds City harmless regarding hazardous materials cleanup to the extent permissible by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

B. Operating Procedures

In addition to meeting State standards, adherence to the following standards, even where they go above and beyond State standards, is a condition for landfill operation.

1. Operating Hours

~~The operating entity will limit landfill access to the hours of 6:00 AM to 4:00 PM Monday through Saturday.~~ **Amendment #4, Paragraph 1 – 4/23//99** *Operating hours shall be limited to 6:00 a.m. to 4:00 p.m. Monday through Saturday. However, operating hours shall be extended one additional hour to 5:00 p.m. for one working day following New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving and Christmas Day and for one working day following emergencies requiring landfill shutdown.*

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

2. Litter Control

a. The County shall require covers on all trash hauling vehicles.

b. The County shall control on-site windblown debris according to the latest acceptable landfill methods.

c. The County shall routinely clean-up debris from the access road.

~~d. The County shall establish a litter clean-up program for the following roadways.~~

~~The Tonner Canyon landfill access road from the landfill entrance to the 57 Freeway and any other City approved routes to and from the landfill.~~

Amendment #3, Paragraph B.2.d. – 8/5/97 (replace with) *The County shall establish a litter clean-up program for the Valencia Avenue landfill access road and any other City approved routes to and from the landfill.*

3. Odor and Dust Control

   a. The County will apply daily cover to the working face at Olinda/Olinda Alpha using appropriate cover material.

   b. Grading areas and the access roads shall be watered daily, or as necessary to control dust, except when raining. Dust limits shall comply with SCAQMD standards.

   c. Special operating procedures shall be established for Santa Ana wind and wet weather conditions.

4. Landscaping

   a. County will develop an operation plan which will minimize the visual impact of the existing landfill as well as the proposed landfill expansion.

   b. To further minimize the visual impact of the landfill, the County will obtain the City's approval of landscape and irrigation plans for the existing landfill and proposed expansion.

   ~~c. The County will submit landscape and irrigation plans as part of such plans for Approval by the appropriate State agencies by September, 1992.~~
   Amendment #1, Paragraph B.4.c. – 4/6/93. ~~*The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB) by June 1994.*~~

   Amendment #2, Paragraph B.4.c. – 11/29/94 (struck out Paragraph B,4,c) *The County will submit landscape and irrigation plans as part of the Solid Waste Facility Permit (SWFP) application to the California Integrated Waste Management Board (CIWMB).*

   ~~d. Plans will be implemented 90 days after State approval.~~
   Amendment #1, Paragraph B.4.d. – 4/6/93. ~~*The County will implement landscape and irrigation plans, as approved by the CIWMB, by July 1996.*~~

   Amendment #2, Paragraph B.4.d. – 11/29/94 (struck out Paragraph B.4.d.) *The County will continue to implement landscape and irrigation plans, as approved by the CIWMB.*

5. Closure - Post Closure

   a. When the Olinda/Olinda Alpha landfill site is to close it shall be done in conformance with the State standards in effect at the time of closure.

   b. The County will seek the City's input regarding Closure and Post Closure plan prior to submitting such pans to the appropriate agencies for approval.

6. Borrow Site

   a. The County will not utilize off-site borrow sites "A" or "B", the Beta parcel, or any property within the proposed or existing Chino Hills State Park. The County may accept other off-site cover material which may become available.

   b. The County shall aggressively advocate with appropriate State agencies the use of alternative cover such as shredded green waste.

c. To minimize environmental damage, the County may use alternative cover once approved by the State.

C. Access

~~1. The County will provide an access road to the landfill entrance via a route mutually agreed upon by City and County.~~

Amendment #3, Paragraph C.1. – 8/5/97 *Valencia Avenue is the designated landfill access road for the Olinda Alpha Landfill.*

~~2. This access road will be designed and landscaped by the County. Road and landscape design plans must be mutually agreed upon by County and City.~~

Amendment #3, Paragraph C.2 – 8/5/97 *The County will design and construct Valencia Avenue as a four lane divided ultimate-width Primary Arterial Highway from Birch Street to Lambert Road and as a four lane undivided interim-width roadway within existing right of way westerly of centerline and ultimate one half width right of way easterly of centerline from Lambert Road to the northern most Olinda Heights access road.*

~~3. If Tonner Canyon is used as an access road, a bridge over Valencia Avenue will be included as part of that project.~~

Amendment #3, Paragraph C.3. – 8/5/97 *The County will begin design on Valencia Avenue widening by July 1997 and advertise for construction on or before March 1998 with construction to be completed by October 1999 unless otherwise mutually agreed by City Manager and County Director of IWMD.*

~~4. Valencia Avenue, upon City approval, may be used for landfill traffic entering or exiting the Olinda/Olinda Alpha site.~~

Amendment #3, Paragraph C.4. – 8/5/97. *With respect to Valencia Avenue widening, the City's only responsibility shall be within the median. The City shall design and install all landscaping, irrigation, and appurtenant facilities at no cost to the County. The County shall be responsible for installing PVC sleeves under the street pavement for future installation of irrigation lines by City. The locations shall be determined by the City upon review of the County's final design.*

~~5. The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda/Olinda Alpha facility. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary the routes lie.~~

Amendment #3, restated as Paragraph C.5. – 8/5/97 *The County shall prepare and have ready for distribution from day of the access road completion a statement of restrictions and conditions to be placed upon users of the Olinda Alpha Landfill. These are to be handed to each incoming hauler and shall include a map clearly designating the approved access routes. These routes will be designated as the only permissible landfill truck traffic routes by the jurisdiction in whose boundary routes lie.*

~~6. If Tonner Canyon is used as an access road, the Tonner Canyon interchange shall be modified consistent with the improvements necessary to handle the landfill trip generation based on an average annual maximum of 6,000 tons per day. If an assessment district or similar funding mechanism is established to cover the cost of full interchange improvements, the County agrees to participate in funding those improvements, proportionate to its share of traffic demand. If during the expected lifetime of the landfill, traffic generation at the landfill increases, then the County will be responsible for full interchange or road improvements necessary to handle the increased demand.~~

Amendment #3, Paragraph C.6.- -8/5/97 *Expansion of the landfill as described in EIR # 523 may proceed effective July 1, 1997.*

~~7. No expansion of the landfill will occur until the access road and any landfill related interchange improvements are completed unless mutually agreed upon by the City and County.~~

Amendment #2, Paragraph C.7. ~~*7. No expansion of the landfill will occur until a Public Works construction contract has been put out to bid for the access road and any landfill related interchange improvements unless mutually agreed upon by the CITY and COUNTY. County agrees to award bid within 90 days after receipt of bids.*~~

Amendment #3, Paragraph C.6. (Amendment #3 struck out Paragraph C; it replaced Paragraphs C.1-C.6; did not replace Paragraph C.7)

D. Road Construction and Maintenance

~~1. The County will analyze existing structural sections and determine need for reconstruction of all designated landfill routes located in City or its sphere.~~

Amendment #3, Paragraph D.1 – 8/5/97. (struck out Paragraph D.1 and D.2) *The County's only responsibility for road construction and maintenance is as described in the Access Section, Paragraphs C1. through C6. Any obligations or other requirements in previous versions of this MOU are rescinded.*

~~2. The City and County may share the cost for road reconstruction as well as maintenance of such streets, proportionate to Olinda/Olinda Alpha landfill bound truck traffic. Such proportions will be determined via an axle count study to be conducted by County. Improvements made pursuant to this Agreement will not preclude or prejudice further improvements to such streets via Arterial Highway Funding Program.~~

E. Limitation on Volume

~~1. The Olinda/Olinda Alpha operation will be limited to a maximum annual average of six thousand (6,000) tons per day of municipal solid waste, excluding asphalt or soil.~~

Amendment #3, Paragraph E.1. – 8/5/97 *Effective August 1, 1997, the Olinda Alpha Landfill operation will be limited to a maximum annual average of seven thousand (7,000) tons per day of municipal solid waste, excluding asphalt and soil.*

~~2. Any waste discharge permit or the operating permit to be issued by the State of California shall specifically stipulate a maximum tonnage limitation of eight thousand (8,000) tons per day of municipal solid waste, excluding asphalt of soil.~~

Amendment #4, Paragraph E.2. – 4/23/99 *The maximum tonnage per day of municipal solid waste discharged shall be limited to 8,000 tons per day. Operator shall be allowed to increase daily tonnage limit to 10,000 tons per day for one working day following Thanksgiving, Christmas, New Year's Day, Memorial Day, Independence Day, and Labor Day and for one working day following emergencies requiring landfill shutdown.*

The City Manager is authorized to extend this accommodation on a day to day basis upon the request of the Director, IWMD. The City Manager agrees he will not unreasonably withhold consent.

The annual average tonnage limit of 7,000 tons per day of municipal solid waste will not increase (Section E. Limitation on Volume, Paragraph 2).

3. Notwithstanding, the actual volume of municipal solid waste which may be accumulated

throughout the expansion of Olinda/Olinda Alpha, the landfill will cease acceptance of such waste no later than December 31, 2013. Any operating permit issued by the State which encompasses this date shall stipulate this limitation.

F. Landfill Park

1. ~~The County shall establish temporary park uses on non-operating areas of the Olinda/Olinda Alpha landfill so long as the safety of the public and landfill operations can be maintained. Any temporary park and recreation facilities shall require the City's concurrence. The development and maintenance of these temporary facilities shall be funded from the Waste Management Enterprise Fund as a mitigation measure.~~

Amendment #2, Paragraph F.1. – 8/5/97 ~~*Because of potential interference of landfill operations resulting from the development of temporary park facilities on non-operating areas of the Olinda/Olinda Alpha Landfill, the COUNTY agrees to the following permanent facilities in lieu of the development of temporary facilities. These permanent facilities will be developed by the COUNTY over the life of the landfill operation.*~~

Amendment #2, Paragraph F.1.a. -

~~a. Development of recreational facilities within the next two years based on the findings of the Master Plan for Parks and Recreation for the City of Brea. ($1.5 million)~~

Amendment #3, Paragraph F.1.a. 8/5/97

~~*a. Because of potential interference of landfill operations resulting from the development of temporary park and recreation facilities on non-operating areas of the Olinda Alpha Landfill, the County agrees to allocate funds for specified permanent facilities in lieu of the development of temporary facilities. These permanent park and recreation facilities will be planned, designed, acquired, and constructed by the City. The County will allocate funds for the park and recreation facilities listed below provided the following funding allocation procedures have been followed:*~~

~~*Funding Allocation Procedure*~~
~~*(A) City will provide an annual certification that it has adopted an expenditure schedule for a Sports Park project (as referenced in the 1997 Parks, Recreation, Human Services, and Open Space Master Plan – see page 37 of the Master Plan) and project accounts in its current fiscal year budget.*~~
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2. If the ownership or operating responsibilities of the Olinda landfill are transferred or assigned to any other entity or agency, public or private, the County shall ensure that the obligations identified in this agreement will be reassigned so that the terms of this agreement shall continue to be met.

K. Arbitration

In the event that any dispute should arise between the parties hereto in regard to this MOU, the matter may be submitted to arbitration at the request of either the City or the County.

Said request shall state the matters the City/County considers to be in issue. The City/County shall, within thirty days, notify the requesting party, with its agreement with the listing of issues to be submitted to arbitration. Unless otherwise mutually agreed by the County Administrative Officer and the City Manager of Brea, an arbitrator shall be selected from a panel submitted by the American Arbitration Association and shall be selected from an uneven number listed, each party alternatively striking names from the list submitted until only the name of one arbitrator remains. The foregoing selection of an arbitrator shall be accomplished within 20 days of the submission of a list of arbitrators by AAA. In the event that the original request for arbitration is not answered within thirty days of delivery of notice, the party requesting arbitration may select an arbitrator from the list submitted by the American Arbitration Association and the decision of such an arbitrator shall be binding. If possible, the arbitrator shall conduct the first hearing within thirty days of selection and shall complete the arbitration and make an award in writing within thirty days of the close of an arbitration proceeding. The fees and expenses of the arbitrator, together with other expenses of the arbitration incurred or approved by the arbitrator, not including counsel fees or witness fees or other expenses incurred by a party for his own benefit, shall be borne equally by both parties.

L. ~~Amendments~~

This memorandum of understanding may be amended at any time by mutual consent of the City and County.

Amendment #3 L. 8/5/97 (replaced title) **General Provisions**

Amendment #3. Paragraph, L.1. 8/5/97

1. *Any discretionary actions by County set forth in this MOU which are not covered by EIR No. 523 and EIR No. 550 are subject to future California Environmental Quality Act (CEQA) compliance.*

Amendment #3, Paragraph L.2. 8/5/97

2. *This MOU may be amended at any time by mutual consent of the City and County.*

All other terms and conditions of the agreement remain unchanged.

THE CITY OF BREA, a municipal corporation

Dated:_____

By:_____
Ron Isles, Mayor

Attest:

_____
City Clerk

Dated:_____

_____
Frank Benest, City Manager

Attest:

_____
City Clerk

"County": COUNTY OF ORANGE

Dated:_____

By:_____
Roger R. Stanton, Chairman
Orange County Board of Supervisors

Attest:

_____
Linda D. Ruth
Clerk of the Orange County
Board of Supervisors

APPENDIX F
TRAFFIC STUDY

TRAFFIC APPENDIX

APPENDIX F-1

EXISTING 2004
AVERGE DAILY TRAFFIC (ADT)
COUNTS

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-001

Location: Imperial Hwy. btwn. State College & SR-57 SB On-Off Ramps

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			26		33			12:00-12:15			433		354		
12:15-12:30			29		35			12:15-12:30			438		434		
12:30-12:45			28		30			12:30-12:45			426		446		
12:45-1:00			29	112	42	140	252	12:45-1:00			426	1723	433	1667	3390
1:00-1:15			54		54			1:00-1:15			420		433		
1:15-1:30			26		52			1:15-1:30			444		431		
1:30-1:45			26		33			1:30-1:45			423		402		
1:45-2:00			26	132	31	170	302	1:45-2:00			425	1712	414	1680	3392
2:00-2:15			19		47			2:00-2:15			490		418		
2:15-2:30			14		38			2:15-2:30			491		481		
2:30-2:45			19		43			2:30-2:45			409		409		
2:45-3:00			13	65	47	175	240	2:45-3:00			411	1801	435	1743	3544
3:00-3:15			16		65			3:00-3:15			415		420		
3:15-3:30			19		47			3:15-3:30			480		458		
3:30-3:45			21		53			3:30-3:45			493		481		
3:45-4:00			26	82	74	239	321	3:45-4:00			475	1863	420	1779	3642
4:00-4:15			47		90			4:00-4:15			407		456		
4:15-4:30			49		133			4:15-4:30			498		467		
4:30-4:45			53		111			4:30-4:45			538		454		
4:45-5:00			71	220	126	460	680	4:45-5:00			531	1974	487	1864	3838
5:00-5:15			112		187			5:00-5:15			521		438		
5:15-5:30			114		235			5:15-5:30			596		463		
5:30-5:45			133		235			5:30-5:45			528		451		
5:45-6:00			146	505	239	896	1401	5:45-6:00			569	2214	450	1802	4016
6:00-6:15			197		319			6:00-6:15			585		456		
6:15-6:30			193		365			6:15-6:30			580		455		
6:30-6:45			200		381			6:30-6:45			462		458		
6:45-7:00			202	792	403	1468	2260	6:45-7:00			442	2069	394	1763	3832
7:00-7:15			265		450			7:00-7:15			441		375		
7:15-7:30			268		478			7:15-7:30			456		340		
7:30-7:45			283		431			7:30-7:45			418		352		
7:45-8:00			217	1033	444	1803	2836	7:45-8:00			390	1705	296	1363	3068
8:00-8:15			336		469			8:00-8:15			302		276		
8:15-8:30			405		483			8:15-8:30			325		248		
8:30-8:45			478		460			8:30-8:45			344		231		
8:45-9:00			423	1642	426	1838	3480	8:45-9:00			312	1283	231	986	2269
9:00-9:15			416		388			9:00-9:15			284		215		
9:15-9:30			422		401			9:15-9:30			261		200		
9:30-9:45			427		468			9:30-9:45			251		193		
9:45-10:00			439	1704	438	1695	3399	9:45-10:00			222	1018	173	781	1799
10:00-10:15			329		412			10:00-10:15			186		163		
10:15-10:30			349		458			10:15-10:30			180		183		
10:30-10:45			364		438			10:30-10:45			183		130		
10:45-11:00			335	1377	425	1733	3110	10:45-11:00			163	712	123	599	1311
11:00-11:15			326		499			11:00-11:15			50		66		
11:15-11:30			326		486			11:15-11:30			46		87		
11:30-11:45			335		491			11:30-11:45			58		63		
11:45-12:00			385	1372	455	1931	3303	11:45-12:00			41	195	68	284	479
Total Vol.	0	0		9036		12548	21584		0	0		18269		16311	34580
Daily Totals									0	0		27305		28859	56164

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-002

Location: Imperial Hwy. btwn. SR-57 SB On-Ramp & NB On-Ramp

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			59		84			12:00-12:15			501		517		
12:15-12:30			61		79			12:15-12:30			516		529		
12:30-12:45			77		58			12:30-12:45			518		498		
12:45-1:00			52	249	79	300	549	12:45-1:00			485	2020	544	2088	4108
1:00-1:15			57		30			1:00-1:15			507		524		
1:15-1:30			51		33			1:15-1:30			487		555		
1:30-1:45			44		40			1:30-1:45			500		494		
1:45-2:00			53	205	35	138	343	1:45-2:00			493	1987	497	2070	4057
2:00-2:15			56		43			2:00-2:15			440		481		
2:15-2:30			44		37			2:15-2:30			472		489		
2:30-2:45			39		34			2:30-2:45			477		490		
2:45-3:00			33	172	30	144	316	2:45-3:00			463	1852	520	1980	3832
3:00-3:15			27		32			3:00-3:15			465		504		
3:15-3:30			27		36			3:15-3:30			543		506		
3:30-3:45			27		26			3:30-3:45			458		530		
3:45-4:00			24	105	40	134	239	3:45-4:00			506	1972	462	2002	3974
4:00-4:15			30		52			4:00-4:15			553		520		
4:15-4:30			28		32			4:15-4:30			525		542		
4:30-4:45			46		43			4:30-4:45			486		577		
4:45-5:00			51	155	60	187	342	4:45-5:00			567	2131	517	2156	4287
5:00-5:15			64		91			5:00-5:15			529		540		
5:15-5:30			69		96			5:15-5:30			586		597		
5:30-5:45			102		86			5:30-5:45			571		576		
5:45-6:00			111	346	135	408	754	5:45-6:00			587	2273	539	2252	4525
6:00-6:15			191		165			6:00-6:15			598		526		
6:15-6:30			181		251			6:15-6:30			621		540		
6:30-6:45			199		231			6:30-6:45			532		523		
6:45-7:00			257	828	235	882	1710	6:45-7:00			496	2247	502	2091	4338
7:00-7:15			343		253			7:00-7:15			444		472		
7:15-7:30			347		264			7:15-7:30			452		478		
7:30-7:45			351		238			7:30-7:45			400		472		
7:45-8:00			392	1433	312	1067	2500	7:45-8:00			389	1685	425	1847	3532
8:00-8:15			481		330			8:00-8:15			362		392		
8:15-8:30			494		378			8:15-8:30			344		342		
8:30-8:45			478		306			8:30-8:45			314		399		
8:45-9:00			366	1819	331	1345	3164	8:45-9:00			285	1305	323	1456	2761
9:00-9:15			405		440			9:00-9:15			301		305		
9:15-9:30			470		443			9:15-9:30			292		276		
9:30-9:45			407		390			9:30-9:45			298		273		
9:45-10:00			360	1642	420	1693	3335	9:45-10:00			246	1137	247	1101	2238
10:00-10:15			344		495			10:00-10:15			233		228		
10:15-10:30			322		519			10:15-10:30			193		190		
10:30-10:45			329		467			10:30-10:45			173		202		
10:45-11:00			288	1283	484	1965	3248	10:45-11:00			150	749	172	792	1541
11:00-11:15			298		456			11:00-11:15			121		173		
11:15-11:30			323		510			11:15-11:30			103		138		
11:30-11:45			329		517			11:30-11:45			117		135		
11:45-12:00			358	1308	581	2064	3372	11:45-12:00			82	423	109	555	978
Total Vol.	0	0		9545		10327	19872		0	0		19781		20390	40171
Daily Totals									0	0		29326		30717	60043

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-003

Location: Imperial Hwy. w/o Associated Rd.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			34		55			12:00-12:15			578		472		
12:15-12:30			40		40			12:15-12:30			590		450		
12:30-12:45			37		45			12:30-12:45			551		481		
12:45-1:00			34	145	34	174	319	12:45-1:00			604	2323	454	1857	4180
1:00-1:15			32		23			1:00-1:15			599		471		
1:15-1:30			25		29			1:15-1:30			603		476		
1:30-1:45			20		34			1:30-1:45			533		449		
1:45-2:00			22	99	29	115	214	1:45-2:00			550	2285	432	1828	4113
2:00-2:15			11		29			2:00-2:15			533		471		
2:15-2:30			22		29			2:15-2:30			567		422		
2:30-2:45			14		27			2:30-2:45			500		552		
2:45-3:00			8	55	23	108	163	2:45-3:00			575	2175	436	1881	4056
3:00-3:15			14		13			3:00-3:15			580		450		
3:15-3:30			12		29			3:15-3:30			580		430		
3:30-3:45			13		21			3:30-3:45			583		482		
3:45-4:00			10	49	21	84	133	3:45-4:00			577	2320	414	1776	4096
4:00-4:15			21		21			4:00-4:15			586		434		
4:15-4:30			26		22			4:15-4:30			585		518		
4:30-4:45			24		48			4:30-4:45			588		507		
4:45-5:00			31	102	46	137	239	4:45-5:00			617	2376	521	1980	4356
5:00-5:15			68		53			5:00-5:15			590		481		
5:15-5:30			62		64			5:15-5:30			695		500		
5:30-5:45			88		98			5:30-5:45			669		538		
5:45-6:00			152	370	136	351	721	5:45-6:00			678	2632	578	2097	4729
6:00-6:15			226		168			6:00-6:15			722		487		
6:15-6:30			200		184			6:15-6:30			595		523		
6:30-6:45			232		234			6:30-6:45			604		440		
6:45-7:00			272	930	287	873	1803	6:45-7:00			512	2433	431	1881	4314
7:00-7:15			438		321			7:00-7:15			520		332		
7:15-7:30			368		364			7:15-7:30			527		399		
7:30-7:45			419		399			7:30-7:45			469		330		
7:45-8:00			547	1772	424	1508	3280	7:45-8:00			459	1975	324	1385	3360
8:00-8:15			554		423			8:00-8:15			416		301		
8:15-8:30			516		472			8:15-8:30			403		298		
8:30-8:45			426		404			8:30-8:45			296		269		
8:45-9:00			358	1854	475	1774	3628	8:45-9:00			334	1449	248	1116	2565
9:00-9:15			428		350			9:00-9:15			291		223		
9:15-9:30			369		341			9:15-9:30			273		229		
9:30-9:45			342		339			9:30-9:45			257		199		
9:45-10:00			347	1486	346	1376	2862	9:45-10:00			226	1047	202	853	1900
10:00-10:15			314		359			10:00-10:15			216		154		
10:15-10:30			321		308			10:15-10:30			188		151		
10:30-10:45			329		323			10:30-10:45			152		163		
10:45-11:00			340	1304	353	1343	2647	10:45-11:00			154	710	116	584	1294
11:00-11:15			390		335			11:00-11:15			124		107		
11:15-11:30			386		377			11:15-11:30			103		75		
11:30-11:45			400		428			11:30-11:45			85		88		
11:45-12:00			394	1570	413	1553	3123	11:45-12:00			67	379	59	329	708
Total Vol.	0	0		9736		9396	19132		0	0		22104		17567	39671
Daily Totals									0	0		31840		26963	58803

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-004

Location: Imperial Hwy. w/o Kraemer Blvd.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			26		30			12:00-12:15			432		333		
12:15-12:30			30		26			12:15-12:30			440		379		
12:30-12:45			22		25			12:30-12:45			442		377		
12:45-1:00			20	98	22	103	201	12:45-1:00			420	1734	412	1501	3235
1:00-1:15			24		22			1:00-1:15			406		325		
1:15-1:30			16		17			1:15-1:30			400		402		
1:30-1:45			12		9			1:30-1:45			400		374		
1:45-2:00			12	64	9	57	121	1:45-2:00			356	1562	347	1448	3010
2:00-2:15			16		21			2:00-2:15			386		362		
2:15-2:30			14		13			2:15-2:30			414		406		
2:30-2:45			12		10			2:30-2:45			436		421		
2:45-3:00			16	58	16	60	118	2:45-3:00			400	1636	374	1563	3199
3:00-3:15			14		8			3:00-3:15			444		419		
3:15-3:30			12		8			3:15-3:30			382		365		
3:30-3:45			16		8			3:30-3:45			444		399		
3:45-4:00			18	60	14	38	98	3:45-4:00			398	1668	384	1567	3235
4:00-4:15			20		16			4:00-4:15			412		362		
4:15-4:30			26		24			4:15-4:30			394		361		
4:30-4:45			34		27			4:30-4:45			446		386		
4:45-5:00			52	132	49	116	248	4:45-5:00			420	1672	380	1489	3161
5:00-5:15			56		51			5:00-5:15			492		409		
5:15-5:30			80		78			5:15-5:30			432		375		
5:30-5:45			124		126			5:30-5:45			474		407		
5:45-6:00			166	426	193	448	874	5:45-6:00			400	1798	361	1552	3350
6:00-6:15			178		166			6:00-6:15			394		367		
6:15-6:30			256		248			6:15-6:30			352		315		
6:30-6:45			282		248			6:30-6:45			306		291		
6:45-7:00			366	1082	328	990	2072	6:45-7:00			304	1356	276	1249	2605
7:00-7:15			364		300			7:00-7:15			288		263		
7:15-7:30			404		355			7:15-7:30			256		262		
7:30-7:45			432		403			7:30-7:45			264		253		
7:45-8:00			528	1728	461	1519	3247	7:45-8:00			204	1012	186	964	1976
8:00-8:15			430		450			8:00-8:15			220		222		
8:15-8:30			448		366			8:15-8:30			160		152		
8:30-8:45			372		329			8:30-8:45			180		175		
8:45-9:00			342	1592	352	1497	3089	8:45-9:00			126	686	125	674	1360
9:00-9:15			320		309			9:00-9:15			144		160		
9:15-9:30			308		294			9:15-9:30			146		129		
9:30-9:45			328		292			9:30-9:45			126		137		
9:45-10:00			318	1274	293	1188	2462	9:45-10:00			118	534	129	555	1089
10:00-10:15			324		287			10:00-10:15			112		97		
10:15-10:30			344		312			10:15-10:30			84		71		
10:30-10:45			328		283			10:30-10:45			74		75		
10:45-11:00			358	1354	306	1188	2542	10:45-11:00			62	332	65	308	640
11:00-11:15			332		252			11:00-11:15			70		45		
11:15-11:30			388		334			11:15-11:30			44		45		
11:30-11:45			374		310			11:30-11:45			44		34		
11:45-12:00			402	1496	366	1262	2758	11:45-12:00			32	190	30	154	344
Total Vol.	0	0		9364		8466	17830		0	0		14180		13024	27204
Daily Totals									0	0		23544		21490	45034

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-005

Location: Imperial Hwy. w/o Valencia Ave.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			23		21			12:00-12:15			406		395		
12:15-12:30			21		27			12:15-12:30			422		392		
12:30-12:45			9		16			12:30-12:45			399		405		
12:45-1:00			16	69	13	77	146	12:45-1:00			372	1599	361	1553	3152
1:00-1:15			9		16			1:00-1:15			344		381		
1:15-1:30			13		12			1:15-1:30			328		346		
1:30-1:45			9		10			1:30-1:45			359		375		
1:45-2:00			5	36	9	47	83	1:45-2:00			350	1381	351	1453	2834
2:00-2:15			11		10			2:00-2:15			314		353		
2:15-2:30			4		7			2:15-2:30			334		344		
2:30-2:45			11		9			2:30-2:45			347		375		
2:45-3:00			11	37	9	35	72	2:45-3:00			314	1309	353	1425	2734
3:00-3:15			15		11			3:00-3:15			338		370		
3:15-3:30			25		17			3:15-3:30			375		386		
3:30-3:45			12		10			3:30-3:45			396		382		
3:45-4:00			8	60	7	45	105	3:45-4:00			399	1508	406	1544	3052
4:00-4:15			22		20			4:00-4:15			363		382		
4:15-4:30			24		24			4:15-4:30			372		403		
4:30-4:45			35		30			4:30-4:45			429		447		
4:45-5:00			48	129	45	119	248	4:45-5:00			408	1572	437	1669	3241
5:00-5:15			75		56			5:00-5:15			391		431		
5:15-5:30			71		61			5:15-5:30			372		442		
5:30-5:45			130		126			5:30-5:45			402		445		
5:45-6:00			165	441	160	403	844	5:45-6:00			363	1528	415	1733	3261
6:00-6:15			175		161			6:00-6:15			352		373		
6:15-6:30			249		231			6:15-6:30			360		360		
6:30-6:45			329		284			6:30-6:45			313		326		
6:45-7:00			424	1177	376	1052	2229	6:45-7:00			256	1281	297	1356	2637
7:00-7:15			449		373			7:00-7:15			251		276		
7:15-7:30			453		413			7:15-7:30			197		231		
7:30-7:45			491		420			7:30-7:45			192		222		
7:45-8:00			562	1955	493	1699	3654	7:45-8:00			164	804	186	915	1719
8:00-8:15			552		465			8:00-8:15			173		186		
8:15-8:30			536		451			8:15-8:30			153		164		
8:30-8:45			483		406			8:30-8:45			172		184		
8:45-9:00			407	1978	382	1704	3682	8:45-9:00			136	634	150	684	1318
9:00-9:15			362		342			9:00-9:15			111		124		
9:15-9:30			313		321			9:15-9:30			145		145		
9:30-9:45			317		304			9:30-9:45			91		101		
9:45-10:00			379	1371	345	1312	2683	9:45-10:00			84	431	93	463	894
10:00-10:15			300		287			10:00-10:15			85		90		
10:15-10:30			296		291			10:15-10:30			50		62		
10:30-10:45			275		307			10:30-10:45			53		59		
10:45-11:00			293	1164	294	1179	2343	10:45-11:00			37	225	51	262	487
11:00-11:15			318		345			11:00-11:15			37		49		
11:15-11:30			392		374			11:15-11:30			36		37		
11:30-11:45			379		368			11:30-11:45			21		29		
11:45-12:00			346	1435	368	1455	2890	11:45-12:00			17	111	19	134	245
Total Vol.	0	0		9852		9127	18979		0	0		12383		13191	25574
Daily Totals									0	0		22235		22318	44553

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-006

Location: Imperial Hwy. e/o Valencia Ave.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			27		22			12:00-12:15			299		330		
12:15-12:30			20		24			12:15-12:30			372		339		
12:30-12:45			9		15			12:30-12:45			333		330		
12:45-1:00			12	68	10	71	139	12:45-1:00			350	1354	318	1317	2671
1:00-1:15			8		16			1:00-1:15			291		299		
1:15-1:30			16		12			1:15-1:30			286		290		
1:30-1:45			8		9			1:30-1:45			308		315		
1:45-2:00			7	39	8	45	84	1:45-2:00			292	1177	284	1188	2365
2:00-2:15			10		8			2:00-2:15			269		288		
2:15-2:30			5		8			2:15-2:30			281		281		
2:30-2:45			10		6			2:30-2:45			295		313		
2:45-3:00			7	32	6	28	60	2:45-3:00			301	1146	330	1212	2358
3:00-3:15			7		8			3:00-3:15			291		318		
3:15-3:30			19		14			3:15-3:30			336		324		
3:30-3:45			12		9			3:30-3:45			379		363		
3:45-4:00			9	47	6	37	84	3:45-4:00			310	1316	339	1344	2660
4:00-4:15			22		20			4:00-4:15			333		342		
4:15-4:30			23		21			4:15-4:30			356		392		
4:30-4:45			29		28			4:30-4:45			390		393		
4:45-5:00			43	117	40	109	226	4:45-5:00			389	1468	424	1551	3019
5:00-5:15			68		47			5:00-5:15			368		421		
5:15-5:30			74		56			5:15-5:30			376		428		
5:30-5:45			116		102			5:30-5:45			377		422		
5:45-6:00			137	395	108	313	708	5:45-6:00			371	1492	402	1673	3165
6:00-6:15			157		120			6:00-6:15			331		352		
6:15-6:30			194		170			6:15-6:30			323		341		
6:30-6:45			298		237			6:30-6:45			279		305		
6:45-7:00			393	1042	321	848	1890	6:45-7:00			217	1150	276	1274	2424
7:00-7:15			367		300			7:00-7:15			242		259		
7:15-7:30			476		359			7:15-7:30			166		204		
7:30-7:45			434		357			7:30-7:45			184		197		
7:45-8:00			543	1820	440	1456	3276	7:45-8:00			152	744	179	839	1583
8:00-8:15			484		385			8:00-8:15			164		176		
8:15-8:30			473		391			8:15-8:30			132		151		
8:30-8:45			411		314			8:30-8:45			154		163		
8:45-9:00			370	1738	313	1403	3141	8:45-9:00			121	571	146	636	1207
9:00-9:15			279		249			9:00-9:15			109		126		
9:15-9:30			274		240			9:15-9:30			133		139		
9:30-9:45			259		235			9:30-9:45			94		93		
9:45-10:00			302	1114	254	978	2092	9:45-10:00			90	426	91	449	875
10:00-10:15			197		239			10:00-10:15			66		78		
10:15-10:30			230		241			10:15-10:30			50		62		
10:30-10:45			209		220			10:30-10:45			45		52		
10:45-11:00			207	843	233	933	1776	10:45-11:00			34	195	47	239	434
11:00-11:15			223		266			11:00-11:15			31		43		
11:15-11:30			271		292			11:15-11:30			35		36		
11:30-11:45			243		272			11:30-11:45			22		27		
11:45-12:00			246	983	308	1138	2121	11:45-12:00			14	102	16	122	224
Total Vol.	0	0		8238		7359	15597		0	0		11141		11844	22985
Daily Totals									0	0		19379		19203	38582

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-007

Location: Valencia Ave. n/o Imperial Hwy.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	7		2					12:00-12:15	121		123				
12:15-12:30	6		4					12:15-12:30	129		122				
12:30-12:45	4		1					12:30-12:45	138		144				
12:45-1:00	3	20	5	12			32	12:45-1:00	103	491	138	527			1018
1:00-1:15	0		1					1:00-1:15	147		117				
1:15-1:30	3		3					1:15-1:30	115		120				
1:30-1:45	0		0					1:30-1:45	120		116				
1:45-2:00	0	3	1	5			8	1:45-2:00	89	471	97	450			921
2:00-2:15	2		0					2:00-2:15	110		121				
2:15-2:30	0		2					2:15-2:30	102		125				
2:30-2:45	0		4					2:30-2:45	142		131				
2:45-3:00	1	3	1	7			10	2:45-3:00	98	452	125	502			954
3:00-3:15	13		3					3:00-3:15	116		107				
3:15-3:30	2		0					3:15-3:30	103		124				
3:30-3:45	5		3					3:30-3:45	124		115				
3:45-4:00	2	22	5	11			33	3:45-4:00	95	438	140	486			924
4:00-4:15	1		2					4:00-4:15	165		141				
4:15-4:30	1		3					4:15-4:30	103		125				
4:30-4:45	8		5					4:30-4:45	145		131				
4:45-5:00	6	16	13	23			39	4:45-5:00	111	524	122	519			1043
5:00-5:15	5		9					5:00-5:15	155		167				
5:15-5:30	23		14					5:15-5:30	104		161				
5:30-5:45	31		25					5:30-5:45	115		161				
5:45-6:00	63	122	67	115			237	5:45-6:00	103	477	136	625			1102
6:00-6:15	59		70					6:00-6:15	102		113				
6:15-6:30	89		73					6:15-6:30	72		97				
6:30-6:45	94		86					6:30-6:45	47		89				
6:45-7:00	113	355	129	358			713	6:45-7:00	37	258	47	346			604
7:00-7:15	124		88					7:00-7:15	43		55				
7:15-7:30	118		103					7:15-7:30	29		30				
7:30-7:45	115		144					7:30-7:45	38		43				
7:45-8:00	150	507	135	470			977	7:45-8:00	26	136	25	153			289
8:00-8:15	145		119					8:00-8:15	32		32				
8:15-8:30	150		112					8:15-8:30	22		30				
8:30-8:45	123		88					8:30-8:45	11		18				
8:45-9:00	120	538	93	412			950	8:45-9:00	18	83	12	92			175
9:00-9:15	105		81					9:00-9:15	9		23				
9:15-9:30	75		92					9:15-9:30	8		14				
9:30-9:45	93		57					9:30-9:45	11		10				
9:45-10:00	117	390	88	318			708	9:45-10:00	11	39	9	56			95
10:00-10:15	46		40					10:00-10:15	8		9				
10:15-10:30	64		44					10:15-10:30	5		4				
10:30-10:45	74		39					10:30-10:45	8		12				
10:45-11:00	74	258	35	158			416	10:45-11:00	12	33	6	31			64
11:00-11:15	69		35					11:00-11:15	10		7				
11:15-11:30	78		34					11:15-11:30	5		6				
11:30-11:45	74		40					11:30-11:45	4		3				
11:45-12:00	65	286	46	155			441	11:45-12:00	4	23	4	20			43
Total Vol.		2520		2044	0	0	4564			3425		3807	0	0	7232
Daily Totals										5945		5851	0	0	11796

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-008

Location: Valencia Ave. n/o Rose Dr./Birch St.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	6		17					12:00-12:15	110		116				
12:15-12:30	3		6					12:15-12:30	114		106				
12:30-12:45	3		10					12:30-12:45	124		138				
12:45-1:00	1	13	5	38			51	12:45-1:00	96	444	137	497			941
1:00-1:15	4		4					1:00-1:15	99		142				
1:15-1:30	4		5					1:15-1:30	114		151				
1:30-1:45	0		4					1:30-1:45	119		150				
1:45-2:00	1	9	6	19			28	1:45-2:00	128	460	122	565			1025
2:00-2:15	1		3					2:00-2:15	91		145				
2:15-2:30	2		3					2:15-2:30	100		169				
2:30-2:45	1		4					2:30-2:45	115		209				
2:45-3:00	3	7	2	12			19	2:45-3:00	129	435	198	721			1156
3:00-3:15	4		1					3:00-3:15	134		244				
3:15-3:30	5		3					3:15-3:30	119		240				
3:30-3:45	4		5					3:30-3:45	95		268				
3:45-4:00	0	13	0	9			22	3:45-4:00	118	466	285	1037			1503
4:00-4:15	4		3					4:00-4:15	100		296				
4:15-4:30	4		3					4:15-4:30	82		289				
4:30-4:45	21		7					4:30-4:45	90		319				
4:45-5:00	18	47	4	17			64	4:45-5:00	102	374	329	1233			1607
5:00-5:15	25		12					5:00-5:15	76		320				
5:15-5:30	47		9					5:15-5:30	93		318				
5:30-5:45	109		13					5:30-5:45	87		295				
5:45-6:00	158	339	39	73			412	5:45-6:00	81	337	272	1205			1542
6:00-6:15	170		64					6:00-6:15	77		260				
6:15-6:30	245		59					6:15-6:30	54		229				
6:30-6:45	233		76					6:30-6:45	56		187				
6:45-7:00	258	906	81	280			1186	6:45-7:00	61	248	175	851			1099
7:00-7:15	292		100					7:00-7:15	58		126				
7:15-7:30	294		129					7:15-7:30	45		102				
7:30-7:45	311		132					7:30-7:45	45		101				
7:45-8:00	336	1233	127	488			1721	7:45-8:00	26	174	85	414			588
8:00-8:15	291		109					8:00-8:15	25		79				
8:15-8:30	353		128					8:15-8:30	42		71				
8:30-8:45	235		102					8:30-8:45	29		74				
8:45-9:00	223	1102	105	444			1546	8:45-9:00	18	114	77	301			415
9:00-9:15	167		104					9:00-9:15	25		38				
9:15-9:30	175		88					9:15-9:30	28		59				
9:30-9:45	141		120					9:30-9:45	26		42				
9:45-10:00	132	615	94	406			1021	9:45-10:00	19	98	44	183			281
10:00-10:15	123		87					10:00-10:15	23		29				
10:15-10:30	96		101					10:15-10:30	20		27				
10:30-10:45	128		95					10:30-10:45	14		23				
10:45-11:00	93	440	125	408			848	10:45-11:00	11	68	22	101			169
11:00-11:15	129		115					11:00-11:15	8		17				
11:15-11:30	133		162					11:15-11:30	14		13				
11:30-11:45	113		133					11:30-11:45	12		10				
11:45-12:00	132	507	123	533			1040	11:45-12:00	9	43	4	44			87
Total Vol.		5231		2727	0	0	7958			3261		7152	0	0	10413
aily Totals										8492		9879	0	0	18371

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-009

Location: Valencia Ave. n/o Lambert Rd./Carbon Canyon Rd.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	4		2					12:00-12:15	58		47				
12:15-12:30	1		3					12:15-12:30	44		40				
12:30-12:45	0		3					12:30-12:45	57		58				
12:45-1:00	0	5	0	8			13	12:45-1:00	44	203	50	195			398
1:00-1:15	0		3					1:00-1:15	51		54				
1:15-1:30	1		1					1:15-1:30	51		51				
1:30-1:45	1		1					1:30-1:45	64		62				
1:45-2:00	4	6	1	6			12	1:45-2:00	60	226	42	209			435
2:00-2:15	1		1					2:00-2:15	54		45				
2:15-2:30	0		1					2:15-2:30	44		63				
2:30-2:45	0		1					2:30-2:45	55		53				
2:45-3:00	4	5	0	3			8	2:45-3:00	67	220	54	215			435
3:00-3:15	1		1					3:00-3:15	49		64				
3:15-3:30	1		1					3:15-3:30	58		54				
3:30-3:45	4		1					3:30-3:45	54		51				
3:45-4:00	0	6	1	4			10	3:45-4:00	57	218	40	209			427
4:00-4:15	4		1					4:00-4:15	44		36				
4:15-4:30	6		2					4:15-4:30	19		25				
4:30-4:45	4		2					4:30-4:45	25		24				
4:45-5:00	1	15	3	8			23	4:45-5:00	30	118	33	118			236
5:00-5:15	20		7					5:00-5:15	28		42				
5:15-5:30	14		7					5:15-5:30	24		47				
5:30-5:45	14		3					5:30-5:45	14		37				
5:45-6:00	26	74	13	30			104	5:45-6:00	29	95	43	169			264
6:00-6:15	33		23					6:00-6:15	23		40				
6:15-6:30	34		25					6:15-6:30	17		37				
6:30-6:45	38		24					6:30-6:45	17		30				
6:45-7:00	42	147	36	108			255	6:45-7:00	25	82	30	137			219
7:00-7:15	36		46					7:00-7:15	19		29				
7:15-7:30	47		50					7:15-7:30	15		25				
7:30-7:45	50		41					7:30-7:45	12		32				
7:45-8:00	45	178	52	189			367	7:45-8:00	11	57	16	102			159
8:00-8:15	44		46					8:00-8:15	11		21				
8:15-8:30	40		52					8:15-8:30	10		24				
8:30-8:45	34		48					8:30-8:45	10		19				
8:45-9:00	37	155	42	188			343	8:45-9:00	14	45	16	80			125
9:00-9:15	69		43					9:00-9:15	4		16				
9:15-9:30	57		46					9:15-9:30	6		18				
9:30-9:45	69		55					9:30-9:45	10		16				
9:45-10:00	66	261	39	183			444	9:45-10:00	2	22	10	60			82
10:00-10:15	74		42					10:00-10:15	6		16				
10:15-10:30	41		51					10:15-10:30	8		14				
10:30-10:45	52		41					10:30-10:45	5		10				
10:45-11:00	43	210	63	197			407	10:45-11:00	2	21	9	49			70
11:00-11:15	47		67					11:00-11:15	1		7				
11:15-11:30	69		70					11:15-11:30	3		7				
11:30-11:45	58		59					11:30-11:45	2		4				
11:45-12:00	61	235	47	243			478	11:45-12:00	1	7	3	21			28
Total Vol.		1297		1167	0	0	2464			1314		1564	0	0	2878
Daily Totals										2611		2731	0	0	5342

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea

Project #: 04-1042-010

Location: Valencia Ave. s/o Lambert Rd./Carbon Canyon Rd.

Client Ref #:

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	17		6					12:00-12:15	102		119				
12:15-12:30	6		3					12:15-12:30	95		110				
12:30-12:45	10		3					12:30-12:45	117		133				
12:45-1:00	5	38	1	13			51	12:45-1:00	129	443	96	458			901
1:00-1:15	4		4					1:00-1:15	128		102				
1:15-1:30	5		4					1:15-1:30	142		110				
1:30-1:45	4		0					1:30-1:45	133		126				
1:45-2:00	6	19	1	9			28	1:45-2:00	112	515	124	462			977
2:00-2:15	3		1					2:00-2:15	136		95				
2:15-2:30	3		2					2:15-2:30	153		105				
2:30-2:45	4		1					2:30-2:45	197		114				
2:45-3:00	2	12	3	7			19	2:45-3:00	192	678	127	441			1119
3:00-3:15	1		4					3:00-3:15	213		134				
3:15-3:30	3		5					3:15-3:30	246		118				
3:30-3:45	5		4					3:30-3:45	261		90				
3:45-4:00	0	9	0	13			22	3:45-4:00	268	988	121	463			1451
4:00-4:15	3		4					4:00-4:15	290		94				
4:15-4:30	3		4					4:15-4:30	284		83				
4:30-4:45	6		20					4:30-4:45	324		85				
4:45-5:00	4	16	17	45			61	4:45-5:00	310	1208	102	364			1572
5:00-5:15	11		25					5:00-5:15	327		80				
5:15-5:30	10		49					5:15-5:30	313		92				
5:30-5:45	14		106					5:30-5:45	302		84				
5:45-6:00	36	71	163	343			414	5:45-6:00	261	1203	79	335			1538
6:00-6:15	62		168					6:00-6:15	257		80				
6:15-6:30	53		247					6:15-6:30	224		53				
6:30-6:45	61		230					6:30-6:45	193		55				
6:45-7:00	72	248	267	912			1160	6:45-7:00	171	845	63	251			1096
7:00-7:15	90		288					7:00-7:15	133		58				
7:15-7:30	98		292					7:15-7:30	98		42				
7:30-7:45	80		333					7:30-7:45	102		45				
7:45-8:00	88	356	333	1246			1602	7:45-8:00	83	416	27	172			588
8:00-8:15	87		293					8:00-8:15	80		24				
8:15-8:30	68		357					8:15-8:30	72		43				
8:30-8:45	89		235					8:30-8:45	71		27				
8:45-9:00	61	305	219	1104			1409	8:45-9:00	81	304	18	112			416
9:00-9:15	98		158					9:00-9:15	38		25				
9:15-9:30	88		130					9:15-9:30	60		28				
9:30-9:45	98		115					9:30-9:45	43		27				
9:45-10:00	92	376	120	523			899	9:45-10:00	44	185	19	99			284
10:00-10:15	76		99					10:00-10:15	30		22				
10:15-10:30	92		101					10:15-10:30	25		20				
10:30-10:45	83		101					10:30-10:45	25		13				
10:45-11:00	105	356	98	399			755	10:45-11:00	21	101	11	66			167
11:00-11:15	108		108					11:00-11:15	15		8				
11:15-11:30	103		105					11:15-11:30	14		13				
11:30-11:45	96		102					11:30-11:45	10		12				
11:45-12:00	97	404	112	427			831	11:45-12:00	4	43	9	42			85
Total Vol.		2210		5041	0	0	7251			6929		3265	0	0	10194
Daily Totals										9139		8306	0	0	17445

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-011

Location: Valencia Ave. n/o Santa Fe Ave.

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	0		0					12:00-12:15	44		65				
12:15-12:30	0		1					12:15-12:30	37		49				
12:30-12:45	1		0					12:30-12:45	41		37				
12:45-1:00	0	1	0	1			2	12:45-1:00	65	187	50	201			388
1:00-1:15	1		0					1:00-1:15	54		36				
1:15-1:30	1		0					1:15-1:30	66		37				
1:30-1:45	1		0					1:30-1:45	57		37				
1:45-2:00	0	3	0	0			3	1:45-2:00	48	225	63	173			398
2:00-2:15	0		0					2:00-2:15	43		42				
2:15-2:30	0		0					2:15-2:30	45		48				
2:30-2:45	0		0					2:30-2:45	55		32				
2:45-3:00	2	2	1	1			3	2:45-3:00	52	195	37	159			354
3:00-3:15	0		0					3:00-3:15	54		38				
3:15-3:30	1		0					3:15-3:30	41		39				
3:30-3:45	1		0					3:30-3:45	54		42				
3:45-4:00	0	2	0	0			2	3:45-4:00	29	178	48	167			345
4:00-4:15	0		0					4:00-4:15	20		37				
4:15-4:30	4		3					4:15-4:30	12		46				
4:30-4:45	3		1					4:30-4:45	4		9				
4:45-5:00	3	10	1	5			15	4:45-5:00	4	40	3	95			135
5:00-5:15	3		0					5:00-5:15	7		5				
5:15-5:30	6		1					5:15-5:30	7		16				
5:30-5:45	15		0					5:30-5:45	6		6				
5:45-6:00	7	31	1	2			33	5:45-6:00	4	24	2	29			53
6:00-6:15	22		4					6:00-6:15	9		2				
6:15-6:30	41		1					6:15-6:30	4		0				
6:30-6:45	36		28					6:30-6:45	7		2				
6:45-7:00	39	138	20	53			191	6:45-7:00	2	22	4	8			30
7:00-7:15	48		23					7:00-7:15	3		4				
7:15-7:30	39		23					7:15-7:30	5		1				
7:30-7:45	60		47					7:30-7:45	3		1				
7:45-8:00	41	188	41	134			322	7:45-8:00	6	17	3	9			26
8:00-8:15	54		34					8:00-8:15	1		1				
8:15-8:30	41		44					8:15-8:30	1		0				
8:30-8:45	42		50					8:30-8:45	5		0				
8:45-9:00	59	196	23	151			347	8:45-9:00	3	10	0	1			11
9:00-9:15	56		33					9:00-9:15	2		2				
9:15-9:30	52		42					9:15-9:30	0		0				
9:30-9:45	57		47					9:30-9:45	1		0				
9:45-10:00	68	233	50	172			405	9:45-10:00	0	3	0	2			5
10:00-10:15	56		36					10:00-10:15	2		0				
10:15-10:30	37		57					10:15-10:30	2		2				
10:30-10:45	56		47					10:30-10:45	1		1				
10:45-11:00	53	202	42	182			384	10:45-11:00	2	7	2	5			12
11:00-11:15	74		43					11:00-11:15	3		0				
11:15-11:30	67		38					11:15-11:30	1		0				
11:30-11:45	84		51					11:30-11:45	1		0				
11:45-12:00	69	294	42	174			468	11:45-12:00	1	6	0	0			6
Total Vol.		1300		875	0	0	2175			914		849	0	0	1763
aily Totals										2214		1724	0	0	3938

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea Project #: 04-1042-012

Location: Valencia Ave. s/o Olinda/Alphia Landfill (n/o dwy.)

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
12:00-12:15	0		0					12:00-12:15	0		134				
12:15-12:30	0		0					12:15-12:30	14		104				
12:30-12:45	0		0					12:30-12:45	0		90				
12:45-1:00	0	0	0	0				12:45-1:00	2	16	121	449			465
1:00-1:15	0		0					1:00-1:15	2		94				
1:15-1:30	0		0					1:15-1:30	0		139				
1:30-1:45	0		0					1:30-1:45	0		121				
1:45-2:00	0	0	0	0				1:45-2:00	5	7	150	504			511
2:00-2:15	0		0					2:00-2:15	0		114				
2:15-2:30	0		0					2:15-2:30	0		105				
2:30-2:45	0		0					2:30-2:45	135		56				
2:45-3:00	0	0	0	0				2:45-3:00	121	256	49	324			580
3:00-3:15	0		0					3:00-3:15	153		54				
3:15-3:30	2		0					3:15-3:30	163		66				
3:30-3:45	1		0					3:30-3:45	134		55				
3:45-4:00	0	3	0	0			3	3:45-4:00	101	551	50	225			776
4:00-4:15	0		0					4:00-4:15	88		50				
4:15-4:30	0		0					4:15-4:30	58		53				
4:30-4:45	0		0					4:30-4:45	7		8				
4:45-5:00	5	5	0	0			5	4:45-5:00	0	153	0	111			264
5:00-5:15	6		0					5:00-5:15	0		1				
5:15-5:30	18		1					5:15-5:30	16		17				
5:30-5:45	20		0					5:30-5:45	0		0				
5:45-6:00	15	59	1	2			61	5:45-6:00	1	17	1	19			36
6:00-6:15	48		12					6:00-6:15	0		0				
6:15-6:30	96		17					6:15-6:30	0		0				
6:30-6:45	79		50					6:30-6:45	0		0				
6:45-7:00	81	304	36	115			419	6:45-7:00	0	0	0	0			
7:00-7:15	126		40					7:00-7:15	0		0				
7:15-7:30	113		35					7:15-7:30	0		0				
7:30-7:45	175		68					7:30-7:45	0		0				
7:45-8:00	118	532	54	197			729	7:45-8:00	0	0	0	0			
8:00-8:15	207		78					8:00-8:15	0		0				
8:15-8:30	81		70					8:15-8:30	0		0				
8:30-8:45	62		78					8:30-8:45	0		0				
8:45-9:00	112	462	58	284			746	8:45-9:00	0	0	0	0			
9:00-9:15	109		66					9:00-9:15	0		0				
9:15-9:30	101		68					9:15-9:30	0		0				
9:30-9:45	125		104					9:30-9:45	0		0				
9:45-10:00	120	455	107	345			800	9:45-10:00	0	0	0	0			
10:00-10:15	79		97					10:00-10:15	0		0				
10:15-10:30	20		129					10:15-10:30	0		0				
10:30-10:45	14		109					10:30-10:45	0		0				
10:45-11:00	5	118	106	441			559	10:45-11:00	0	0	0	0			
11:00-11:15	15		150					11:00-11:15	0		0				
11:15-11:30	3		124					11:15-11:30	0		0				
11:30-11:45	12		179					11:30-11:45	0		0				
11:45-12:00	2	32	148	601			633	11:45-12:00	0	0	0	0			
Total Vol.		1970		1985	0	0	3955			1000		1632	0	0	2632
aily Totals										2970		3617	0	0	6587

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-013

Location: Lambert Rd. w/o Valencia Ave.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			5		16			12:00-12:15			109		104		
12:15-12:30			10		8			12:15-12:30			116		132		
12:30-12:45			12		10			12:30-12:45			97		119		
12:45-1:00			4	31	8	42	73	12:45-1:00			99	421	150	505	926
1:00-1:15			8		8			1:00-1:15			108		157		
1:15-1:30			5		5			1:15-1:30			89		134		
1:30-1:45			2		3			1:30-1:45			104		152		
1:45-2:00			5	20	5	21	41	1:45-2:00			110	411	157	600	1011
2:00-2:15			2		3			2:00-2:15			118		163		
2:15-2:30			13		5			2:15-2:30			115		201		
2:30-2:45			2		2			2:30-2:45			130		234		
2:45-3:00			6	23	5	15	38	2:45-3:00			152	515	234	832	1347
3:00-3:15			6		3			3:00-3:15			116		280		
3:15-3:30			11		5			3:15-3:30			124		272		
3:30-3:45			11		2			3:30-3:45			131		299		
3:45-4:00			5	33	2	12	45	3:45-4:00			142	513	328	1179	1692
4:00-4:15			14		3			4:00-4:15			130		287		
4:15-4:30			23		2			4:15-4:30			150		272		
4:30-4:45			44		5			4:30-4:45			162		271		
4:45-5:00			47	128	5	15	143	4:45-5:00			150	592	305	1135	1727
5:00-5:15			76		2			5:00-5:15			170		294		
5:15-5:30			92		10			5:15-5:30			164		262		
5:30-5:45			154		5			5:30-5:45			163		229		
5:45-6:00			203	525	10	27	552	5:45-6:00			130	627	277	1062	1689
6:00-6:15			218		7			6:00-6:15			141		249		
6:15-6:30			228		20			6:15-6:30			122		148		
6:30-6:45			245		30			6:30-6:45			100		135		
6:45-7:00			258	949	18	75	1024	6:45-7:00			90	453	130	662	1115
7:00-7:15			247		23			7:00-7:15			75		127		
7:15-7:30			232		30			7:15-7:30			51		107		
7:30-7:45			277		38			7:30-7:45			63		99		
7:45-8:00			276	1032	64	155	1187	7:45-8:00			51	240	91	424	664
8:00-8:15			227		48			8:00-8:15			58		73		
8:15-8:30			237		53			8:15-8:30			50		79		
8:30-8:45			192		45			8:30-8:45			41		56		
8:45-9:00			220	876	63	209	1085	8:45-9:00			38	187	48	256	443
9:00-9:15			149		66			9:00-9:15			36		53		
9:15-9:30			156		73			9:15-9:30			37		53		
9:30-9:45			132		64			9:30-9:45			40		45		
9:45-10:00			133	570	50	253	823	9:45-10:00			30	143	50	201	344
10:00-10:15			114		76			10:00-10:15			32		35		
10:15-10:30			117		68			10:15-10:30			21		38		
10:30-10:45			108		94			10:30-10:45			19		21		
10:45-11:00			137	476	76	314	790	10:45-11:00			20	92	23	117	209
11:00-11:15			109		97			11:00-11:15			16		31		
11:15-11:30			109		84			11:15-11:30			21		12		
11:30-11:45			109		102			11:30-11:45			10		8		
11:45-12:00			101	428	109	392	820	11:45-12:00			15	62	10	61	123
Total Vol.	0	0		5091		1530	6621		0	0		4256		7034	11290
Daily Totals									0	0		9347		8564	17911

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-014

Location: Carbon Canyon Rd. e/o Valencia Ave.

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			4		28			12:00-12:15			84		64		
12:15-12:30			6		13			12:15-12:30			107		50		
12:30-12:45			4		15			12:30-12:45			97		62		
12:45-1:00			1	15	12	68	83	12:45-1:00			113	401	57	233	634
1:00-1:15			5		9			1:00-1:15			125		64		
1:15-1:30			3		11			1:15-1:30			111		49		
1:30-1:45			1		9			1:30-1:45			126		53		
1:45-2:00			2	11	5	34	45	1:45-2:00			142	504	52	218	722
2:00-2:15			1		8			2:00-2:15			166		59		
2:15-2:30			2		10			2:15-2:30			210		57		
2:30-2:45			1		6			2:30-2:45			242		57		
2:45-3:00			5	9	4	28	37	2:45-3:00			267	885	73	246	1131
3:00-3:15			5		5			3:00-3:15			324		64		
3:15-3:30			11		5			3:15-3:30			364		58		
3:30-3:45			6		5			3:30-3:45			350		50		
3:45-4:00			4	26	6	21	47	3:45-4:00			404	1442	62	234	1676
4:00-4:15			12		7			4:00-4:15			410		54		
4:15-4:30			4		10			4:15-4:30			404		72		
4:30-4:45			4		30			4:30-4:45			394		50		
4:45-5:00			6	26	29	76	102	4:45-5:00			412	1620	59	235	1855
5:00-5:15			4		61			5:00-5:15			437		39		
5:15-5:30			6		60			5:15-5:30			399		54		
5:30-5:45			10		150			5:30-5:45			365		89		
5:45-6:00			14	34	195	466	500	5:45-6:00			312	1513	56	238	1751
6:00-6:15			18		261			6:00-6:15			278		43		
6:15-6:30			27		240			6:15-6:30			254		45		
6:30-6:45			44		267			6:30-6:45			225		67		
6:45-7:00			46	135	261	1029	1164	6:45-7:00			13	770	199	354	1124
7:00-7:15			51		362			7:00-7:15			196		24		
7:15-7:30			61		373			7:15-7:30			191		35		
7:30-7:45			77		411			7:30-7:45			157		20		
7:45-8:00			107	296	378	1524	1820	7:45-8:00			132	676	28	107	783
8:00-8:15			54		410			8:00-8:15			119		19		
8:15-8:30			64		307			8:15-8:30			115		23		
8:30-8:45			65		282			8:30-8:45			86		19		
8:45-9:00			70	253	301	1300	1553	8:45-9:00			85	405	20	81	486
9:00-9:15			56		110			9:00-9:15			83		18		
9:15-9:30			78		103			9:15-9:30			73		16		
9:30-9:45			61		104			9:30-9:45			46		11		
9:45-10:00			49	244	68	385	629	9:45-10:00			59	261	19	64	325
10:00-10:15			73		101			10:00-10:15			58		13		
10:15-10:30			76		78			10:15-10:30			39		18		
10:30-10:45			65		76			10:30-10:45			35		14		
10:45-11:00			86	300	90	345	645	10:45-11:00			35	167	11	56	223
11:00-11:15			46		124			11:00-11:15			29		11		
11:15-11:30			62		93			11:15-11:30			22		15		
11:30-11:45			59		127			11:30-11:45			26		5		
11:45-12:00			51	218	139	483	701	11:45-12:00			26	103	10	41	144
Total Vol.	0	0		1567		5759	7326		0	0		8747		2107	10854
aily Totals									0	0		10314		7866	18180

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-015

Location: Lambert Rd. e/o SR-57 NB On/Off Ramps

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			89		93			12:00-12:15			344		393		
12:15-12:30			64		100			12:15-12:30			326		411		
12:30-12:45			77		80			12:30-12:45			342		418		
12:45-1:00			74	304	72	345	649	12:45-1:00			333	1345	402	1624	2969
1:00-1:15			59		72			1:00-1:15			394		381		
1:15-1:30			57		67			1:15-1:30			359		410		
1:30-1:45			38		59			1:30-1:45			388		362		
1:45-2:00			49	203	51	249	452	1:45-2:00			406	1547	493	1646	3193
2:00-2:15			56		39			2:00-2:15			356		370		
2:15-2:30			33		43			2:15-2:30			415		389		
2:30-2:45			24		37			2:30-2:45			429		476		
2:45-3:00			21	134	28	147	281	2:45-3:00			453	1653	521	1756	3409
3:00-3:15			29		21			3:00-3:15			480		491		
3:15-3:30			19		20			3:15-3:30			398		453		
3:30-3:45			22		48			3:30-3:45			424		453		
3:45-4:00			18	88	34	123	211	3:45-4:00			462	1764	468	1865	3629
4:00-4:15			11		25			4:00-4:15			373		435		
4:15-4:30			13		24			4:15-4:30			444		453		
4:30-4:45			18		53			4:30-4:45			494		516		
4:45-5:00			24	66	59	161	227	4:45-5:00			419	1730	483	1887	3617
5:00-5:15			15		38			5:00-5:15			414		522		
5:15-5:30			34		58			5:15-5:30			438		435		
5:30-5:45			51		74			5:30-5:45			424		435		
5:45-6:00			68	168	93	263	431	5:45-6:00			432	1708	439	1831	3539
6:00-6:15			61		74			6:00-6:15			408		409		
6:15-6:30			62		94			6:15-6:30			374		429		
6:30-6:45			63		122			6:30-6:45			376		403		
6:45-7:00			72	258	139	429	687	6:45-7:00			328	1486	404	1645	3131
7:00-7:15			105		154			7:00-7:15			351		353		
7:15-7:30			118		164			7:15-7:30			307		320		
7:30-7:45			155		209			7:30-7:45			282		311		
7:45-8:00			188	566	250	777	1343	7:45-8:00			268	1208	267	1251	2459
8:00-8:15			185		242			8:00-8:15			231		229		
8:15-8:30			153		226			8:15-8:30			204		246		
8:30-8:45			196		290			8:30-8:45			207		218		
8:45-9:00			186	720	308	1066	1786	8:45-9:00			206	848	223	916	1764
9:00-9:15			205		288			9:00-9:15			221		210		
9:15-9:30			203		295			9:15-9:30			245		217		
9:30-9:45			229		308			9:30-9:45			194		217		
9:45-10:00			253	890	339	1230	2120	9:45-10:00			183	843	272	916	1759
10:00-10:15			251		288			10:00-10:15			204		250		
10:15-10:30			275		340			10:15-10:30			175		211		
10:30-10:45			276		315			10:30-10:45			141		210		
10:45-11:00			263	1065	322	1265	2330	10:45-11:00			134	654	190	861	1515
11:00-11:15			299		360			11:00-11:15			117		159		
11:15-11:30			294		344			11:15-11:30			103		131		
11:30-11:45			268		404			11:30-11:45			83		135		
11:45-12:00			353	1214	362	1470	2684	11:45-12:00			83	386	102	527	913
Total Vol.	0	0		5676		7525	13201		0	0		15172		16725	31897
Daily Totals									0	0		20848		24250	45098

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-016

Location: Lambert Rd. w/o SR-57 SB On/Off Ramps

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			94		93			12:00-12:15			363		336		
12:15-12:30			95		86			12:15-12:30			356		363		
12:30-12:45			77		95			12:30-12:45			353		376		
12:45-1:00			77	343	82	356	699	12:45-1:00			350	1422	388	1463	2885
1:00-1:15			86		68			1:00-1:15			334		383		
1:15-1:30			57		72			1:15-1:30			372		345		
1:30-1:45			60		67			1:30-1:45			373		381		
1:45-2:00			43	246	60	267	513	1:45-2:00			365	1444	346	1455	2899
2:00-2:15			55		47			2:00-2:15			399		444		
2:15-2:30			60		39			2:15-2:30			331		336		
2:30-2:45			37		41			2:30-2:45			405		357		
2:45-3:00			24	176	38	165	341	2:45-3:00			434	1569	452	1589	3158
3:00-3:15			26		29			3:00-3:15			494		512		
3:15-3:30			33		19			3:15-3:30			513		425		
3:30-3:45			21		23			3:30-3:45			375		398		
3:45-4:00			24	104	45	116	220	3:45-4:00			377	1759	429	1764	3523
4:00-4:15			18		33			4:00-4:15			424		436		
4:15-4:30			14		24			4:15-4:30			348		409		
4:30-4:45			12		29			4:30-4:45			462		419		
4:45-5:00			19	63	49	135	198	4:45-5:00			522	1756	491	1755	3511
5:00-5:15			26		61			5:00-5:15			427		410		
5:15-5:30			21		34			5:15-5:30			394		476		
5:30-5:45			35		57			5:30-5:45			439		381		
5:45-6:00			60	142	71	223	365	5:45-6:00			415	1675	408	1675	3350
6:00-6:15			74		89			6:00-6:15			409		411		
6:15-6:30			72		69			6:15-6:30			394		368		
6:30-6:45			66		89			6:30-6:45			359		394		
6:45-7:00			70	282	120	367	649	6:45-7:00			381	1543	361	1534	3077
7:00-7:15			78		143			7:00-7:15			337		376		
7:15-7:30			114		141			7:15-7:30			343		307		
7:30-7:45			128		156			7:30-7:45			315		306		
7:45-8:00			175	495	197	637	1132	7:45-8:00			287	1282	278	1267	2549
8:00-8:15			198		243			8:00-8:15			264		240		
8:15-8:30			206		212			8:15-8:30			256		222		
8:30-8:45			160		221			8:30-8:45			218		226		
8:45-9:00			211	775	267	943	1718	8:45-9:00			238	976	195	883	1859
9:00-9:15			220		284			9:00-9:15			233		205		
9:15-9:30			202		271			9:15-9:30			235		208		
9:30-9:45			223		275			9:30-9:45			258		183		
9:45-10:00			254	899	290	1120	2019	9:45-10:00			202	928	218	814	1742
10:00-10:15			278		306			10:00-10:15			196		244		
10:15-10:30			255		265			10:15-10:30			234		226		
10:30-10:45			287		304			10:30-10:45			195		202		
10:45-11:00			306	1126	291	1166	2292	10:45-11:00			147	772	197	869	1641
11:00-11:15			273		294			11:00-11:15			138		185		
11:15-11:30			300		332			11:15-11:30			142		149		
11:30-11:45			289		314			11:30-11:45			107		130		
11:45-12:00			315	1177	357	1297	2474	11:45-12:00			96	483	127	591	1074
Total Vol.	0	0		5828		6792	12620		0	0		15609		15659	31268
Daily Totals									0	0		21437		22451	43888

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea

Project #: 04-1042-017

Location: Rose Dr. e/o Valencia Ave.

Client Ref #:

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			14		11			12:00-12:15			99		120		
12:15-12:30			14		4			12:15-12:30			94		99		
12:30-12:45			7		12			12:30-12:45			117		101		
12:45-1:00			6	41	10	37	78	12:45-1:00			124	434	105	425	859
1:00-1:15			5		7			1:00-1:15			105		144		
1:15-1:30			3		8			1:15-1:30			83		117		
1:30-1:45			4		7			1:30-1:45			86		113		
1:45-2:00			3	15	5	27	42	1:45-2:00			96	370	126	500	870
2:00-2:15			0		2			2:00-2:15			102		108		
2:15-2:30			2		5			2:15-2:30			106		106		
2:30-2:45			1		2			2:30-2:45			103		113		
2:45-3:00			2	5	4	13	18	2:45-3:00			100	411	123	450	861
3:00-3:15			2		5			3:00-3:15			118		154		
3:15-3:30			1		2			3:15-3:30			129		157		
3:30-3:45			6		4			3:30-3:45			143		171		
3:45-4:00			2	11	1	12	23	3:45-4:00			145	535	192	674	1209
4:00-4:15			1		3			4:00-4:15			123		208		
4:15-4:30			2		0			4:15-4:30			162		202		
4:30-4:45			2		4			4:30-4:45			143		208		
4:45-5:00			3	8	4	11	19	4:45-5:00			150	578	210	828	1406
5:00-5:15			8		11			5:00-5:15			159		252		
5:15-5:30			14		10			5:15-5:30			196		213		
5:30-5:45			22		17			5:30-5:45			186		254		
5:45-6:00			44	88	22	60	148	5:45-6:00			181	722	277	996	1718
6:00-6:15			67		36			6:00-6:15			168		251		
6:15-6:30			83		49			6:15-6:30			184		226		
6:30-6:45			113		52			6:30-6:45			159		203		
6:45-7:00			140	403	90	227	630	6:45-7:00			127	638	190	870	1508
7:00-7:15			137		99			7:00-7:15			112		184		
7:15-7:30			137		141			7:15-7:30			109		162		
7:30-7:45			178		181			7:30-7:45			108		119		
7:45-8:00			179	631	209	630	1261	7:45-8:00			87	416	80	545	961
8:00-8:15			235		201			8:00-8:15			72		97		
8:15-8:30			205		186			8:15-8:30			66		60		
8:30-8:45			182		197			8:30-8:45			61		82		
8:45-9:00			184	806	206	790	1596	8:45-9:00			70	269	84	323	592
9:00-9:15			139		147			9:00-9:15			59		77		
9:15-9:30			132		128			9:15-9:30			42		64		
9:30-9:45			93		95			9:30-9:45			55		46		
9:45-10:00			96	460	114	484	944	9:45-10:00			41	197	42	229	426
10:00-10:15			99		92			10:00-10:15			42		42		
10:15-10:30			90		107			10:15-10:30			31		40		
10:30-10:45			71		96			10:30-10:45			28		34		
10:45-11:00			53	313	91	386	699	10:45-11:00			27	128	27	143	271
11:00-11:15			88		104			11:00-11:15			24		27		
11:15-11:30			62		88			11:15-11:30			18		22		
11:30-11:45			78		97			11:30-11:45			17		17		
11:45-12:00			90	318	109	398	716	11:45-12:00			18	77	8	74	151
Total Vol.	0	0		3099		3075	6174		0	0		4775		6057	10832
Daily Totals									0	0		7874		9132	17006

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Wednesday, January 07, 2004 City: Brea

Project #: 04-1042-018

Location: Birch St. w/o Valencia Ave.

Client Ref #:

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			3		6			12:00-12:15			80		76		
12:15-12:30			3		10			12:15-12:30			76		104		
12:30-12:45			3		9			12:30-12:45			73		105		
12:45-1:00			5	14	7	32	46	12:45-1:00			95	324	107	392	716
1:00-1:15			3		6			1:00-1:15			104		76		
1:15-1:30			2		3			1:15-1:30			84		84		
1:30-1:45			5		6			1:30-1:45			77		92		
1:45-2:00			1	11	1	16	27	1:45-2:00			92	357	85	337	694
2:00-2:15			1		0			2:00-2:15			72		102		
2:15-2:30			4		2			2:15-2:30			67		96		
2:30-2:45			3		2			2:30-2:45			82		104		
2:45-3:00			2	10	2	6	16	2:45-3:00			71	292	116	418	710
3:00-3:15			3		1			3:00-3:15			81		127		
3:15-3:30			1		1			3:15-3:30			80		127		
3:30-3:45			7		8			3:30-3:45			112		157		
3:45-4:00			0	11	1	11	22	3:45-4:00			94	367	136	547	914
4:00-4:15			4		0			4:00-4:15			119		165		
4:15-4:30			1		2			4:15-4:30			79		172		
4:30-4:45			3		0			4:30-4:45			107		168		
4:45-5:00			7	15	2	4	19	4:45-5:00			109	414	158	663	1077
5:00-5:15			12		4			5:00-5:15			123		186		
5:15-5:30			6		5			5:15-5:30			114		226		
5:30-5:45			12		18			5:30-5:45			168		216		
5:45-6:00			17	47	14	41	88	5:45-6:00			168	573	209	837	1410
6:00-6:15			37		17			6:00-6:15			144		197		
6:15-6:30			54		15			6:15-6:30			117		195		
6:30-6:45			47		35			6:30-6:45			96		154		
6:45-7:00			70	208	40	107	315	6:45-7:00			95	452	138	684	1136
7:00-7:15			100		51			7:00-7:15			69		126		
7:15-7:30			112		69			7:15-7:30			73		106		
7:30-7:45			134		105			7:30-7:45			53		93		
7:45-8:00			173	519	110	335	854	7:45-8:00			49	244	89	414	658
8:00-8:15			184		129			8:00-8:15			48		67		
8:15-8:30			169		135			8:15-8:30			39		67		
8:30-8:45			143		110			8:30-8:45			29		71		
8:45-9:00			142	638	89	463	1101	8:45-9:00			33	149	63	268	417
9:00-9:15			105		78			9:00-9:15			41		62		
9:15-9:30			98		63			9:15-9:30			21		52		
9:30-9:45			63		51			9:30-9:45			18		49		
9:45-10:00			77	343	74	266	609	9:45-10:00			19	99	40	203	302
10:00-10:15			72		75			10:00-10:15			21		28		
10:15-10:30			60		55			10:15-10:30			21		33		
10:30-10:45			74		48			10:30-10:45			6		25		
10:45-11:00			62	268	49	227	495	10:45-11:00			16	64	27	113	177
11:00-11:15			62		62			11:00-11:15			14		20		
11:15-11:30			67		55			11:15-11:30			6		11		
11:30-11:45			80		75			11:30-11:45			6		20		
11:45-12:00			69	278	83	275	553	11:45-12:00			3	29	10	61	90
Total Vol.	0	0		2362		1783	4145		0	0		3364		4937	8301
Daily Totals									0	0		5726		6720	12446

Average Daily Traffic Volumes

Prepared by: Southland Car Counters

Volumes for: Thursday, January 08, 2004 City: Brea Project #: 04-1042-019

Location: Birch St. w/o Associated Rd. (South Leg)

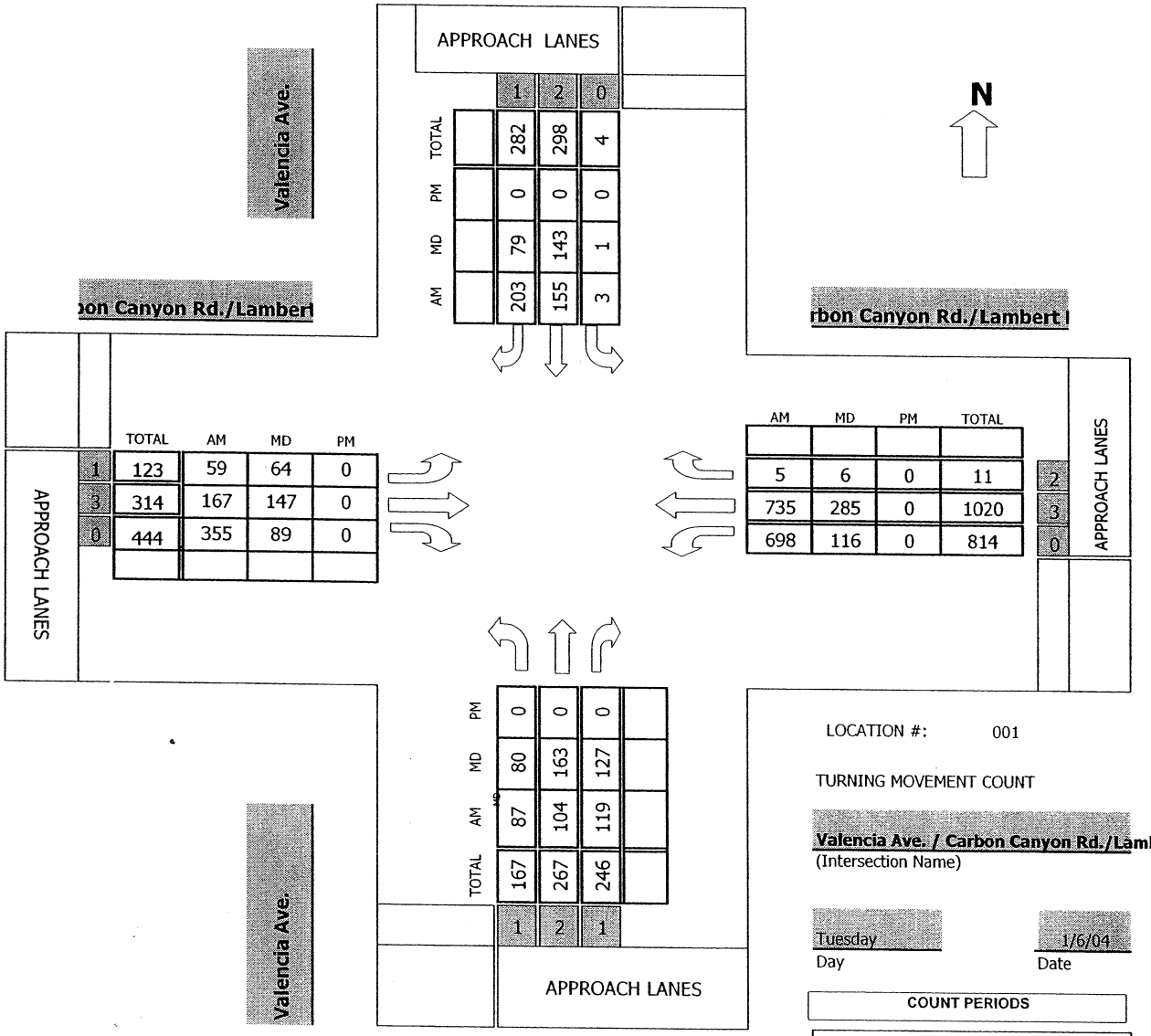
AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
12:00-12:15			18		15			12:00-12:15			105		116		
12:15-12:30			16		6			12:15-12:30			110		109		
12:30-12:45			23		16			12:30-12:45			109		120		
12:45-1:00			25	82	7	44	126	12:45-1:00			120	444	121	466	910
1:00-1:15			13		8			1:00-1:15			130		118		
1:15-1:30			11		3			1:15-1:30			131		109		
1:30-1:45			8		1			1:30-1:45			140		107		
1:45-2:00			6	38	5	17	55	1:45-2:00			151	552	137	471	1023
2:00-2:15			2		1			2:00-2:15			170		160		
2:15-2:30			3		3			2:15-2:30			201		162		
2:30-2:45			6		2			2:30-2:45			187		157		
2:45-3:00			7	18	3	9	27	2:45-3:00			211	769	152	631	1400
3:00-3:15			3		3			3:00-3:15			209		152		
3:15-3:30			4		2			3:15-3:30			204		246		
3:30-3:45			5		1			3:30-3:45			190		269		
3:45-4:00			3	15	5	11	26	3:45-4:00			188	791	215	882	1673
4:00-4:15			2		2			4:00-4:15			191		207		
4:15-4:30			7		2			4:15-4:30			193		279		
4:30-4:45			4		4			4:30-4:45			191		277		
4:45-5:00			7	20	4	12	32	4:45-5:00			227	802	265	1028	1830
5:00-5:15			15		6			5:00-5:15			207		242		
5:15-5:30			15		9			5:15-5:30			212		299		
5:30-5:45			20		13			5:30-5:45			259		309		
5:45-6:00			14	64	17	45	109	5:45-6:00			273	951	309	1159	2110
6:00-6:15			43		23			6:00-6:15			266		297		
6:15-6:30			51		53			6:15-6:30			264		254		
6:30-6:45			64		57			6:30-6:45			241		248		
6:45-7:00			76	234	54	187	421	6:45-7:00			218	989	196	995	1984
7:00-7:15			111		65			7:00-7:15			174		165		
7:15-7:30			219		109			7:15-7:30			187		167		
7:30-7:45			177		149			7:30-7:45			165		150		
7:45-8:00			196	703	178	501	1204	7:45-8:00			163	689	128	610	1299
8:00-8:15			244		185			8:00-8:15			141		105		
8:15-8:30			317		251			8:15-8:30			130		94		
8:30-8:45			279		271			8:30-8:45			118		82		
8:45-9:00			236	1076	209	916	1992	8:45-9:00			112	501	73	354	855
9:00-9:15			138		219			9:00-9:15			109		53		
9:15-9:30			124		131			9:15-9:30			114		74		
9:30-9:45			97		121			9:30-9:45			112		58		
9:45-10:00			81	440	90	561	1001	9:45-10:00			101	436	51	236	672
10:00-10:15			83		113			10:00-10:15			99		34		
10:15-10:30			89		125			10:15-10:30			82		48		
10:30-10:45			91		124			10:30-10:45			43		57		
10:45-11:00			115	378	94	456	834	10:45-11:00			53	277	29	168	445
11:00-11:15			111		99			11:00-11:15			37		13		
11:15-11:30			103		80			11:15-11:30			34		16		
11:30-11:45			123		110			11:30-11:45			24		16		
11:45-12:00			116	453	114	403	856	11:45-12:00			20	115	15	60	175
Total Vol.	0	0		3521		3162	6683		0	0		7316		7060	14376
Daily Totals									0	0		10837		10222	21059

APPENDIX F-2

EXISTING PEAK HOUR
TURNING MOVEMENT COUNTS

TMC SUMMARY OF Valencia Ave. / Carbon Canyon Rd./Lambert Rd.

Project #: 04-1041-001



LOCATION #: 001

TURNING MOVEMENT COUNT

Valencia Ave. / Carbon Canyon Rd./Lambert Rd.
(Intersection Name)

Tuesday — Day

1/6/04 — Date

COUNT PERIODS		
am	7:00 AM	9:00 AM
noon	11:00 AM	1:00 PM
pm	10:00 AM	12:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Carbon Canyon Rd./ Lambert Rd. DAY: TUESDAY PROJECT# 04-1041-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	18	26	23	1	33	29	15	25	53	203	183	0	609
7:15 AM	25	19	27	0	30	49	15	37	59	185	187	1	634
7:30 AM	30	29	23	0	39	55	8	41	76	171	176	1	649
7:45 AM	23	23	37	2	33	61	17	48	90	187	194	2	717
8:00 AM	17	34	31	0	40	42	16	51	96	170	165	1	663
8:15 AM	17	18	28	1	43	45	18	27	93	170	200	1	661
8:30 AM	31	34	33	0	36	43	12	34	77	134	166	1	601
8:45 AM	15	42	26	2	37	40	10	32	66	141	149	0	560
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 176	NT 225	NR 228	SL 6	ST 291	SR 364	EL 111	ET 295	ER 610	WL 1361	WT 1420	WR 7	TOTAL 5094

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	87	104	119	3	155	203	59	167	355	698	735	5	2690
PEAK HR. FACTOR:		0.934			0.940			0.891			0.939		0.938

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Carbon Canyon Rd./ Lambert Rd. DAY: TUESDAY PROJECT# 04-1041-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	0	1	3	0	2	3	0	
10:00 AM	13	31	19	0	39	23	15	31	15	41	80	1	308
10:15 AM	23	34	25	1	32	22	17	33	16	36	59	0	298
10:30 AM	20	36	27	1	47	18	10	28	24	33	78	1	323
10:45 AM	16	32	29	1	34	22	7	33	36	34	72	0	316
11:00 AM	13	39	26	0	36	22	13	32	29	22	59	1	292
11:15 AM	24	39	34	0	34	20	10	43	19	30	72	1	326
11:30 AM	19	39	32	0	38	22	22	29	22	33	84	1	341
11:45 AM	24	46	35	1	35	15	19	43	19	31	70	3	341
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 152	NT 296	NR 227	SL 4	ST 295	SR 164	EL 113	ET 272	ER 180	WL 260	WT 574	WR 8	TOTAL 2545

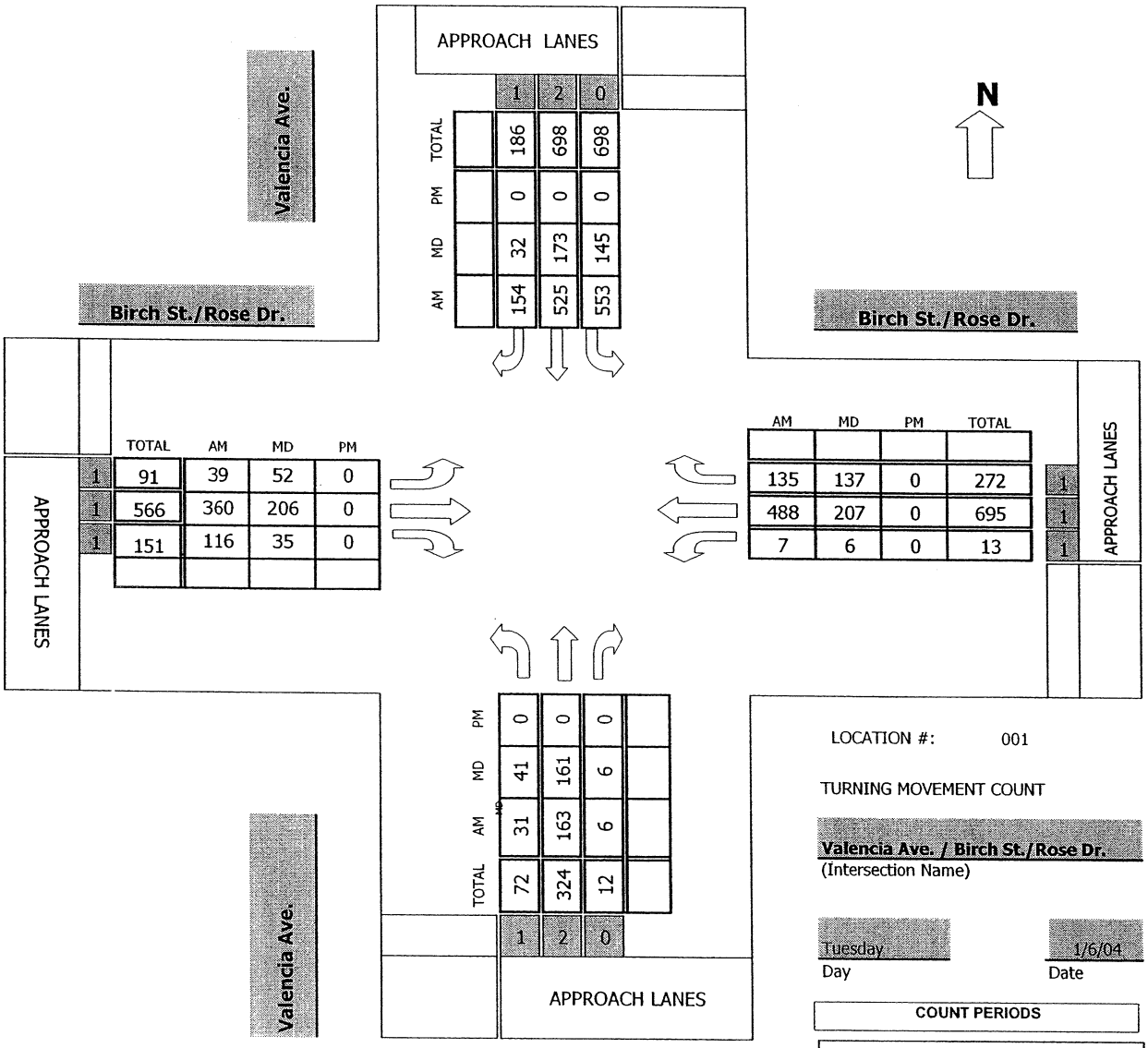
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	80	163	127	1	143	79	64	147	89	116	285	6	1300
PEAK HR. FACTOR:		0.881			0.929			0.926			0.862		0.953

CONTROL: Signalized

TMC SUMMARY OF Valencia Ave. / Birch St./Rose Dr.

Project #: 04-1041-002



LOCATION #: 001

TURNING MOVEMENT COUNT

Valencia Ave. / Birch St./Rose Dr.
(Intersection Name)

Tuesday — Day

1/6/04 — Date

COUNT PERIODS

am	7:00 AM	-	9:00 AM
noon	11:00 AM	-	1:00 PM
pm	10:00 AM	-	12:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Birch St./Rose Dr. DAY: TUESDAY PROJECT# 04-1041-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	6	35	1	136	101	32	3	42	12	1	73	24	466
7:15 AM	5	26	1	129	111	35	5	69	26	3	118	41	569
7:30 AM	8	34	0	114	126	42	12	91	25	2	113	38	605
7:45 AM	6	46	2	162	130	41	10	99	32	2	135	33	698
8:00 AM	8	44	4	136	136	40	13	86	31	2	138	29	667
8:15 AM	9	39	0	141	133	31	4	84	28	1	102	35	607
8:30 AM	9	43	1	116	105	19	10	80	13	5	116	44	561
8:45 AM	7	38	1	123	98	24	4	61	21	7	68	39	491
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 58	NT 305	NR 10	SL 1057	ST 940	SR 264	EL 61	ET 612	ER 188	WL 23	WT 863	WR 283	TOTAL 4664

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	31	163	6	553	525	154	39	360	116	7	488	135	2577
PEAK HR. FACTOR:		0.893			0.925			0.913			0.926		0.923

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Birch St./Rose Dr. DAY: TUESDAY PROJECT# 04-1041-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
10:00 AM	7	25	0	40	51	11	2	28	4	1	50	30	249
10:15 AM	7	37	2	32	48	7	9	40	11	0	46	34	273
10:30 AM	9	35	0	36	56	12	11	39	8	2	46	29	283
10:45 AM	4	33	0	44	44	12	9	43	7	1	43	34	274
11:00 AM	3	35	4	37	43	8	8	46	5	2	49	28	268
11:15 AM	6	41	1	40	35	6	10	55	8	0	59	46	307
11:30 AM	12	32	0	30	46	9	15	41	12	1	44	33	275
11:45 AM	20	53	1	38	49	9	19	64	10	3	55	30	351
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 68	NT 291	NR 8	SL 297	ST 372	SR 74	EL 83	ET 356	ER 65	WL 10	WT 392	WR 264	TOTAL 2280

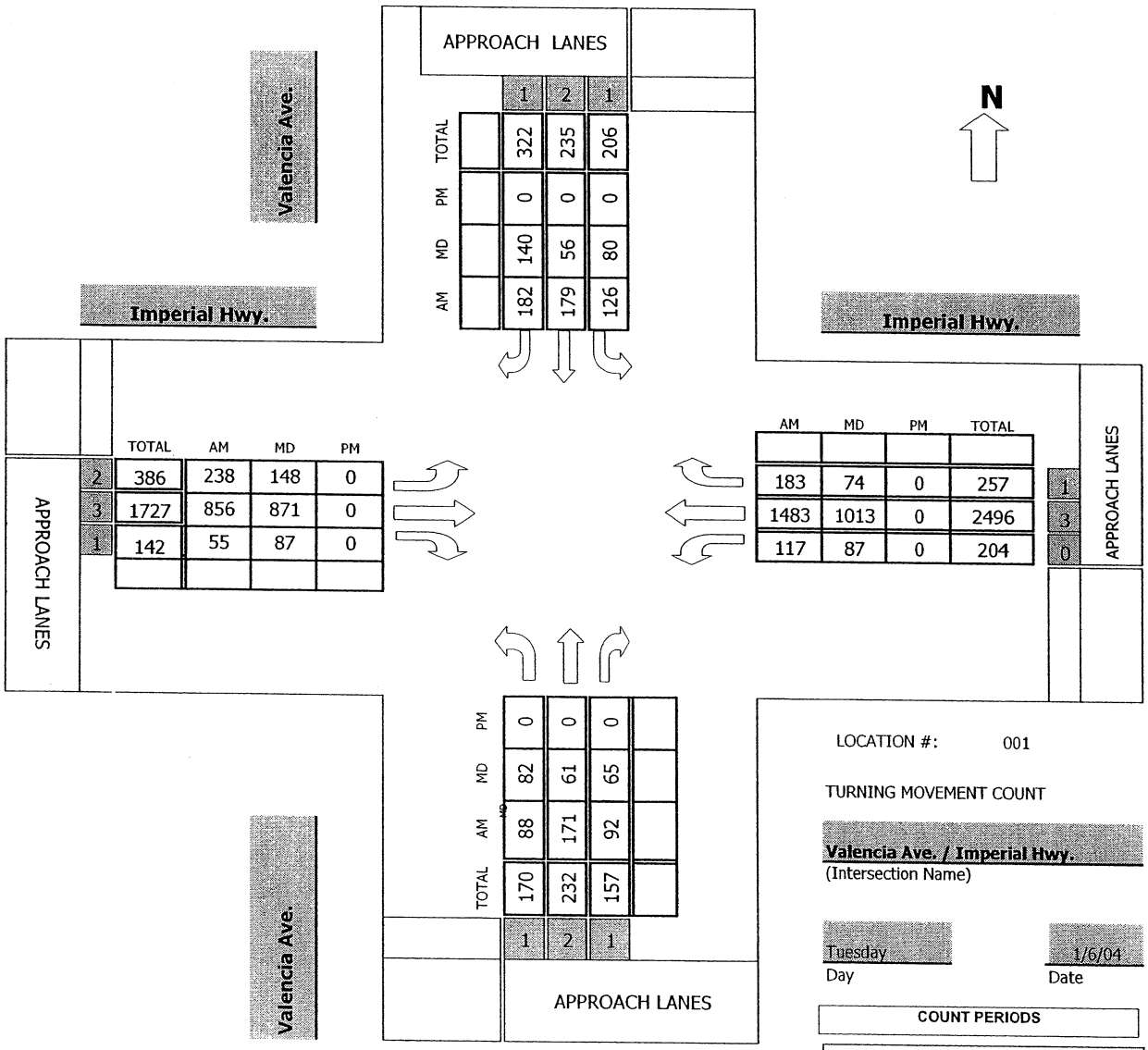
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	41	161	6	145	173	32	52	206	35	6	207	137	1201
PEAK HR. FACTOR:		0.703			0.911			0.788			0.833		0.855

CONTROL: Signalized;

TMC SUMMARY OF Valencia Ave. / Imperial Hwy.

Project #: 04-1041-003



	1	2	1
TOTAL	322	235	206
PM	0	0	0
MD	140	56	80
AM	182	179	126

	TOTAL	AM	MD	PM
2	386	238	148	0
3	1727	856	871	0
1	142	55	87	0

AM	MD	PM	TOTAL	
183	74	0	257	1
1483	1013	0	2496	3
117	87	0	204	0

	1	2	1
PM	0	0	0
MD	82	61	65
AM	88	171	92
TOTAL	170	232	157

LOCATION #: 001

TURNING MOVEMENT COUNT

Valencia Ave. / Imperial Hwy.
(Intersection Name)

Tuesday — Day

1/6/04 — Date

COUNT PERIODS

am	7:00 AM -	9:00 AM
noon	11:00 AM -	1:00 PM
pm	10:00 AM -	12:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1041-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 2	ET 3	ER 1	WL 1	WT 3	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	15	28	8	13	59	25	51	155	6	9	322	29	720
7:15 AM	14	34	10	27	55	38	30	180	6	6	352	28	780
7:30 AM	19	35	16	29	43	42	60	207	9	26	360	35	881
7:45 AM	15	46	25	40	37	47	54	230	16	39	368	49	966
8:00 AM	22	51	31	26	45	46	69	247	21	31	403	54	1046
8:15 AM	32	39	20	31	54	47	55	172	9	21	352	45	877
8:30 AM	29	30	23	30	41	44	55	186	18	22	310	41	829
8:45 AM	12	21	18	26	37	35	84	150	17	11	282	22	715
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 158	NT 284	NR 151	SL 222	ST 371	SR 324	EL 458	ET 1527	ER 102	WL 165	WT 2749	WR 303	TOTAL 6814

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	88	171	92	126	179	182	238	856	55	117	1483	183	3770
PEAK HR. FACTOR:		0.844			0.922			0.852			0.913		0.901

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Valencia Ave. DATE: 1/6/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1041-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	2	1	2	3	1	1	3	0	
10:00 AM	14	5	16	7	11	32	19	132	13	8	183	13	453
10:15 AM	26	22	12	16	14	37	33	183	12	17	227	14	613
10:30 AM	14	13	12	15	14	31	38	151	16	15	227	20	566
10:45 AM	28	15	19	15	16	26	38	178	19	18	216	8	596
11:00 AM	16	11	13	18	9	29	35	197	23	26	262	24	663
11:15 AM	27	15	14	19	11	31	36	195	20	12	240	9	629
11:30 AM	20	16	21	19	16	34	32	222	21	23	241	22	687
11:45 AM	19	19	17	24	20	46	45	257	23	26	270	19	785
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 164	NT 116	NR 124	SL 133	ST 111	SR 266	EL 276	ET 1515	ER 147	WL 145	WT 1866	WR 129	TOTAL 4992

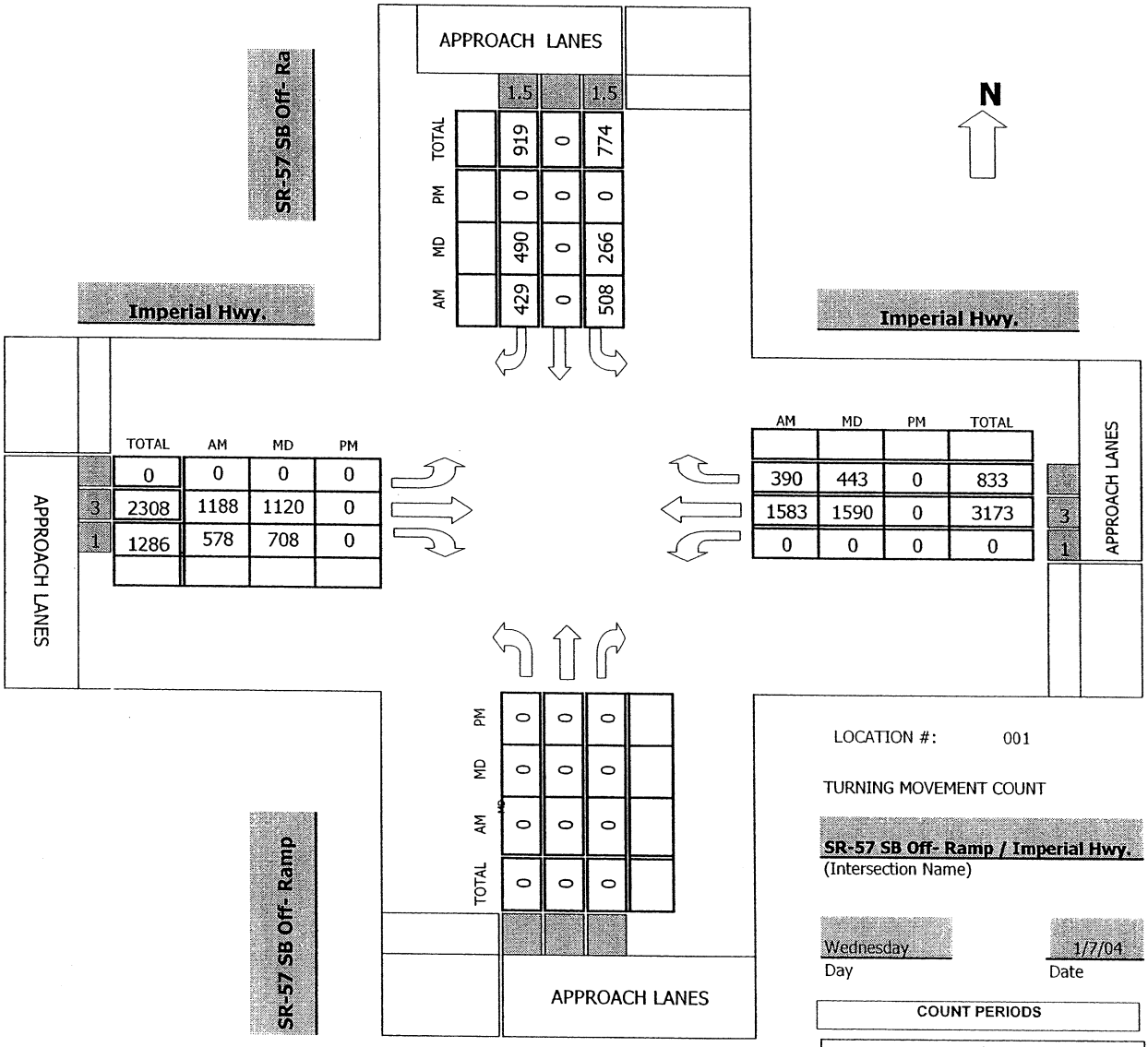
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	82	61	65	80	56	140	148	871	87	87	1013	74	2764
PEAK HR. FACTOR:		0.912			0.767			0.851			0.932		0.880

CONTROL: Signalized;

TMC SUMMARY OF SR-57 SB Off- Ramp / Imperial Hwy.

Project #: 04-1041-005



LOCATION #: 001

TURNING MOVEMENT COUNT

SR-57 SB Off- Ramp / Imperial Hwy.
(Intersection Name)

Wednesday
Day

1/7/04
Date

COUNT PERIODS	
am	7:00 AM - 9:00 AM
noon	11:00 AM - 1:00 PM
pm	10:00 AM - 12:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 SB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				1.5		1.5		3	1		3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				121		85		255	136		369	93	1059
7:15 AM				115		86		285	146		367	72	1071
7:30 AM				113		106		315	143		368	80	1125
7:45 AM				141		102		336	142		398	91	1210
8:00 AM				126		114		279	158		426	97	1200
8:15 AM				128		107		258	135		391	122	1141
8:30 AM				101		130		243	128		370	112	1084
8:45 AM				133		148		253	161		370	120	1185
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 978	ST 0	SR 878	EL 0	ET 2224	ER 1149	WL 0	WT 3059	WR 787	TOTAL 9075

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	0	0	508	0	429	0	1188	578	0	1583	390	4676
PEAK HR. FACTOR:		0.000			0.964			0.924			0.943		0.966

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 SB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:				1.5		1.5		3	1		3	1	
10:00 AM				60		135		202	154		384	166	1101
10:15 AM				63		110		251	149		336	100	1009
10:30 AM				70		109		223	146		342	125	1015
10:45 AM				72		120		266	140		404	118	1120
11:00 AM				86		130		251	168		350	75	1060
11:15 AM				56		126		265	185		362	105	1099
11:30 AM				58		121		319	188		416	152	1254
11:45 AM				66		113		285	167		462	111	1204
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 531	ST 0	SR 964	EL 0	ET 2062	ER 1297	WL 0	WT 3056	WR 952	TOTAL 8862

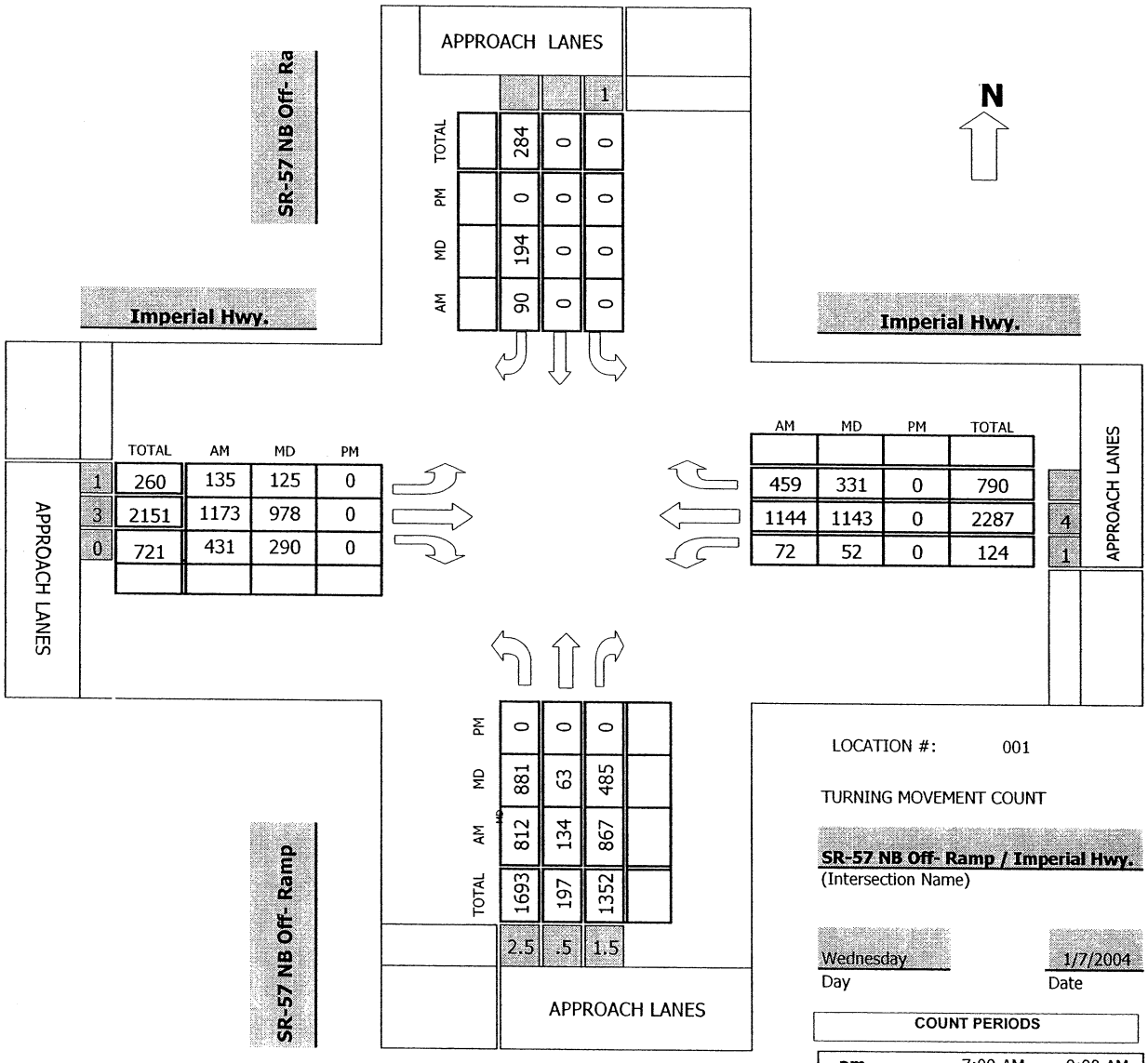
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	0	0	0	266	0	490	0	1120	708	0	1590	443	4617
PEAK HR. FACTOR:		0.000			0.875			0.000			0.887		0.920

CONTROL: Signalized

TMC SUMMARY OF SR-57 NB Off- Ramp / Imperial Hwy.

Project #: 04-1041-004



LOCATION #: 001

TURNING MOVEMENT COUNT

SR-57 NB Off- Ramp / Imperial Hwy.
(Intersection Name)

Wednesday
Day

1/7/2004
Date

COUNT PERIODS		
am	7:00 AM	- 9:00 AM
noon	11:00 AM	- 1:00 PM
pm	10:00 AM	- 12:00 PM

AM PEAK HOUR	730 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 NB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WR1	WT	WR	TOTAL
LANES:	2.5	.5	1.5			1	1	3	0		4	1	
10:00 AM	173	4	118			27	27	191	60	10	241	56	907
10:15 AM	167	8	109			25	22	226	66	15	240	70	948
10:30 AM	148	8	124			23	25	199	64	12	276	84	963
10:45 AM	203	18	124			28	29	233	60	12	245	63	1015
11:00 AM	190	13	105			43	33	237	65	13	276	78	1053
11:15 AM	204	15	118			43	26	223	70	18	260	96	1073
11:30 AM	217	15	133			53	25	266	85	10	314	74	1192
11:45 AM	270	20	129			55	41	252	70	11	293	83	1224
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 1572	NT 101	NR 960	SL 0	ST 0	SR 297	EL 228	ET 1827	ER 540	WR1 101	WT 2145	WR 604	TOTAL 8375

NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	881	63	485	0	0	194	125	978	290	52	1143	331	4542
PEAK HR. FACTOR:		0.853			0.882			0.926			0.959		0.928

CONTROL: Signalized

WR1= CARS INTO SHOPPING CTR

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 NB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WR1	WT	WR	TOTAL
LANES:	2.5	.5	1.5			1	1	3	0		4	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	173	50	184			16	22	203	86	20	229	115	1098
7:15 AM	193	25	170			23	29	240	150	21	250	119	1220
7:30 AM	197	36	206			26	28	277	113	19	242	122	1266
7:45 AM	194	37	243			33	49	296	119	20	270	112	1373
8:00 AM	228	40	230			8	43	316	116	15	321	89	1406
8:15 AM	193	21	188			23	15	284	83	18	311	136	1272
8:30 AM	217	14	165			31	26	227	113	19	271	109	1192
8:45 AM	202	14	161			31	19	270	78	22	253	99	1149
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 1597	NT 237	NR 1547	SL 0	ST 0	SR 191	EL 231	ET 2113	ER 858	WR1 154	WT 2147	WR 901	TOTAL 9976

AM Peak Hr Begins at: 730 AM

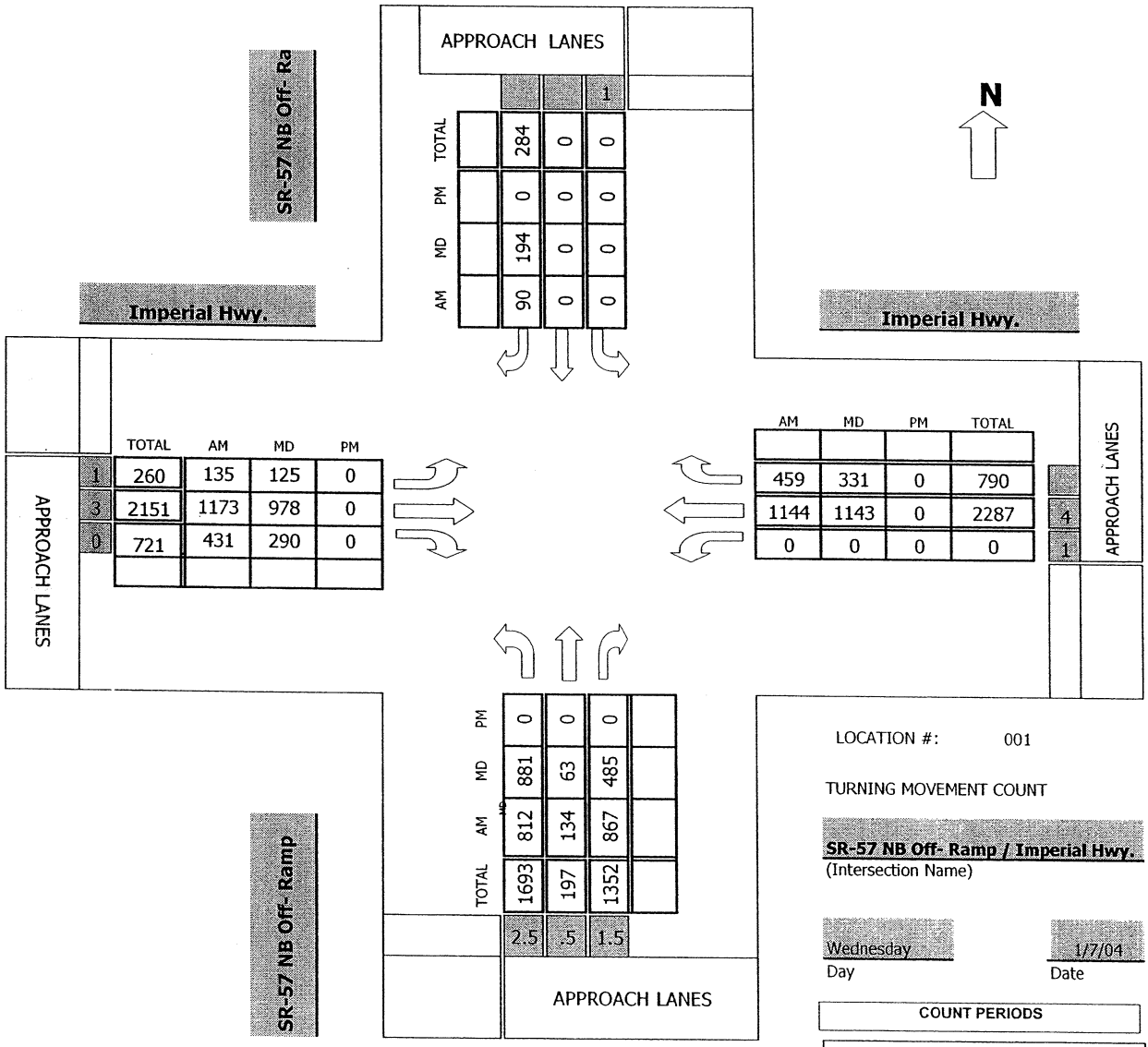
PEAK VOLUMES =	812	134	867	0	0	90	135	1173	431	72	1144	459	5317
PEAK HR. FACTOR:		0.910			0.682			0.915			0.901		0.945

CONTROL: Signalized

WR1=CARS INTO SHOPPING CENTER

TMC SUMMARY OF SR-57 NB Off- Ramp / Imperial Hwy.

Project #: 04-1041-004



LOCATION #: 001

TURNING MOVEMENT COUNT

SR-57 NB Off- Ramp / Imperial Hwy.
(Intersection Name)

Wednesday — Day

1/7/04 — Date

COUNT PERIODS

am	7:00 AM	- 9:00 AM
noon	11:00 AM	- 1:00 PM
pm	10:00 AM	- 12:00 PM

AM PEAK HOUR 730 AM

NOON PEAK HOUR 1100 AM

PM PEAK HOUR 0 AM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 NB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2.5	NT .5	NR 1.5	SL	ST	SR 1	EL 1	ET 3	ER 0	WL	WT 4	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	173	50	184			16	22	203	86		229	115	1078
7:15 AM	193	25	170			23	29	240	150		250	119	1199
7:30 AM	197	36	206			26	28	277	113		242	122	1247
7:45 AM	194	37	243			33	49	296	119		270	112	1353
8:00 AM	228	40	230			8	43	316	116		321	89	1391
8:15 AM	193	21	188			23	15	284	83		311	136	1254
8:30 AM	217	14	165			31	26	227	113		271	109	1173
8:45 AM	202	14	161			31	19	270	78		253	99	1127
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 1597	NT 237	NR 1547	SL 0	ST 0	SR 191	EL 231	ET 2113	ER 858	WL 0	WT 2147	WR 901	TOTAL 9822

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	812	134	867	0	0	90	135	1173	431	0	1144	459	5245
PEAK HR. FACTOR:		0.910			0.682			0.915			0.897		0.943

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-57 NB Off- Ramp DATE: 1/7/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: WEDNESDAY PROJECT# 04-1041-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2.5	NT .5	NR 1.5	SL	ST	SR 1	EL 1	ET 3	ER 0	WL	WT 4	WR 1	TOTAL
10:00 AM	173	4	118			27	27	191	60		241	56	897
10:15 AM	167	8	109			25	22	226	66		240	70	933
10:30 AM	148	8	124			23	25	199	64		276	84	951
10:45 AM	203	18	124			28	29	233	60		245	63	1003
11:00 AM	190	13	105			43	33	237	65		276	78	1040
11:15 AM	204	15	118			43	26	223	70		260	96	1055
11:30 AM	217	15	133			53	25	266	85		314	74	1182
11:45 AM	270	20	129			55	41	252	70		293	83	1213
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 1572	NT 101	NR 960	SL 0	ST 0	SR 297	EL 228	ET 1827	ER 540	WL 0	WT 2145	WR 604	TOTAL 8274

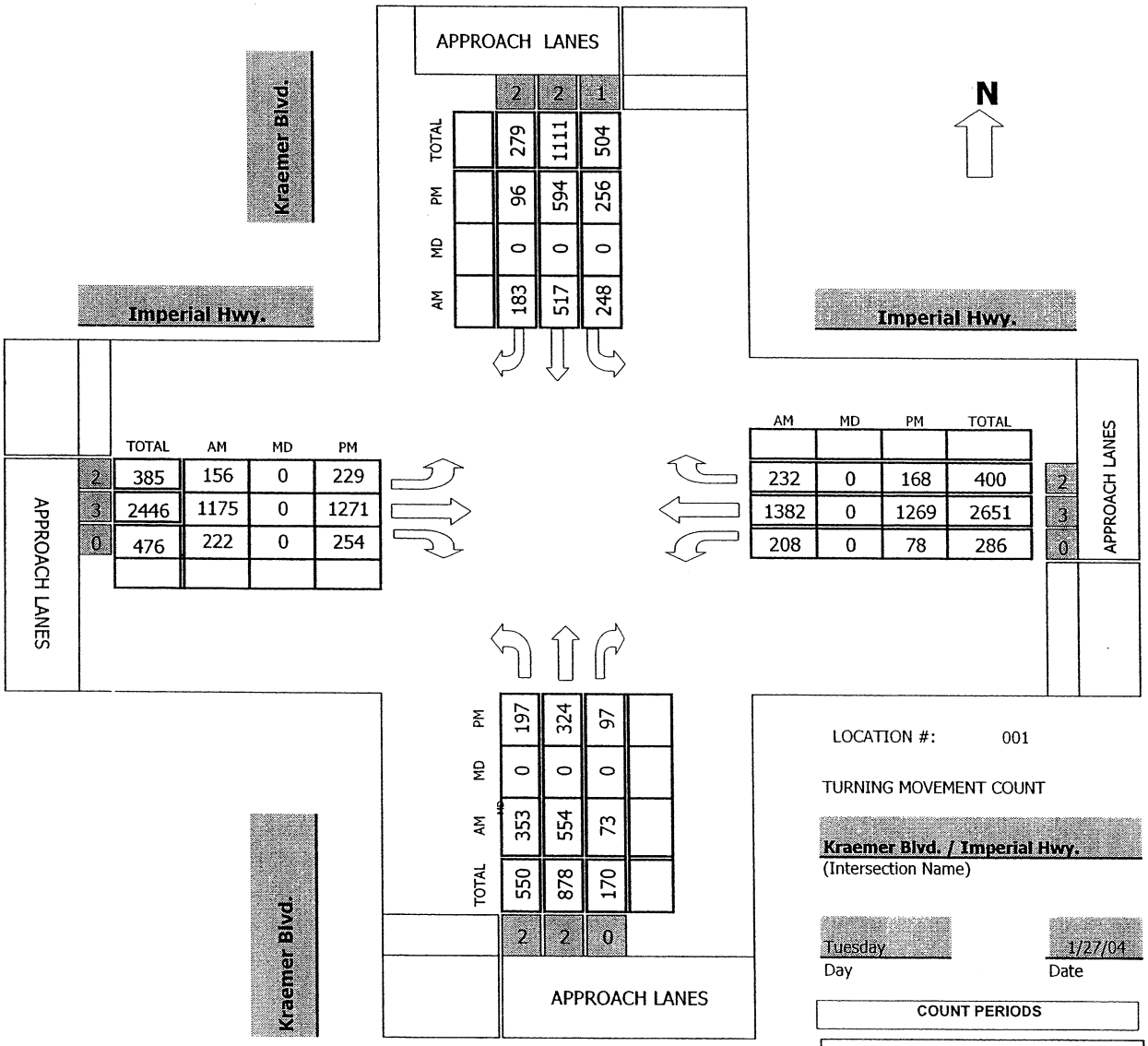
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	881	63	485	0	0	194	125	978	290	0	1143	331	4490
PEAK HR. FACTOR:		0.853			0.882			0.926			0.950		0.925

CONTROL: Signalized

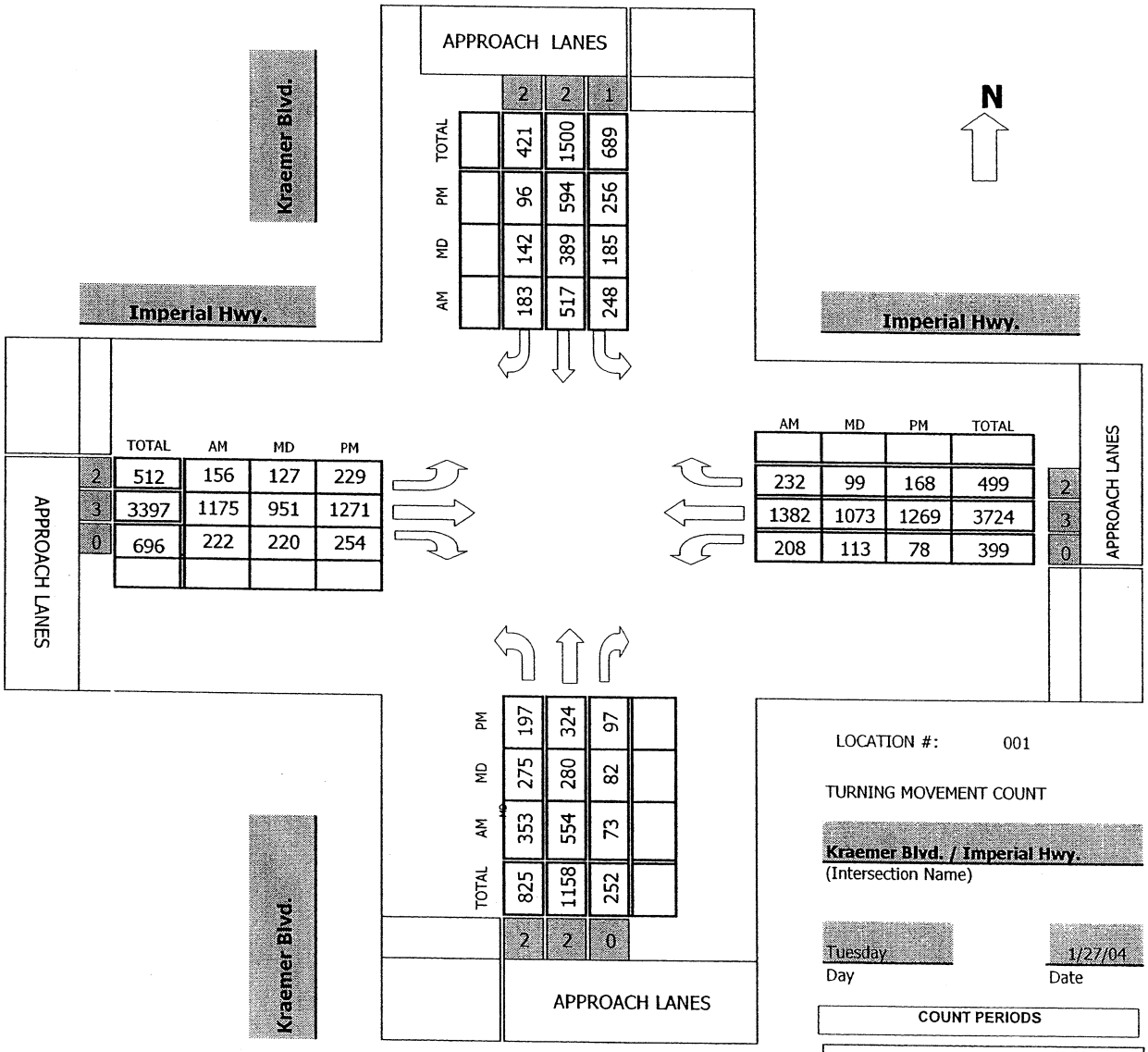
TMC SUMMARY OF Kraemer Blvd. / Imperial Hwy.

Project #: 04-1088-003



TMC SUMMARY OF Kraemer Blvd. / Imperial Hwy.

Project #: 04-1088-003



LOCATION #: 001

TURNING MOVEMENT COUNT

Kraemer Blvd. / Imperial Hwy.
(Intersection Name)

Tuesday — Day

1/27/04 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon	4:00 PM	-	6:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	745 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Kraemer Blvd. DATE: 1/27/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 2	NR 0	SL 2	ST 2	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	54	121	18	64	114	45	37	274	58	43	268	53	1149
7:15 AM	84	128	21	62	101	31	34	246	60	40	275	44	1126
7:30 AM	75	120	18	64	133	50	43	269	64	36	328	50	1250
7:45 AM	73	110	20	52	133	54	27	273	41	53	358	54	1248
8:00 AM	97	157	15	72	144	45	46	291	57	73	362	63	1422
8:15 AM	92	132	17	71	109	40	34	306	67	49	352	59	1328
8:30 AM	91	155	21	53	131	44	49	305	57	33	310	56	1305
8:45 AM	72	117	18	59	113	38	31	278	53	28	305	58	1170
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 638	NT 1040	NR 148	SL 497	ST 978	SR 347	EL 301	ET 2242	ER 457	WL 355	WT 2558	WR 437	TOTAL 9998

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	353	554	73	248	517	183	156	1175	222	208	1382	232	5303
PEAK HR. FACTOR:		0.911			0.908			0.945			0.915		0.932

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Kraemer Blvd. DATE: 2/3/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 2	NT 2	NR 0	SL 2	ST 2	SR 1	EL 2	ET 3	ER 0	WL 2	WT 3	WR 0	TOTAL
10:00 AM	34	23	10	21	34	6	29	145	37	11	106	15	471
10:15 AM	57	47	14	35	44	23	19	246	44	9	195	27	760
10:30 AM	69	50	13	38	61	15	27	238	34	26	196	21	788
10:45 AM	57	53	18	36	73	26	34	256	57	25	216	25	876
11:00 AM	61	67	15	42	84	20	30	200	53	27	208	27	834
11:15 AM	70	63	12	35	83	29	24	243	54	26	280	27	946
11:30 AM	65	76	33	48	111	49	27	228	47	34	257	25	1000
11:45 AM	79	74	22	60	111	44	46	280	66	26	328	20	1156
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 492	NT 453	NR 137	SL 315	ST 601	SR 212	EL 236	ET 1836	ER 392	WL 184	WT 1786	WR 187	TOTAL 6831

NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	275	280	82	185	389	142	127	951	220	113	1073	99	3936
PEAK HR. FACTOR:		0.910			0.833			0.828			0.859		0.851

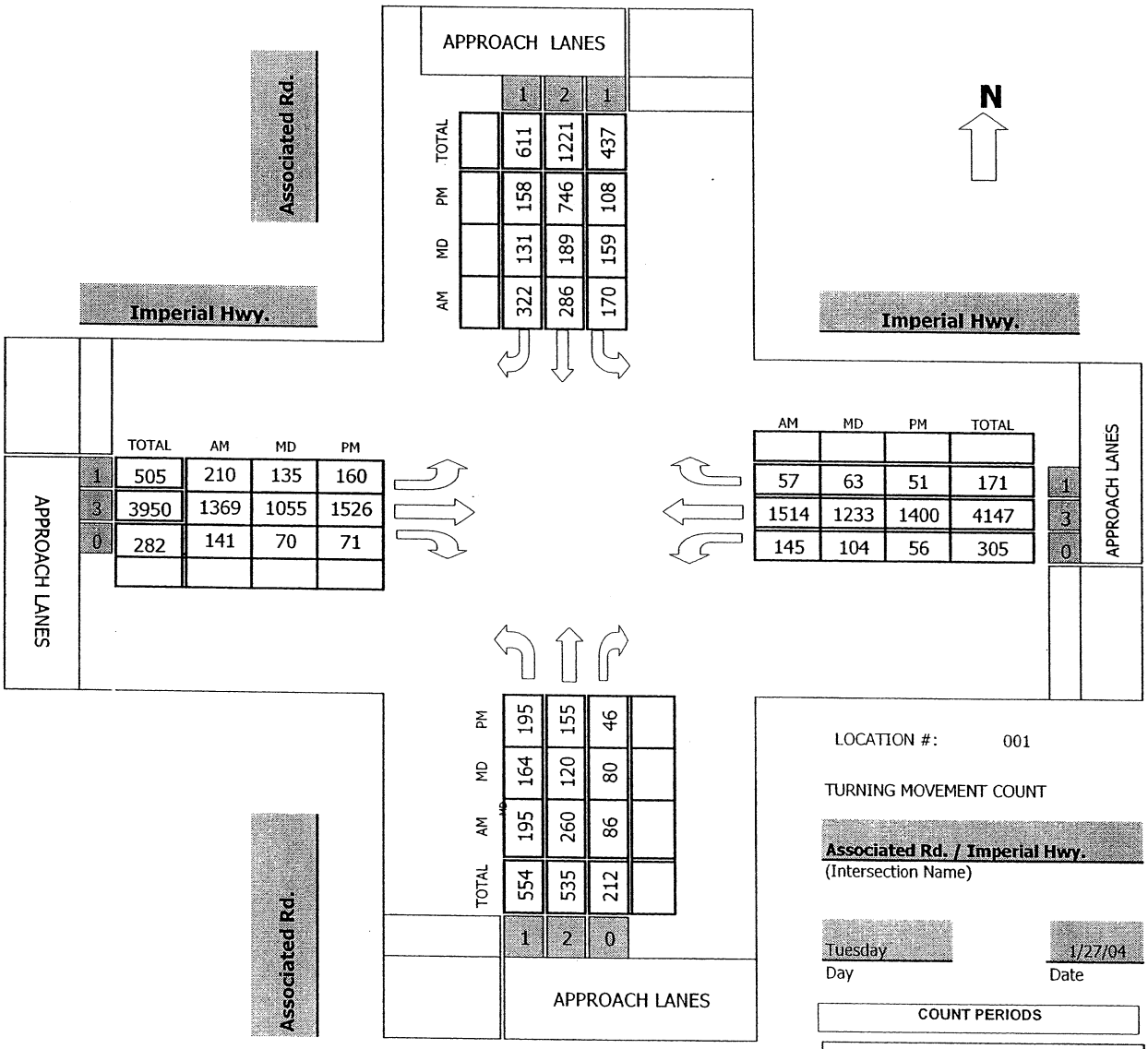
CONTROL:

NR=TRASH TRUCKS MAKING MOVEMENT
CVT= 2
BLUE=2
OTHER=4

WL=TRASH TRUCKS MAKING MOVEMENT
CVT= 2
BLUE= 6
OTHER= 1

TMC SUMMARY OF Associated Rd. / Imperial Hwy.

Project #: 04-1088-002



LOCATION #: 001

TURNING MOVEMENT COUNT

Associated Rd. / Imperial Hwy.
(Intersection Name)

Tuesday — Day

1/27/04 — Date

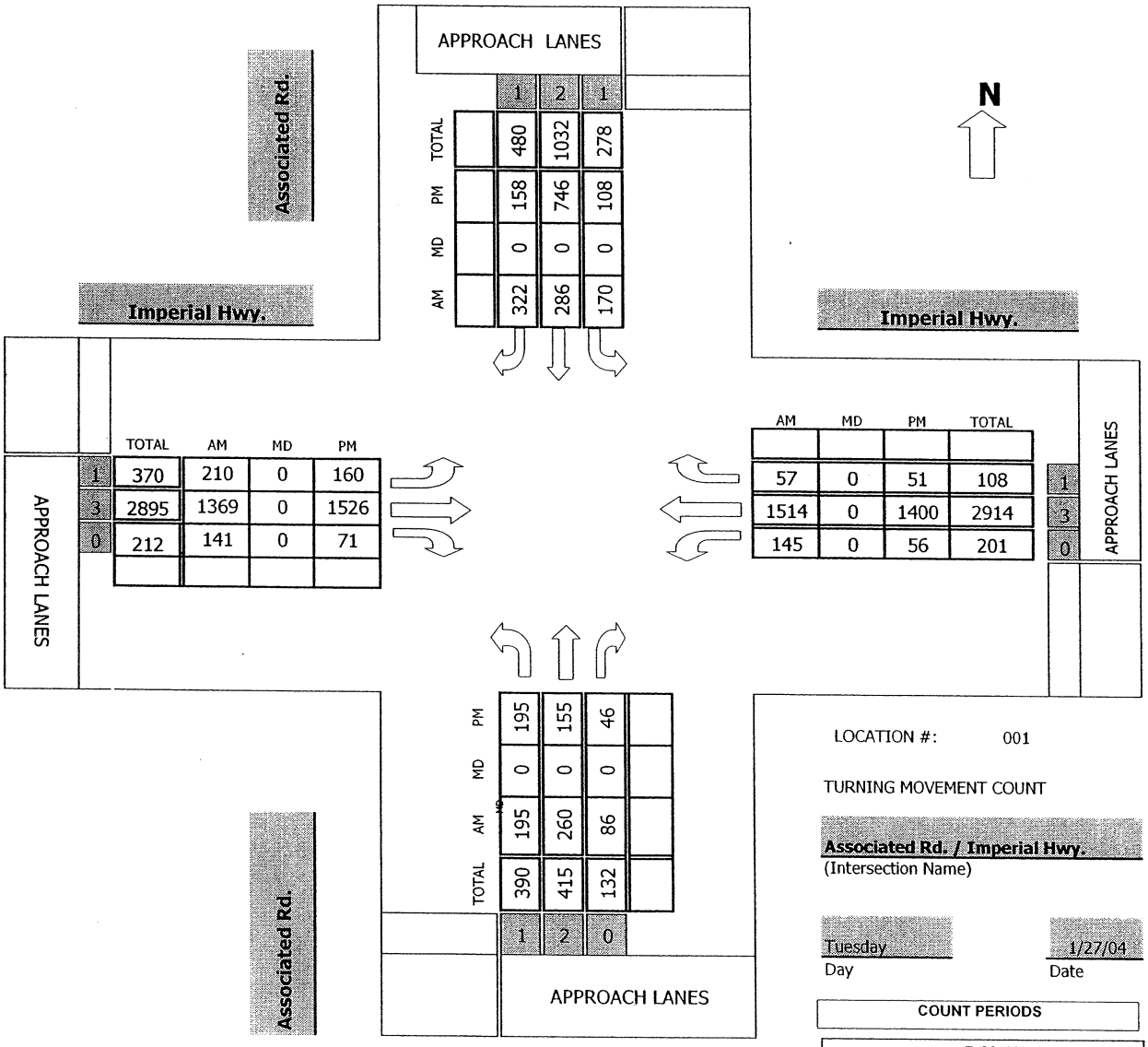
COUNT PERIODS

am	7:00 AM	-	9:00 AM
noon	4:00 PM	-	6:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	745 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	400 PM

TMC SUMMARY OF Associated Rd. / Imperial Hwy.

Project #: 04-1088-002



LOCATION #: 001

TURNING MOVEMENT COUNT

Associated Rd. / Imperial Hwy.
(Intersection Name)

Tuesday — Day

1/27/04 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon	4:00 PM	-	6:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	400 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Associated Rd. DATE: 1/27/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	51	41	26	43	56	53	40	327	37	32	336	17	1059
7:15 AM	40	42	24	31	58	40	49	348	39	27	404	14	1116
7:30 AM	41	67	11	33	56	84	39	271	28	31	360	9	1030
7:45 AM	49	60	18	47	78	87	51	370	41	41	388	11	1241
8:00 AM	49	67	18	52	74	91	58	335	31	31	404	14	1224
8:15 AM	45	67	28	32	60	59	59	344	29	40	404	22	1189
8:30 AM	52	66	22	39	74	85	42	320	40	33	318	10	1101
8:45 AM	40	68	9	51	41	50	44	392	44	43	364	9	1155
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 367	NT 478	NR 156	SL 328	ST 497	SR 549	EL 382	ET 2707	ER 289	WL 278	WT 2978	WR 106	TOTAL 9115

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	195	260	86	170	286	322	210	1369	141	145	1514	57	4755
PEAK HR. FACTOR:		0.966			0.896			0.931			0.921		0.958

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Associated Rd. DATE: 2/3/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	TOTAL
10:00 AM	32	61	22	15	56	34	17	193	13	11	246	13	713
10:15 AM	40	17	28	23	29	33	32	270	11	14	260	14	771
10:30 AM	30	24	17	21	18	25	23	249	10	17	259	25	718
10:45 AM	37	19	20	23	28	32	26	277	18	17	306	11	814
11:00 AM	32	30	24	22	42	21	26	238	12	19	288	12	766
11:15 AM	26	26	17	36	32	32	29	258	15	35	313	15	834
11:30 AM	63	36	19	52	68	41	47	261	22	25	294	16	944
11:45 AM	43	28	20	49	47	37	33	298	21	25	338	20	959
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 303	NT 241	NR 167	SL 241	ST 320	SR 255	EL 233	ET 2044	ER 122	WL 163	WT 2304	WR 126	TOTAL 6519

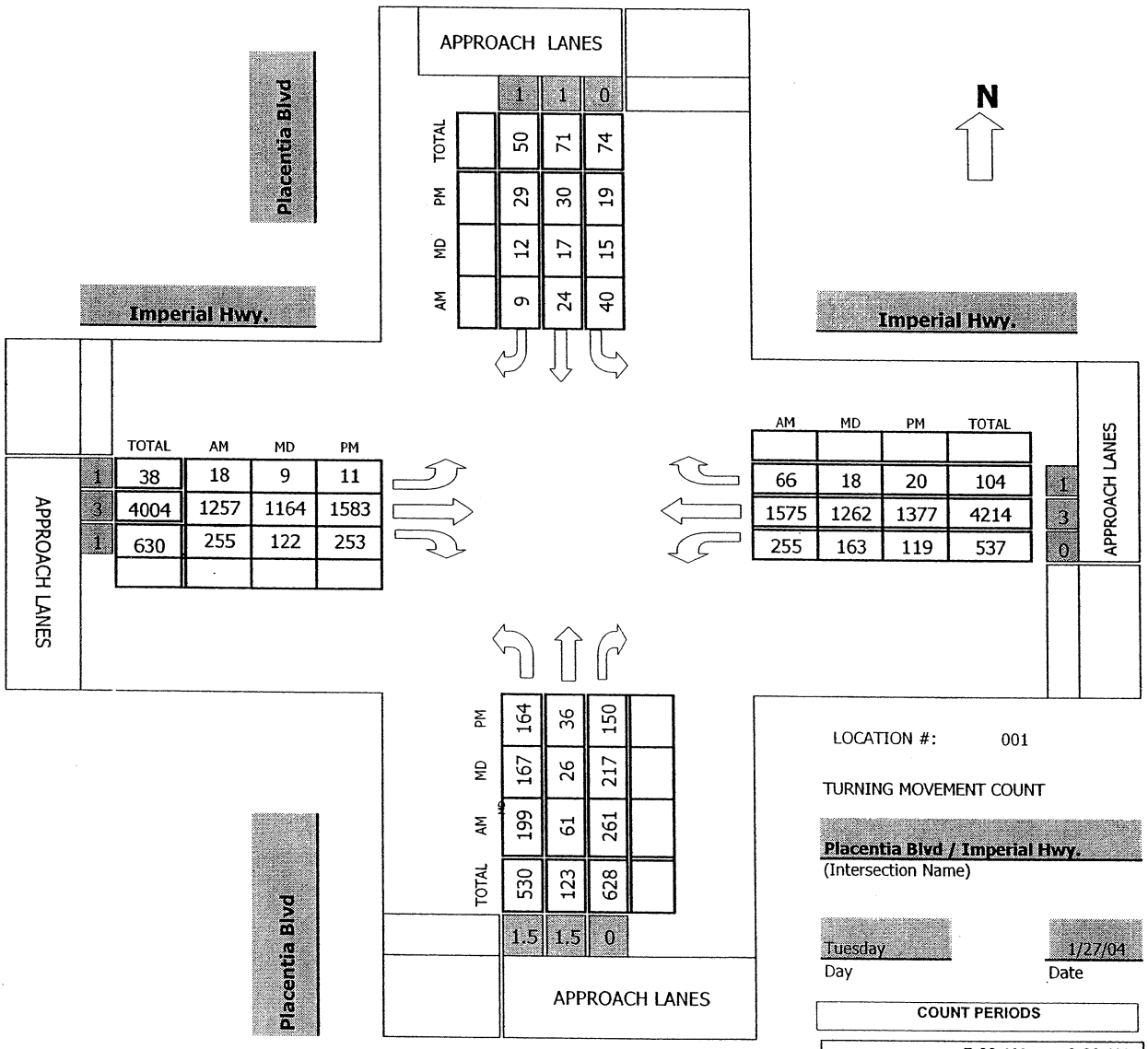
NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	164	120	80	159	189	131	135	1055	70	104	1233	63	3503
PEAK HR. FACTOR:		0.771			0.744			0.895			0.914		0.913

CONTROL:

TMC SUMMARY OF Placentia Blvd / Imperial Hwy.

Project #: 04-1088-001



LOCATION #: 001

TURNING MOVEMENT COUNT

Placentia Blvd / Imperial Hwy.
(Intersection Name)

Tuesday — Day

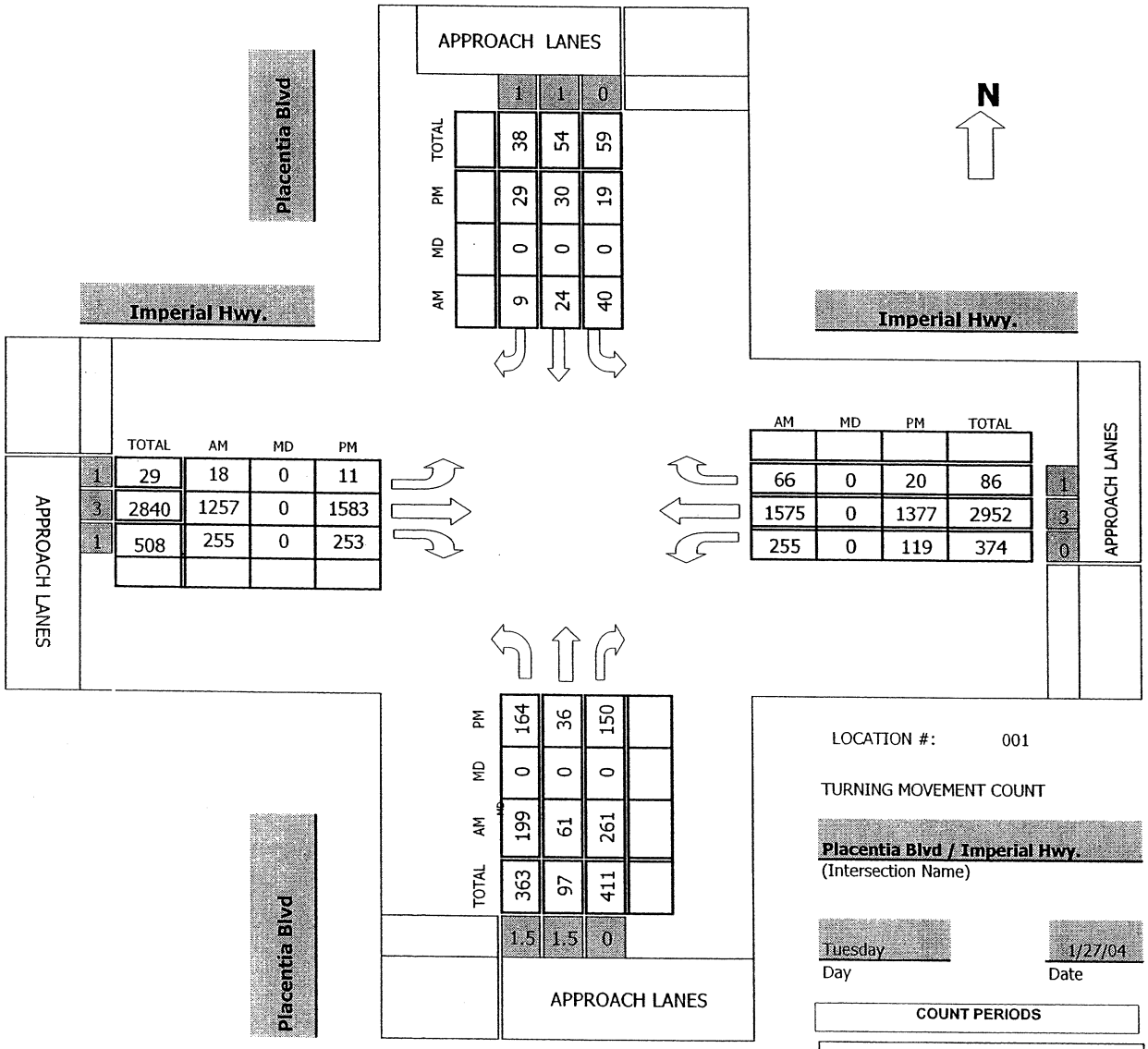
1/27/04 — Date

COUNT PERIODS			
am	7:00 AM	-	9:00 AM
noon	4:00 PM	-	6:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	745 AM
NOON PEAK HOUR	1100 AM
PM PEAK HOUR	430 PM

TMC SUMMARY OF Placentia Blvd / Imperial Hwy.

Project #: 04-1088-001



LOCATION #: 001

TURNING MOVEMENT COUNT

Placentia Blvd / Imperial Hwy.
(Intersection Name)

Tuesday — Day

1/27/04 — Date

COUNT PERIODS

am	7:00 AM	-	9:00 AM
noon	4:00 PM	-	6:00 PM
pm	4:00 PM	-	6:00 PM

AM PEAK HOUR	745 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	430 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Placentia Blvd DATE: 1/27/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	0	1	1	0	1	3	1	1	3	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	64	18	68	9	3	1	3	298	50	52	306	6	878
7:15 AM	55	14	54	9	3	1	2	283	30	58	344	12	865
7:30 AM	39	14	60	5	3	0	3	314	39	46	383	11	917
7:45 AM	37	14	69	10	7	6	5	280	45	85	411	11	980
8:00 AM	58	19	63	10	6	2	3	338	71	60	359	12	1001
8:15 AM	57	16	62	10	4	1	4	299	80	62	426	20	1041
8:30 AM	47	12	67	10	7	0	6	340	59	48	379	23	998
8:45 AM	43	10	61	6	3	1	4	319	69	58	368	10	952
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	400	117	504	69	36	12	30	2471	443	469	2976	105	7632
AM Peak Hr Begins at:		745 AM											
PEAK VOLUMES =	199	61	261	40	24	9	18	1257	255	255	1575	66	4020
PEAK HR. FACTOR:		0.930			0.793			0.928			0.933		0.965

CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Placentia Blvd DATE: 2/3/2004 LOCATION: City of Brea

E-W STREET: Imperial Hwy. DAY: TUESDAY PROJECT# 04-1088-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	0	1	1	0	1	3	1	1	3	0	
10:00 AM	28	5	28	3	1	3	4	227	32	25	261	4	621
10:15 AM	30	3	37	3	5	2	3	273	24	25	263	5	673
10:30 AM	27	2	37	4	1	6	5	246	20	25	230	1	604
10:45 AM	34	9	39	5	6	3	1	271	25	35	280	5	713
11:00 AM	37	5	41	3	2	1	2	299	23	27	285	4	729
11:15 AM	29	3	44	5	4	4	2	238	36	58	319	4	746
11:30 AM	57	10	59	4	4	4	1	321	31	31	324	3	849
11:45 AM	44	8	73	3	7	3	4	306	32	47	334	7	868
12:00 PM													
12:15 PM													
12:30 PM													
12:45 PM													
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
TOTAL VOLUMES =	NL 286	NT 45	NR 358	SL 30	ST 30	SR 26	EL 22	ET 2181	ER 223	WL 273	WT 2296	WR 33	TOTAL 5803

NOON Peak Hr Begins at: 1100 AM

PEAK VOLUMES =	167	26	217	15	17	12	9	1164	122	163	1262	18	3192
PEAK HR. FACTOR:		0.813			0.846			0.917			0.930		0.919

CONTROL:

APPENDIX F-3

ICU/LOS CALCULATION WORKSHEETS
EXISTING A.M. PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Lambert Rd-Carb.Cyn Rd/Valencia [Ex.04 AM St. Pk.Hr 7:30-8:30]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.635
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	31	Level Of Service:	B

Street Name:	Valencia Avenue						Lambert Road/Carbon Canyon Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	2 0	2 1	0
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	87	104	119	3	155	203	59	167	355	698	735	5
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	104	119	3	155	203	59	167	355	698	735	5
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	104	0	3	155	203	59	167	355	698	735	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	104	0	3	155	203	59	167	355	698	735	5
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	87	104	0	3	155	203	59	167	355	698	735	5
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	2.98	0.02
Final Sat.:	1700	3400	1700	1700	1700	1700	1700	3400	1700	3400	5066	34
Capacity Analysis Module:												
Vol/Sat:	0.05	0.03	0.00	0.00	0.09	0.12	0.03	0.05	0.21	0.21	0.15	0.15
Crit Moves:	****					****			****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Valencia Ave/Rose St-BirchStreet [EX>AM St. Pk.Hr. 7:30-8:30AM]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.735
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Street Name:	Valencia Avenue						Rose St/BirchStreet					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	1 0		1 0 1	1 0		1 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	31	163	6	553	525	154	39	360	116	7	488	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	163	6	553	525	154	39	360	116	7	488	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	31	163	6	553	525	154	39	360	116	7	488	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	163	6	553	525	154	39	360	116	7	488	135
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	31	163	6	553	525	154	39	360	116	7	488	135
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.22
Lanes:	1.00	1.93	0.07	1.00	1.55	0.45	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1700	3279	121	1700	2629	771	1700	1700	1955	1700	1700	1955
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.33	0.20	0.20	0.02	0.21	0.06	0.00	0.29	0.07
Crit Moves:		****		****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Valencia Avenue/Imperial Hwy. [Existing St. peak Hr. 7:30-8:30AM

Cycle (sec):	100	Critical Vol./Cap. (X):	0.592
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	28	Level Of Service:	A

Street Name:	Valencia Avenue						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0	1	1 0 2	0	1	2 0 3	0	1	1 0 2	1	0
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	88	171	92	126	179	182	238	856	55	117	1483	183
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	171	92	126	179	182	238	856	55	117	1483	183
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	171	92	126	179	182	238	856	55	117	1483	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	171	92	126	179	182	238	856	55	117	1483	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	88	171	92	126	179	182	238	856	55	117	1483	183
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	1.00	2.67	0.33
Final Sat.:	1700	3400	1955	1700	3400	1955	3400	5100	1955	1700	4540	560
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.05	0.07	0.05	0.09	0.07	0.17	0.03	0.07	0.33	0.33
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Kraemer Blvd [Exist. 2004AM Street PK Hr]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.668
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	34	Level Of Service:	B

Street Name:	Kraemer Blvd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		2 0 2	0 1		2 0 2	1 0		2 0 2	1 0	
Volume Module: >> Count Date: 27 Jan 2004 <<												
Base Vol:	353	554	73	248	517	183	156	1175	222	208	1382	232
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	353	554	73	248	517	183	156	1175	222	208	1382	232
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	353	554	73	248	517	183	156	1175	222	208	1382	232
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	353	554	73	248	517	183	156	1175	222	208	1382	232
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	353	554	73	248	517	183	156	1175	222	208	1382	232
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.00	1.77	0.23	2.00	2.00	1.00	2.00	2.52	0.48	2.00	2.57	0.43
Final Sat.:	3400	3004	396	3400	3400	1955	3400	4290	810	3400	4367	733
Capacity Analysis Module:												
Vol/Sat:	0.10	0.18	0.18	0.07	0.15	0.09	0.05	0.27	0.27	0.06	0.32	0.32
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial Hwy & Placentia Ave [Exist 2004 AM Street Pk Hr]

Cycle (sec): 100 Critical Vol./Cap. (X): 0.728
Loss Time (sec): 5 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

Street Name:	Placentia Ave						Imperial Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 1	0	0 1	1	0 0 1	0	1	0 2	0 1	1	0 2	1 0
Volume Module: >> Count Date: 27 Jan 2004 <<												
Base Vol:	199	61	261	40	24	9	18	1257	255	255	1575	66
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	199	61	261	40	24	9	18	1257	255	255	1575	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	199	61	261	40	24	9	18	1257	255	255	1575	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	199	61	261	40	24	9	18	1257	255	255	1575	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	199	61	261	40	24	9	18	1257	255	255	1575	66
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.53	0.47	1.00	1.00	0.73	0.27	1.00	2.00	1.00	1.00	2.88	0.12
Final Sat.:	2596	796	1954	1696	1233	463	1696	3392	1954	1696	4883	205
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.13	0.02	0.02	0.02	0.01	0.37	0.13	0.15	0.32	0.32
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Imperial hwy & Associated Road [Existing 2004 AM Street PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.761
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	C

Street Name:	Associated Rd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	1	0	1 0 2	0	1	1 0 2	1	0	1 0 2	1	0
Volume Module: >> Count Date: 27 Jan 2004 <<												
Base Vol:	195	260	86	170	286	322	210	1369	141	145	1514	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	260	86	170	286	322	210	1369	141	145	1514	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	260	86	170	286	322	210	1369	141	145	1514	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	260	86	170	286	322	210	1369	141	145	1514	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	195	260	86	170	286	322	210	1369	141	145	1514	57
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	1.50	0.50	1.00	2.00	1.00	1.00	2.72	0.28	1.00	2.89	0.11
Final Sat.:	1700	2555	845	1700	3400	1955	1700	4624	548	1700	4915	185
Capacity Analysis Module:												
Vol/Sat:	0.11	0.10	0.10	0.10	0.08	0.16	0.12	0.30	0.26	0.09	0.31	0.31
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Imperial Hwy @ SR 57 SB Off-Ramp [Existing04 Street Pk.Hr.7:30-

Cycle (sec):	100	Critical Vol./Cap. (X):	0.544
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	SR 57 Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	1 0	1!	0 1	0 0	3	0 0	0 0	3	0 0
Volume Module: >> Count Date: 7 Jan 2004 <<												
Base Vol:	0	0	0	508	0	429	0	1188	0	0	1583	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	508	0	429	0	1188	0	0	1583	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	508	0	429	0	1188	0	0	1583	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	508	0	429	0	1188	0	0	1583	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	508	0	429	0	1188	0	0	1583	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	0.00	0.00	0.00	1.63	xxxx	1.37	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	2765	0	2335	0	5100	0	0	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.18	0.00	0.23	0.00	0.00	0.31	0.00
Crit Moves:				****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Imperial Hwy @NB57 Off-Ramp [Ex. 04 Exist AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.736
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	41	Level Of Service:	C

Street Name:	SR57 NB Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	1 1	0 0	0	0 2	1 0	3	0 1	0 0	3	1 0
Volume Module: >> Count Date: 7 Jan 2004 <<												
Base Vol:	812	134	867	0	0	90	135	1173	431	0	1144	531
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	812	134	867	0	0	90	135	1173	431	0	1144	531
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	812	134	867	0	0	90	135	1173	0	0	1144	531
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	812	134	867	0	0	90	135	1173	0	0	1144	531
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	812	134	867	0	0	90	135	1173	0	0	1144	531
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.00	0.27	1.73	0.00	0.00	2.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3400	455	3387	0	0	3400	1700	5100	1700	0	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.24	0.29	0.26	0.00	0.00	0.03	0.08	0.23	0.00	0.00	0.22	0.31
Crit Moves:		****			****			****				****

APPENDIX F-4

ICU/LOS CALCULATION WORKSHEETS
EXISTING MID-MORNING PEAK HOUR

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Lambert Rd.-Carb.Cyn Rd/Valencia Ave. [Landfill Pk.Hr 11AM-Noon]

Cycle (sec): 100 Critical Vol./Cap. (X): 0.257
Loss Time (sec): 5 (Y+R = 0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 16 Level Of Service: A

Street Name:	Valencia Avenue						Lambert Road/Carbon Canyon Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	2 0	2 1	0
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	80	163	127	1	143	79	64	147	89	116	285	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	163	127	1	143	79	64	147	89	116	285	6
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	163	0	1	143	79	64	147	89	116	285	6
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	163	0	1	143	79	64	147	89	116	285	6
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	80	163	0	1	143	79	64	147	89	116	285	6
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.29	0.71	1.00	2.00	1.00	2.00	2.94	0.06
Final Sat.:	1700	3400	1700	1700	2190	1210	1700	3400	1700	3400	4995	105
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.00	0.00	0.07	0.07	0.04	0.04	0.05	0.03	0.06	0.06
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Valencia Ave/Rose St-BirchStreet [Landfill Pk.Hr. 11AM -Noon]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.337
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	18	Level Of Service:	A

Street Name:	Valencia Avenue						Rose St/BirchStreet					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	0 1	1 0	1	0 1
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	41	161	6	145	173	32	52	206	35	6	207	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	161	6	145	173	32	52	206	35	6	207	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	161	6	145	173	32	52	206	35	6	207	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	161	6	145	173	32	52	206	35	6	207	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	41	161	6	145	173	32	52	206	35	6	207	137
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.22
Lanes:	1.00	1.93	0.07	1.00	1.69	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1700	3278	122	1700	2869	531	1700	1700	1955	1700	1700	1955
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.05	0.09	0.06	0.06	0.03	0.12	0.02	0.00	0.12	0.07
Crit Moves:		****		****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Valencia Avenue/Imperial Hwy. [Landfill Pk.Hr. 11AM-Noon]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.427
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	21	Level Of Service:	A

Street Name:	Valencia Avenue						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0	1	1 0 2	0	1	2 0 3	0	1	1 0 2	1	0
Volume Module: >> Count Date: 6 Jan 2004 <<												
Base Vol:	82	61	65	80	56	140	148	871	87	87	1013	74
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	61	65	80	56	140	148	871	87	87	1013	74
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	61	65	80	56	140	148	871	87	87	1013	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	61	65	80	56	140	148	871	87	87	1013	74
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	82	61	65	80	56	140	148	871	87	87	1013	74
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	1.00	2.80	0.20
Final Sat.:	1700	3400	1955	1700	3400	1955	3400	5100	1955	1700	4753	347
Capacity Analysis Module:												
Vol/Sat:	0.05	0.02	0.03	0.05	0.02	0.07	0.04	0.17	0.04	0.05	0.21	0.21
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Kraemer Blvd [Exist. 2004AM Mid Morn Pk]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.512
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Street Name:	Kraemer Blvd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1	1 0	2 0	2	0 1	2 0	2	1 0	2 0	2	1 0
Volume Module: >> Count Date: 3 Feb 2004 <<												
Base Vol:	275	280	82	185	389	142	127	951	220	113	1073	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	275	280	82	185	389	142	127	951	220	113	1073	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275	280	82	185	389	142	127	951	220	113	1073	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	280	82	185	389	142	127	951	220	113	1073	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	275	280	82	185	389	142	127	951	220	113	1073	99
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.00	1.55	0.45	2.00	2.00	1.00	2.00	2.44	0.56	2.00	2.75	0.25
Final Sat.:	3400	2630	770	3400	3400	1955	3400	4142	958	3400	4669	431
Capacity Analysis Module:												
Vol/Sat:	0.08	0.11	0.11	0.05	0.11	0.07	0.04	0.23	0.23	0.03	0.23	0.23
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

****

Intersection #7 Imperial Hwy & Placentia Ave [Exist 2004 Mid AM PK]

****

Cycle (sec):	100	Critical Vol./Cap. (X):	0.604
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	29	Level Of Service:	B

****

Street Name:	Placentia Ave						Imperial Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	0	1	1 0	0	1 0	1 0	2	0 1	1 0	2	1 0
Volume Module: >> Count Date: 3 Feb 2004 <<												
Base Vol:	167	26	217	15	17	12	9	1164	122	163	1262	18
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Initial Bse:	167	26	217	15	17	12	9	1164	122	163	1262	18
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
PHF Volume:	167	26	217	15	17	12	9	1164	122	163	1262	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	26	217	15	17	12	9	1164	122	163	1262	18
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00	1.00 1.00		1.00
Final Vol.:	167	26	217	15	17	12	9	1164	122	163	1262	18
Saturation Flow Module:												
Sat/Lane:	1600 1600		1600	1600 1600		1600	1600 1600		1600	1600 1600		1600
Adjustment:	1.06 1.06		1.22	1.06 1.06		1.06	1.06 1.06		1.22	1.06 1.06		1.06
Lanes:	1.00 1.00		1.00	1.00 0.59		0.41	1.00 2.00		1.00	1.00 2.96		0.04
Final Sat.:	1700 1700		1955	1700 997		703	1700 3400		1955	1700 5028		72
Capacity Analysis Module:												
Vol/Sat:	0.10 0.02		0.11	0.01 0.02		0.02	0.01 0.34		0.06	0.10 0.25		0.25
Crit Moves:	****			****			****			****		

****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Associated [Exist. 2004 Mid-Morn Pk.Hr.]

Cycle (sec): 100 Critical Vol./Cap. (X): 0.547
Loss Time (sec): 5 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

Street Name:	Associated Rd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1	1 0	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module: >> Count Date: 3 Feb 2004 <<												
Base Vol:	164	120	80	159	189	131	135	1055	70	104	1233	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	164	120	80	159	189	131	135	1055	70	104	1233	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	164	120	80	159	189	131	135	1055	70	104	1233	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	120	80	159	189	131	135	1055	70	104	1233	63
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	164	120	80	159	189	131	135	1055	70	104	1233	63
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	1.20	0.80	1.00	2.00	1.00	1.00	2.81	0.19	1.00	2.85	0.15
Final Sat.:	1700	2040	1360	1700	3400	1955	1700	4783	365	1700	4852	248
Capacity Analysis Module:												
Vol/Sat:	0.10	0.06	0.06	0.09	0.06	0.07	0.08	0.22	0.19	0.06	0.25	0.25
Crit Moves:	****					****	****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Imperial Hwy @ SR 57 SB Off-Ramp [Mid-Morning Landfill Pk.Hr. 1

Cycle (sec):	100	Critical Vol./Cap. (X):	0.510
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	24	Level Of Service:	A

Street Name:	SR 57 Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	1	0	1! 0	1	0 0	3	0 0	0 0	3 0 0
Volume Module: >> Count Date: 7 Jan 2004 <<												
Base Vol:	0	0	0	266	0	490	0	1120	0	0	1590	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	266	0	490	0	1120	0	0	1590	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	266	0	490	0	1120	0	0	1590	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	266	0	490	0	1120	0	0	1590	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	266	0	490	0	1120	0	0	1590	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	0.00	0.00	0.00	1.06	0.00	1.94	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	1794	0	3306	0	5100	0	0	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.22	0.00	0.00	0.31	0.00
Crit Moves:				****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Imperial Hwy @NB57 Off-Ramp [Ex. 04 Mid-Morn AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.559
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	26	Level Of Service:	A

Street Name:	SR57 NB Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1! 0	1	0 0	0	2	1 0	3	0 1	0 0	3	1 0
Volume Module: >> Count Date: 7 Jan 2004 <<												
Base Vol:	881	63	485	0	0	194	125	978	290	0	1143	383
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	881	63	485	0	0	194	125	978	290	0	1143	383
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	881	63	485	0	0	194	125	978	0	0	1143	383
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	881	63	485	0	0	194	125	978	0	0	1143	383
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	881	63	485	0	0	194	125	978	0	0	1143	383
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.46	0.18	1.36	0.00	0.00	2.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	4192	300	2308	0	0	3400	1700	5100	1700	0	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.21	0.21	0.21	0.00	0.00	0.06	0.07	0.19	0.00	0.00	0.22	0.23
Crit Moves:		****			****			****				****

APPENDIX F-5

OLINDA ALPHA LANDFILL

FY03 TRAFFIC COUNT INBOUND, RANKED BY DAY COUNT, ALL GATES (SCALES) TOTAL

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Wed	8/28/2002	1,248
Tue	8/27/2002	1,223
Tue	8/13/2002	1,196
Fri	8/23/2002	1,195
Wed	7/31/2002	1,181
Wed	8/14/2002	1,149
Thu	8/29/2002	1,140
Fri	10/11/2002	1,137
Tue	7/30/2002	1,136
Thu	8/1/2002	1,135
Fri	7/26/2002	1,133
Fri	8/2/2002	1,122
Wed	10/30/2002	1,121
Mon	8/26/2002	1,119
Wed	7/24/2002	1,104
Tue	8/6/2002	1,094
Wed	8/21/2002	1,094
Thu	10/10/2002	1,094
Tue	10/29/2002	1,088
Wed	7/17/2002	1,082
Thu	7/25/2002	1,077
Wed	9/18/2002	1,075
Mon	7/29/2002	1,074
Thu	8/15/2002	1,065
Tue	8/20/2002	1,059
Tue	11/19/2002	1,057
Thu	5/8/2003	1,055
Tue	10/15/2002	1,054
Sat	1/11/2003	1,053
Thu	7/18/2002	1,042
Wed	10/23/2002	1,036
Wed	7/3/2002	1,033
Fri	7/19/2002	1,030
Thu	11/14/2002	1,030
Fri	5/9/2003	1,027
Tue	4/29/2003	1,025
Tue	7/16/2002	1,024
Thu	10/17/2002	1,024
Wed	6/18/2003	1,022
Thu	9/12/2002	1,021
Tue	7/23/2002	1,020
Fri	1/10/2003	1,019
Fri	8/16/2002	1,018
Fri	8/30/2002	1,016
Fri	1/17/2003	1,015
Thu	1/16/2003	1,013
Wed	11/20/2002	1,012
Fri	5/16/2003	1,010
Thu	9/19/2002	1,008
Mon	6/30/2003	1,006
Thu	8/22/2002	1,005
Fri	3/7/2003	1,004
Sat	1/18/2003	1,003

Mean	888
Median	903
Mode	922
Maximum	1,248
Minimum	364
Standard Deviation	149

85th percentile level

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Tue	5/6/2003	1,003
Sat	7/27/2002	1,002
Fri	5/30/2003	1,002
Wed	3/12/2003	997
Wed	7/10/2002	993
Tue	12/10/2002	993
Tue	6/17/2003	993
Wed	8/7/2002	992
Fri	10/4/2002	992
Thu	3/6/2003	992
Fri	9/20/2002	990
Thu	10/31/2002	989
Fri	7/5/2002	987
Tue	10/22/2002	987
Tue	9/17/2002	984
Mon	7/8/2002	982
Wed	3/26/2003	982
Tue	1/14/2003	981
Fri	8/9/2002	977
Wed	1/15/2003	977
Wed	2/19/2003	977
Fri	9/13/2002	975
Sat	10/12/2002	974
Wed	11/13/2002	974
Mon	10/28/2002	972
Wed	5/7/2003	972
Mon	8/5/2002	970
Fri	11/1/2002	970
Thu	11/7/2002	970
Thu	8/8/2002	968
Wed	9/4/2002	968
Sat	2/22/2003	968
Thu	6/19/2003	966
Tue	2/18/2003	965
Tue	5/27/2003	963
Wed	4/30/2003	962
Mon	2/24/2003	961
Fri	6/20/2003	959
Mon	7/22/2002	957
Fri	9/6/2002	957
Wed	5/14/2003	957
Tue	7/2/2002	954
Fri	3/21/2003	954
Sat	7/6/2002	953
Tue	7/9/2002	952
Sat	9/7/2002	952
Fri	11/22/2002	951
Wed	5/28/2003	951
Wed	9/11/2002	950
Tue	11/12/2002	948
Thu	9/5/2002	946
Thu	5/29/2003	944
Thu	3/27/2003	943

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Tue	9/3/2002	942
Tue	9/24/2002	942
Thu	4/3/2003	942
Mon	6/23/2003	942
Wed	10/16/2002	939
Mon	10/14/2002	938
Thu	10/24/2002	938
Tue	12/3/2002	938
Tue	5/20/2003	937
Fri	10/18/2002	936
Tue	2/4/2003	936
Thu	5/1/2003	935
Mon	6/16/2003	934
Mon	11/18/2002	933
Tue	6/10/2003	932
Mon	10/7/2002	931
Sat	3/22/2003	931
Fri	6/13/2003	931
Wed	10/9/2002	930
Mon	8/19/2002	929
Fri	4/4/2003	928
Wed	1/8/2003	927
Thu	1/23/2003	925
Thu	3/20/2003	925
Mon	8/12/2002	922
Mon	11/25/2002	922
Fri	12/27/2002	922
Tue	3/25/2003	922
Tue	4/22/2003	922
Mon	1/13/2003	920
Tue	10/8/2002	918
Fri	2/21/2003	918
Tue	5/13/2003	917
Tue	9/10/2002	916
Thu	1/9/2003	916
Fri	7/12/2002	913
Tue	1/21/2003	913
Fri	6/27/2003	913
Wed	10/2/2002	912
Thu	11/21/2002	912
Sat	12/28/2002	910
Tue	11/26/2002	909
Fri	5/2/2003	908
Mon	9/16/2002	907
Thu	5/15/2003	906
Wed	11/27/2002	905
Fri	5/23/2003	903
Mon	12/30/2002	902
Fri	9/27/2002	900
Mon	5/19/2003	899
Mon	9/9/2002	897
Thu	10/3/2002	897
Fri	11/15/2002	897

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Sat	1/4/2003	897
Thu	2/20/2003	897
Sat	6/21/2003	895
Fri	3/14/2003	892
Tue	11/5/2002	891
Wed	4/23/2003	891
Wed	2/5/2003	890
Mon	7/1/2002	889
Sat	4/5/2003	889
Mon	12/2/2002	886
Wed	12/4/2002	886
Fri	12/13/2002	885
Thu	4/24/2003	884
Sat	8/3/2002	883
Wed	6/25/2003	883
Fri	12/6/2002	879
Mon	6/2/2003	876
Mon	9/23/2002	875
Mon	5/12/2003	875
Fri	6/6/2003	875
Tue	4/8/2003	874
Wed	6/4/2003	874
Sat	6/28/2003	874
Tue	6/24/2003	873
Mon	10/21/2002	872
Fri	4/18/2003	872
Thu	12/19/2002	870
Fri	3/28/2003	870
Mon	9/30/2002	868
Wed	5/21/2003	868
Wed	11/6/2002	866
Wed	1/22/2003	866
Fri	1/3/2003	865
Tue	1/7/2003	865
Sat	11/16/2002	863
Wed	4/9/2003	863
Mon	11/4/2002	862
Sat	5/17/2003	861
Thu	3/13/2003	860
Wed	1/29/2003	859
Sat	6/7/2003	859
Wed	3/19/2003	858
Thu	6/26/2003	858
Wed	12/11/2002	856
Mon	1/20/2003	856
Fri	2/7/2003	856
Thu	6/5/2003	856
Fri	10/25/2002	855
Thu	2/6/2003	855
Sat	5/31/2003	855
Sat	5/24/2003	854
Sat	3/8/2003	851
Mon	3/10/2003	850

Average

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Mon	4/28/2003	850
Sat	6/14/2003	850
Sat	3/29/2003	849
Fri	4/11/2003	849
Sat	9/21/2002	848
Thu	9/26/2002	847
Mon	4/7/2003	845
Sat	11/23/2002	844
Tue	3/11/2003	844
Tue	10/1/2002	843
Wed	4/2/2003	843
Mon	3/3/2003	842
Thu	7/11/2002	839
Fri	1/24/2003	836
Sat	7/13/2002	833
Wed	9/25/2002	833
Mon	2/3/2003	833
Sat	8/31/2002	831
Fri	4/25/2003	831
Sat	4/12/2003	830
Sat	5/10/2003	829
Mon	12/9/2002	827
Thu	1/2/2003	826
Tue	12/31/2002	825
Thu	4/17/2003	825
Sat	8/10/2002	824
Sat	10/5/2002	823
Thu	1/30/2003	819
Mon	3/31/2003	819
Thu	5/22/2003	819
Thu	12/12/2002	818
Thu	12/5/2002	817
Mon	7/15/2002	816
Mon	1/6/2003	816
Sat	2/8/2003	815
Sat	4/26/2003	815
Mon	12/16/2002	812
Tue	3/4/2003	812
Sat	7/20/2002	810
Mon	6/9/2003	810
Tue	1/28/2003	809
Mon	1/27/2003	808
Sat	8/24/2002	804
Tue	6/3/2003	804
Sat	10/19/2002	803
Tue	3/18/2003	798
Thu	4/10/2003	796
Sat	2/1/2003	792
Mon	3/24/2003	792
Mon	4/21/2003	791
Sat	9/28/2002	780
Sat	11/2/2002	779
Mon	5/5/2003	775

Olinda Alpha Landfill - FY03 Traffic Count
Inbound, Ranked by Day Count, All Gates Total

Day	Date	Total
Tue	4/1/2003	773
Sat	8/17/2002	770
Fri	11/29/2002	768
Mon	2/10/2003	760
Thu	12/26/2002	757
Fri	1/31/2003	757
Wed	4/16/2003	750
Sat	12/7/2002	744
Sat	12/14/2002	731
Sat	1/25/2003	731
Sat	4/19/2003	709
Sat	9/14/2002	708
Wed	3/5/2003	674
Sat	11/30/2002	665
Tue	4/15/2003	658
Sat	3/1/2003	645
Mon	2/17/2003	635
Fri	2/28/2003	633
Mon	3/17/2003	624
Wed	2/26/2003	586
Wed	12/18/2002	578
Sat	10/26/2002	576
Sat	2/15/2003	563
Tue	12/17/2002	543
Tue	12/24/2002	540
Fri	2/14/2003	539
Mon	11/11/2002	534
Sat	12/21/2002	534
Mon	12/23/2002	528
Tue	2/25/2003	509
Thu	2/27/2003	489
Fri	12/20/2002	488
Tue	2/11/2003	485
Mon	4/14/2003	456
Sat	11/9/2002	434
Wed	2/12/2003	416
Sat	3/15/2003	410
Thu	2/13/2003	397
Sat	5/3/2003	393
Fri	11/8/2002	364

APPENDIX F-6

LONG RANGE TRAFFIC VOLUME PROJECTIONS

SOURCE: AUSTIN-FOUST ASSOCIATES, INC.
CITY OF BREA GENERAL PLAN - TRAFFIC STUDY
APRIL 2003

City of Brea
GENERAL PLAN TRAFFIC ANALYSIS

Prepared by:

Austin-Foust Associates
2020 N. Tustin Avenue
Santa Ana, California 92705

January 29, 2003
(Revised February 11, 2003)

13. Valencia & Lambert

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03	120	.07*
NBT	2	3400	160	.05*	10	.00
NBR	f		110		1510	
SBL	1	1700	110	.06*	180	.11
SBT	2	3400	130	.04	160	.09*
SBR	0	0	20		140	
EBL	1	1700	100	.06	10	.01
EBT	3	5100	410	.12*	1700	.34*
EBR	0	0	310	.18	30	
WBL	2	3400	1440	.42*	150	.04*
WBT	3	5100	2300	.46	690	.14
WBR	0	0	30		10	
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.71		.59

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	130	.08*
NBT	2	3400	60	.02	10	.00
NBR	f		110		1550	
SBL	1	1700	20	.01	20	.01
SBT	2	3400	170	.09*	20	.01*
SBR	0	0	120		130	.08
EBL	1	1700	120	.07*	10	.01
EBT	3	5100	500	.15	1870	.37*
EBR	0	0	350	.21	30	
WBL	2	3400	1230	.36	180	.05*
WBT	3	5100	2330	.46*	740	.15
WBR	0	0	10		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.56

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	120	.07*
NBT	2	3400	150	.04*	20	.01
NBR	f		110		1480	
SBL	1	1700	100	.06*	170	.10
SBT	2	3400	130	.04	150	.09*
SBR	0	0	20		150	
EBL	1	1700	100	.06	10	.01
EBT	3	5100	410	.12*	1720	.34*
EBR	0	0	310	.18	30	
WBL	2	3400	1420	.42*	160	.05*
WBT	3	5100	2300	.46	690	.14
WBR	0	0	30		10	
Right Turn Adjustment			EBR	.01*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.60

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	80	.05*	130	.08*
NBT	2	3400	60	.02	10	.00
NBR	f		110		1520	
SBL	1	1700	10	.01	20	.01
SBT	2	3400	210	.09*	20	.01*
SBR	0	0	80		130	.08
EBL	1	1700	120	.07*	10	.01
EBT	3	5100	490	.14	1850	.37*
EBR	0	0	350	.21	30	
WBL	2	3400	1180	.35	180	.05*
WBT	3	5100	2370	.47*	730	.15
WBR	0	0	10		10	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.56

20. Valencia & Birch/Rose

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	150	.09
NBT	2	3400	160	.05	870	.26*
NBR	1	1700	50	.03	20	.01
SBL	1	1700	450	.26	320	.19*
SBT	2	3400	1350	.43*	50	.02
SBR	0	0	120		30	
EBL	1	1700	40	.02*	170	.10*
EBT	2	3400	790	.23	680	.20
EBR	1	1700	120	.07	60	.04
WBL	1	1700	10	.01	30	.02
WBT	2	3400	510	.23*	260	.15*
WBR	0	0	260		760	.45
Right Turn Adjustment					WBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.76		.91

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	150	.09
NBT	2	3400	160	.05	890	.26*
NBR	1	1700	40	.02	10	.01
SBL	1	1700	500	.29	160	.09*
SBT	2	3400	1250	.40*	50	.02
SBR	0	0	120		30	
EBL	1	1700	40	.02	170	.10*
EBT	2	3400	790	.23*	720	.21
EBR	1	1700	120	.07	60	.04
WBL	1	1700	10	.01*	10	.01
WBT	2	3400	510	.21	330	.19*
WBR	0	0	200		670	.39
Right Turn Adjustment					WBR	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.72		.82

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	150	.09
NBT	2	3400	160	.05	820	.24*
NBR	1	1700	50	.03	20	.01
SBL	1	1700	550	.32	320	.19*
SBT	2	3400	1240	.40*	50	.02
SBR	0	0	120		30	
EBL	1	1700	40	.02*	170	.10*
EBT	2	3400	730	.21	650	.19
EBR	1	1700	120	.07	60	.04
WBL	1	1700	10	.01	30	.02
WBT	2	3400	510	.23*	280	.16*
WBR	0	0	260		790	.46
Right Turn Adjustment					WBR	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.73		.90

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	50	.03*	150	.09
NBT	2	3400	160	.05	900	.26*
NBR	1	1700	40	.02	10	.01
SBL	1	1700	540	.32	170	.10*
SBT	2	3400	1220	.39*	50	.02
SBR	0	0	120		30	
EBL	1	1700	40	.02	170	.10*
EBT	2	3400	740	.22*	670	.20
EBR	1	1700	120	.07	60	.04
WBL	1	1700	10	.01*	10	.01
WBT	2	3400	510	.21	390	.23*
WBR	0	0	200		660	.39
Right Turn Adjustment					WBR	.08*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.82

21. Valencia & Imperial Hwy

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	150	.09
NBT	2	3400	130	.04*	360	.11*
NBR	1	1700	120	.07	330	.19
SBL	1	1700	760	.45*	320	.19*
SBT	2	3400	360	.11	180	.05
SBR	1	1700	160	.09	160	.09
EBL	2	3400	250	.07*	140	.04*
EBT	3	5100	1350	.26	2250	.44
EBR	1	1700	70	.04	110	.06
WBL	1	1700	370	.22	150	.09
WBT	3	5100	2100	.44*	2420	.52*
WBR	0	0	130		210	
Clearance Interval				.05*		.05*
CAPACITY UTILIZATION				1.05		.91

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	150	.09
NBT	2	3400	130	.04*	390	.11*
NBR	1	1700	120	.07	330	.19
SBL	1	1700	640	.38*	310	.18*
SBT	2	3400	410	.12	180	.05
SBR	1	1700	160	.09	160	.09
EBL	2	3400	250	.07*	140	.04*
EBT	3	5100	1440	.28	2280	.45
EBR	1	1700	70	.04	110	.06
WBL	1	1700	370	.22	150	.09
WBT	3	5100	2080	.43*	2430	.52*
WBR	0	0	130		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.97		.90

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	140	.08
NBT	2	3400	130	.04*	300	.09*
NBR	1	1700	120	.07	320	.19
SBL	1	1700	670	.39*	320	.19*
SBT	2	3400	350	.10	180	.05
SBR	1	1700	160	.09	160	.09
EBL	2	3400	250	.07*	140	.04*
EBT	3	5100	1440	.28	2260	.44
EBR	1	1700	70	.04	110	.06
WBL	1	1700	370	.22	140	.08
WBT	3	5100	2120	.44*	2390	.51*
WBR	0	0	140		210	
R[illegible] Turn Adjustment					NBR	.02*
C[illegible]nce Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.99		.90

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06	150	.09
NBT	2	3400	130	.04*	400	.12*
NBR	1	1700	120	.07	330	.19
SBL	1	1700	620	.36*	310	.18*
SBT	2	3400	390	.11	180	.05
SBR	1	1700	160	.09	160	.09
EBL	2	3400	250	.07*	140	.04*
EBT	3	5100	1480	.29	2300	.45
EBR	1	1700	70	.04	110	.06
WBL	1	1700	370	.22	140	.08
WBT	3	5100	2110	.44*	2340	.50*
WBR	0	0	140		210	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.96		.89

30. Kraemer & Imperial Hwy

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	200	.06*	480	.14
NBT	3	5100	430	.11	1430	.30*
NBR	0	0	130		100	
SBL	2	3400	380	.11	630	.19*
SBT	3	5100	1560	.37*	940	.23
SBR	0	0	340		240	
EBL	2	3400	300	.09*	270	.08
EBT	3	5100	1370	.35	1560	.39*
EBR	0	0	430		420	
WBL	2	3400	110	.03	230	.07*
WBT	3	5100	1570	.31*	1740	.34
WBR	1	1700	420	.25	970	.57
Right Turn Adjustment					WBR	.05*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.88		1.05

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	210	.06*	520	.15
NBT	3	5100	460	.12	1430	.30*
NBR	0	0	130		100	
SBL	2	3400	330	.10	620	.18*
SBT	3	5100	1500	.38*	900	.23
SBR	0	0	460		270	
EBL	2	3400	290	.09	290	.09
EBT	3	5100	1480	.38*	1610	.40*
EBR	0	0	460		430	
WBL	2	3400	110	.03*	230	.07*
WBT	3	5100	1550	.30	1740	.34
WBR	1	1700	420	.25	980	.58
Right Turn Adjustment					WBR	.06*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.90		1.06

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	190	.06*	540	.16
NBT	3	5100	470	.12	1420	.30*
NBR	0	0	130		100	
SBL	2	3400	510	.15	690	.20*
SBT	3	5100	1440	.35*	870	.22
SBR	0	0	340		240	
EBL	2	3400	300	.09*	270	.08
EBT	3	5100	1300	.35	1480	.38*
EBR	0	0	500		480	
WBL	2	3400	110	.03	230	.07*
WBT	3	5100	1590	.31*	1710	.34
WBR	1	1700	430	.25	960	.56
Right Turn Adjustment					WBR	.04*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.86		1.04

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	470	.14
NBT	3	5100	460	.12	1430	.30*
NBR	0	0	130		100	
SBL	2	3400	500	.15	640	.19*
SBT	3	5100	1360	.34*	920	.23
SBR	0	0	370		270	
EBL	2	3400	290	.09*	270	.08
EBT	3	5100	1360	.37	1580	.40*
EBR	0	0	520		480	
WBL	2	3400	110	.03	230	.07*
WBT	3	5100	1580	.31*	1680	.33
WBR	1	1700	430	.25	940	.55
Right Turn Adjustment					WBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.85		1.03

29. Placentia & Imperial Hwy

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	200	.12*
NBT	1	1700	50	.03	90	.05
NBR	1	1700	240	.14	210	.12
SBL	1	1700	10	.01	30	.02
SBT	1	1700	40	.04*	20	.02*
SBR	0	0	20		10	
EBL	1	1700	10	.01	10	.01
EBT	3	5100	2550	.50*	2190	.43*
EBR	1	1700	660	.39	210	.12
WBL	1	1700	180	.11*	180	.11*
WBT	3	5100	2330	.46	2150	.44
WBR	0	0	30		100	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.73

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	180	.11*
NBT	1	1700	50	.03	90	.05
NBR	1	1700	240	.14	210	.12
SBL	1	1700	10	.01	30	.02
SBT	1	1700	40	.04*	20	.02*
SBR	0	0	20		10	
EBL	1	1700	10	.01	10	.01
EBT	3	5100	2720	.53*	2260	.44*
EBR	1	1700	580	.34	210	.12
WBL	1	1700	170	.10*	180	.11*
WBT	3	5100	2430	.48	2220	.45
WBR	0	0	20		100	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.73

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	180	.11*
NBT	1	1700	50	.03	90	.05
NBR	1	1700	240	.14	210	.12
SBL	1	1700	10	.01	30	.02
SBT	1	1700	50	.04*	20	.02*
SBR	0	0	20		10	
EBL	1	1700	10	.01	10	.01
EBT	3	5100	2540	.50*	2130	.42*
EBR	1	1700	650	.38	210	.12
WBL	1	1700	170	.10*	180	.11*
WBT	3	5100	2330	.46	2170	.45
WBR	0	0	20		110	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.77		.71

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	140	.08*	180	.11*
NBT	1	1700	50	.03	90	.05
NBR	1	1700	240	.14	210	.12
SBL	1	1700	10	.01	30	.02
SBT	1	1700	50	.04*	20	.02*
SBR	0	0	20		10	
EBL	1	1700	10	.01	10	.01
EBT	3	5100	2620	.51*	2220	.44*
EBR	1	1700	630	.37	210	.12
WBL	1	1700	170	.10*	180	.11*
WBT	3	5100	2380	.47	2130	.44
WBR	0	0	20		110	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.78		.73

28. Associated & Imperial Hwy

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	280	.08*	490	.14*
NBT	2	3400	200	.06	330	.10
NBR	1	1700	30	.02	30	.02
SBL	2	3400	110	.03	170	.05
SBT	2	3400	270	.08*	230	.07*
SBR	1	1700	140	.08	260	.15
EBL	2	3400	150	.04	260	.08*
EBT	3	5100	2170	.45*	1980	.42
EBR	0	0	130		150	
WBL	2	3400	60	.02*	110	.03
WBT	3	5100	1960	.40	2550	.52*
WBR	0	0	60		110	
Right Turn Adjustment					SBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.68		.88

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	280	.08*	500	.15*
NBT	2	3400	200	.06	330	.10
NBR	1	1700	30	.02	30	.02
SBL	2	3400	190	.06	170	.05
SBT	2	3400	320	.09*	230	.07*
SBR	1	1700	140	.08	240	.14
EBL	2	3400	150	.04	290	.09*
EBT	3	5100	2170	.45*	2050	.43
EBR	0	0	130		150	
WBL	2	3400	90	.03*	110	.03
WBT	3	5100	2030	.41	2570	.53*
WBR	0	0	60		150	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.89

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	290	.09*	450	.13*
NBT	2	3400	200	.06	330	.10
NBR	1	1700	40	.02	30	.02
SBL	2	3400	120	.04	170	.05
SBT	2	3400	260	.08*	230	.07*
SBR	1	1700	130	.08	230	.14
EBL	2	3400	150	.04	270	.08*
EBT	3	5100	2140	.45*	1950	.41
EBR	0	0	130		150	
WBL	2	3400	60	.02*	110	.03
WBT	3	5100	1960	.40	2500	.52*
WBR	0	0	60		130	
Right Turn Adjustment					SBR	.01*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.69		.86

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	290	.09*	480	.14*
NBT	2	3400	200	.06	330	.10
NBR	1	1700	30	.02	30	.02
SBL	2	3400	150	.04	170	.05
SBT	2	3400	310	.09*	230	.07*
SBR	1	1700	140	.08	240	.14
EBL	2	3400	150	.04	290	.09*
EBT	3	5100	2170	.45*	2030	.43
EBR	0	0	120		150	
WBL	2	3400	60	.02*	110	.03
WBT	3	5100	2010	.41	2500	.51*
WBR	0	0	60		120	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.70		.86

27. SR-57 NB Ramps & Imperial

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	620	.24	870	.26*
NBT	0.5	3400	80	{.25}*	40	{.02}
NBR	1.5		860		300	{.02}
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	2	3400	140	.04	370	.11
EBL	1	1700	130	.08*	270	.16*
EBT	3	5100	1690	.33	2140	.42
EBR	f		870		890	
WBL	0	0	0		0	
WBT	4	6800	1660	.33*	2380	.47*
WBR	0	0	720	.42	890	.52
Right Turn Adjustment			WBR	.09*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.80		.94

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	820	.24	910	.27*
NBT	0.5	3400	80	{.25}*	40	{.04}
NBR	1.5		860		300	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	2	3400	140	.04	370	.11
EBL	1	1700	130	.08*	270	.16*
EBT	3	5100	1700	.33	2220	.44
EBR	f		860		830	
WBL	0	0	0		0	
WBT	4	6800	1700	.33*	2320	.45*
WBR	0	0	730	.43	950	.56
Right Turn Adjustment			WBR	.10*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.81		.93

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	820	.24	900	.26*
NBT	0.5	3400	80	{.25}*	40	{.03}
NBR	1.5		860		300	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	2	3400	140	.04	370	.11
EBL	1	1700	130	.08*	270	.16*
EBT	3	5100	1660	.33	2110	.41
EBR	f		870		810	
WBL	0	0	0		0	
WBT	4	6800	1610	.32*	2320	.45*
WBR	0	0	780	.46	840	.49
Right Turn Adjustment			WBR	.14*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.84		.92

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	820	.24	950	.28*
NBT	0.5	3400	80	{.25}*	40	{.04}
NBR	1.5		860		300	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	2	3400	140	.04	370	.11
EBL	1	1700	130	.08*	270	.16*
EBT	3	5100	1690	.33	2210	.43
EBR	f		860		820	
WBL	0	0	0		0	
WBT	4	6800	1610	.32*	2250	.44*
WBR	0	0	830	.49	930	.55
Right Turn Adjustment			WBR	.17*		
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.87		.93

26. SR-57 SB Ramps & Imperial

General Plan/MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1200		580	
SBT	0	5100	0	.60*	0	.34*
SBR	1.5		1340		1140	
EBL	0	0	0		0	
EBT	3	5100	1500	.29	2730	.54
EBR	f		1490		1370	
WBL	0	0	0		0	
WBT	3	5100	2240	.44*	3060	.60*
WBR	f		340		630	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.99		.99

General Plan/Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1180		630	
SBT	0	5100	0	.47*	0	.34*
SBR	1.5		1220		1080	
EBL	0	0	0		0	
EBT	3	5100	1520	.30	2690	.53
EBR	f		1460		1330	
WBL	0	0	0		0	
WBT	3	5100	2270	.45*	3050	.60*
WBR	f		350		630	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.97		.99

General Plan Alt./MPAH Network

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1130		530	.31*
SBT	0	5100	0	.48*	0	
SBR	1.5		1300		1110	.33
EBL	0	0	0		0	
EBT	3	5100	1530	.30	2650	.52
EBR	f		1470		1290	
WBL	0	0	0		0	
WBT	3	5100	2200	.43*	3030	.59*
WBR	f		360		570	
Right Turn Adjustment					SBR	.02*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.96		.97

General Plan Alt./Proposed Circ.

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1.5		1160		620	
SBT	0	5100	0	.49*	0	.34*
SBR	1.5		1350		1100	
EBL	0	0	0		0	
EBT	3	5100	1530	.30	2680	.53
EBR	f		1550		1270	
WBL	0	0	0		0	
WBT	3	5100	2180	.43*	3000	.59*
WBR	f		350		630	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				.97		.98

APPENDIX F-7

ICU/LOS CALCULATION WORKSHEETS
WITHOUT PROJECT
2021

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Valencia/Lambert Rd-CarbCyn Rd [2021 WITHOUT PROJECT AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.780
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	48	Level Of Service:	C

Street Name:	Valencia Avenie						Lambert Road/Carbon Canyon Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	1	1 0	1 0	2	1 0	2 0	2	1 0
Volume Module:	>> ~~Count Date: 6 Jan 2004~~ <<											
Base Vol:	80	28	110	20	79	196	18	500	350	1230	2330	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	28	110	20	79	196	18	500	350	1230	2330	10
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	28	0	20	79	196	18	500	350	1230	2330	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	28	0	20	79	196	18	500	350	1230	2330	10
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	80	28	0	20	79	196	18	500	350	1230	2330	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	2.99	0.01
Final Sat.:	1700	3400	1700	1700	1700	1700	1700	3400	1700	3400	5078	22
Capacity Analysis Module:												
Vol/Sat:	0.05	0.01	0.00	0.01	0.05	0.12	0.01	0.15	0.21	0.36	0.46	0.46
Crit Moves:	****					****			****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Valencia Ave/Rose St-BirchStreet [2021 WITHOUT PROJECT-AM PEAK-P

Cycle (sec):	100	Critical Vol./Cap. (X):	0.693
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Valencia Avenue						Rose St/BirchStreet					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	1	1 0	1 0	2	0 1	1 0	1	1 0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT AM PK HR-PROP CIRC												
Base Vol:	50	66	40	498	1156	120	40	790	120	10	510	198
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	66	40	498	1156	120	40	790	120	10	510	198
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	66	40	498	1156	120	40	790	120	10	510	198
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	66	40	498	1156	120	40	790	120	10	510	198
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	66	40	498	1156	120	40	790	120	10	510	198
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.81	0.19	1.00	2.00	1.00	1.00	1.44	0.56
Final Sat.:	1700	3400	1955	1700	3080	320	1700	3400	1955	1700	2449	951
Capacity Analysis Module:												
Vol/Sat:	0.03	0.02	0.02	0.29	0.38	0.38	0.02	0.23	0.06	0.01	0.21	0.21
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Valencia Avenue/Imperial Hwy. [2021 WITHOUT PROJECT-AM PEAK]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.981
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Valencia Avenue						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0	1	1 0 2	0	1	2 0 3	0	1	1 0 2	1	0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT PROJECT-AM PEAK-PROP CI												
Base Vol:	100	127	120	628	407	81	92	1440	70	370	2080	118
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	127	120	628	407	81	92	1440	70	370	2080	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	127	120	628	407	81	92	1440	70	370	2080	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	127	120	628	407	81	92	1440	70	370	2080	118
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	127	120	628	407	81	92	1440	70	370	2080	118
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	1.00	2.84	0.16
Final Sat.:	1700	3400	1955	1700	3400	1955	3400	5100	1955	1700	4826	274
Capacity Analysis Module:												
Vol/Sat:	0.06	0.04	0.06	0.37	0.12	0.04	0.03	0.28	0.04	0.22	0.43	0.43
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Kraemer Blvd [2021 WITHOUT PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.893
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	83	Level Of Service:	D

Street Name:	Kraemer Blvd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	1	0	2 0 2	1	0	2 0 2	1	0	2 0 3	0	1
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT PROJECT-AM PEAK-PROP CI												
Base Vol:	210	460	125	330	1500	460	290	1406	460	105	1476	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	460	125	330	1500	460	290	1406	460	105	1476	420
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	460	125	330	1500	460	290	1406	460	105	1476	420
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	460	125	330	1500	460	290	1406	460	105	1476	420
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	210	460	125	330	1500	460	290	1406	460	105	1476	420
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22
Lanes:	2.00	2.36	0.64	2.00	2.30	0.70	2.00	2.26	0.74	2.00	3.00	1.00
Final Sat.:	3400	4010	1090	3400	3903	1376	3400	3843	1257	3400	5100	1955
Capacity Analysis Module:												
Vol/Sat:	0.06	0.11	0.11	0.10	0.38	0.33	0.09	0.37	0.37	0.03	0.29	0.21
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial Hwy & Placentia Ave [2021 WITHOUT PROJECT AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.799
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	52	Level Of Service:	C

Street Name:	Placentia Ave						Imperial Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 0	1	1 0	2 1	0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT - PROP CIRC												
Base Vol:	140	50	240	10	40	20	10	2646	580	170	2356	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	50	240	10	40	20	10	2646	580	170	2356	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	50	240	10	40	20	10	2646	580	170	2356	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	50	240	10	40	20	10	2646	580	170	2356	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	140	50	240	10	40	20	10	2646	580	170	2356	20
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	1.00	1.00	1.00	0.67	0.33	1.00	3.00	1.00	1.00	2.97	0.03
Final Sat.:	1696	1696	1954	1696	1131	565	1696	5088	1954	1696	5045	43
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.12	0.01	0.04	0.04	0.01	0.52	0.30	0.10	0.47	0.47
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Imperial hwy & Associated Road [2021 WITHOUT PROJECT-AM PEAK]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.689
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	36	Level Of Service:	B

Street Name:	Associated Rd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0	1	2 0 2	0	1	2 0 2	1	0	2 0 2	1	0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 W/PROJECT- PROP CIRC												
Base Vol:	280	200	30	190	320	140	150	2096	130	90	1956	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	200	30	190	320	140	150	2096	130	90	1956	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	200	30	190	320	140	150	2096	130	90	1956	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	200	30	190	320	140	150	2096	130	90	1956	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	280	200	30	190	320	140	150	2096	130	90	1956	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.82	0.18	2.00	2.91	0.09
Final Sat.:	3400	3400	1700	3400	3400	1955	3400	4802	343	3400	4948	152
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.02	0.06	0.09	0.07	0.04	0.44	0.38	0.03	0.40	0.40
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Imperial Hwy @ SR 57 SB Off-Ramp [2021 WITHOUT PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.962
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	147	Level Of Service:	E

Street Name:	SR 57 Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	1 0	1! 0	1	0 0	3 0	0	0 0	3 0	0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK-PROP CIRC												
Base Vol:	0	0	0	1159	0	1220	0	1520	0	0	2270	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1159	0	1220	0	1520	0	0	2270	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1159	0	1220	0	1520	0	0	2270	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1159	0	1220	0	1520	0	0	2270	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1159	0	1220	0	1520	0	0	2270	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	0.00	0.00	0.00	1.46	0.00	1.54	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	2485	0	2615	0	5100	0	0	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.47	0.00	0.47	0.00	0.30	0.00	0.00	0.45	0.00
Crit Moves:				****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Imperial Hwy @NB57 Off-Ramp [2021 WITHOUT PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.804
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	53	Level Of Service:	D

Street Name:	SR57 NB Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	1 1	0 0	0	0 2	1 0	3	0 1	0 0	3	1 0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT PROJECT												
Base Vol:	820	80	807	0	0	140	130	1679	860	0	1647	709
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	820	80	807	0	0	140	130	1679	860	0	1647	709
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	820	80	807	0	0	140	130	1679	0	0	1647	709
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	820	80	807	0	0	140	130	1679	0	0	1647	709
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	820	80	807	0	0	140	130	1679	0	0	1647	709
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.00	0.18	1.82	0.00	0.00	2.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3400	307	3557	0	0	3400	1700	5100	1700	0	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.24	0.26	0.23	0.00	0.00	0.04	0.08	0.33	0.00	0.00	0.32	0.42
Crit Moves:		****		****			****					****

APPENDIX F-8

ICU/LOS CALCULATION WORKSHEETS
WITH PROJECT
2021

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Valencia/Lambert Rd-CarbCyn Rd [2021 WITH PROJECT AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.807
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	D

Street Name:	Valencia Avenie						Lambert Road/Carbon Canyon Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	2 1	0	2 0	2 1	0
Volume Module: >> ~~Count Date: 6 Jan 2004~~ <<												
Base Vol:	80	220	110	20	271	214	70	500	350	1230	2330	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	80	220	110	20	271	214	70	500	350	1230	2330	10
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	80	220	0	20	271	214	70	500	350	1230	2330	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	220	0	20	271	214	70	500	350	1230	2330	10
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	80	220	0	20	271	214	70	500	350	1230	2330	10
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.12	0.88	1.00	2.00	1.00	2.00	2.99	0.01
Final Sat.:	1700	3400	1700	1700	1900	1500	1700	3400	1700	3400	5078	22
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.00	0.01	0.14	0.14	0.04	0.15	0.21	0.36	0.46	0.46
Crit Moves:	****				****				****	****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Valencia Ave/Rose St-BirchStreet [2021 WITH PROJECT-AM PEAK-PROP

Cycle (sec):	100	Critical Vol./Cap. (X):	0.748
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	C

Street Name:	Valencia Avenue						Rose St/BirchStreet					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	1	1 0	1 0	2	0 1	1 0	1	1 0
Volume Module: >> ~~Count Date: 6 Jan 2004~~ <<												
Base Vol:	50	254	40	502	1344	120	40	790	120	10	510	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	50	254	40	502	1344	120	40	790	120	10	510	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	50	254	40	502	1344	120	40	790	120	10	510	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	50	254	40	502	1344	120	40	790	120	10	510	202
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	50	254	40	502	1344	120	40	790	120	10	510	202
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	1.84	0.16	1.00	2.00	1.00	1.00	1.43	0.57
Final Sat.:	1700	3400	1955	1700	3121	279	1700	3400	1955	1700	2435	965
Capacity Analysis Module:												
Vol/Sat:	0.03	0.07	0.02	0.30	0.43	0.43	0.02	0.23	0.06	0.01	0.21	0.21
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Valencia Avenue/Imperial Hwy. [2021 WITH PROJECT-AM PEAK]

Cycle (sec):	100	Critical Vol./Cap. (X):	1.027
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Valencia Avenue						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	2	0 1	2 0	3	0 1	1 0	2	1 0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK												
Base Vol:	100	133	120	652	413	239	329	1440	70	370	2080	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	133	120	652	413	239	329	1440	70	370	2080	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	133	120	652	413	239	329	1440	70	370	2080	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	133	120	652	413	239	329	1440	70	370	2080	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	133	120	652	413	239	329	1440	70	370	2080	142
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	1.00	2.81	0.19
Final Sat.:	1700	3400	1955	1700	3400	1955	3400	5100	1955	1700	4774	326
Capacity Analysis Module:												
Vol/Sat:	0.06	0.04	0.06	0.38	0.12	0.12	0.10	0.28	0.04	0.22	0.44	0.44
Crit Moves:			****	****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Kraemer Blvd [2021 WITH PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.925
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	104	Level Of Service:	E

Street Name:	Kraemer Blvd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2	1 0	2 0	2	1 0	2 0	2	1 0	2 0	3	0 1
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK-PROP CIRC												
Base Vol:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	460	135	330	1500	460	290	1554	460	115	1624	420
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	460	135	330	1500	460	290	1554	460	115	1624	420
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.22
Lanes:	2.00	2.32	0.68	2.00	2.30	0.70	2.00	2.31	0.69	2.00	3.00	1.00
Final Sat.:	3400	3943	1157	3400	3903	1197	3400	3935	1165	3400	5100	1955
Capacity Analysis Module:												
Vol/Sat:	0.06	0.12	0.12	0.10	0.38	0.38	0.09	0.39	0.39	0.03	0.32	0.21
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial Hwy & Placentia Ave [2021 WITH PROJECT AM PK HR]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.828
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	59	Level Of Service:	D

Street Name:	Placentia Ave						Imperial Hwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	3 0	1	1 0	2 1	0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITHOUT - PROP CIRC												
Base Vol:	140	50	240	10	40	20	10	2794	580	170	2504	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	50	240	10	40	20	10	2794	580	170	2504	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	140	50	240	10	40	20	10	2794	580	170	2504	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	140	50	240	10	40	20	10	2794	580	170	2504	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	140	50	240	10	40	20	10	2794	580	170	2504	20
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	1.00	1.00	1.00	0.67	0.33	1.00	3.00	1.00	1.00	2.98	0.02
Final Sat.:	1696	1696	1954	1696	1131	565	1696	5088	1954	1696	5048	40
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.12	0.01	0.04	0.04	0.01	0.55	0.30	0.10	0.50	0.50
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Imperial hwy & Associated Road [2021 WITH PROJECT-AM PEAK]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.718
Loss Time (sec):	5 (Y+R = 4 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	39	Level Of Service:	C

Street Name:	Associated Rd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	2 1	0	2 0	2 1	0
Volume Module:	~~>> Count Date: 1 Jan 2000~~ << 2021 W/PROJECT- PROP CIRC											
Base Vol:	280	200	30	190	320	140	150	2244	130	90	2104	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	200	30	190	320	140	150	2244	130	90	2104	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	200	30	190	320	140	150	2244	130	90	2104	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	200	30	190	320	140	150	2244	130	90	2104	60
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	280	200	30	190	320	140	150	2244	130	90	2104	60
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.84	0.16	2.00	2.92	0.08
Final Sat.:	3400	3400	1955	3400	3400	1955	3400	4821	321	3400	4959	141
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.02	0.06	0.09	0.07	0.04	0.47	0.40	0.03	0.42	0.42
Crit Moves:	****				****			****			****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Imperial Hwy @ SR 57 SB Off-Ramp [2021 WITH PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.970
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	162	Level Of Service:	E

Street Name:	SR 57 Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	1	0	1! 0 1	0	0	3 0 0	0	0	3 0 0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK-PROP CIRC												
Base Vol:	0	0	0	1201	0	1220	0	1520	0	0	2270	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1201	0	1220	0	1520	0	0	2270	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	1201	0	1220	0	1520	0	0	2270	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1201	0	1220	0	1520	0	0	2270	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	1201	0	1220	0	1520	0	0	2270	0
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	0.00	0.00	0.00	1.49	0.00	1.51	0.00	3.00	0.00	0.00	3.00	0.00
Final Sat.:	0	0	0	2530	0	2570	0	5100	0	0	5100	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.47	0.00	0.47	0.00	0.30	0.00	0.00	0.45	0.00
Crit Moves:				****			****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #5 Imperial Hwy @NB57 Off-Ramp [2021 WITH PROJECT]

Cycle (sec):	100	Critical Vol./Cap. (X):	0.860
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	D

Street Name:	SR57 NB Off-Ramp						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	1 1	0 0	0	0 2	1 0	3	0 1	0 0	3	1 0
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK												
Base Vol:	820	80	913	0	0	140	130	1721	860	0	1753	751
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	820	80	913	0	0	140	130	1721	860	0	1753	751
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	820	80	913	0	0	140	130	1721	0	0	1753	751
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	820	80	913	0	0	140	130	1721	0	0	1753	751
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	820	80	913	0	0	140	130	1721	0	0	1753	751
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Lanes:	2.00	0.16	1.84	0.00	0.00	2.00	1.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3400	274	3595	0	0	3400	1700	5100	1700	0	5100	1700
Capacity Analysis Module:												
Vol/Sat:	0.24	0.29	0.25	0.00	0.00	0.04	0.08	0.34	0.00	0.00	0.34	0.44
Crit Moves:		****		****			****					****

APPENDIX F-9

ICU/LOS CALCULATION WORKSHEETS
PROJECT MITIGATION

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #7 Imperial hwy & Kraemer Blvd [2021 W/PROJECT W/MITIG]

Cycle (sec): 100 Critical Vol./Cap. (X): 0.882
Loss Time (sec): 5 (Y+R = 4 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 77 Level Of Service: D

Street Name:	Kraemer Blvd.						Imperial Hwy.					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	1	0	2 0 2	1	0	2 0 3	0	1	2 0 3	1	0
Volume Module: >> Count Date: 1 Jan 2000 << 2021 WITH PROJECT-AM PEAK-PROP CIRC												
Base Vol:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	460	135	330	1500	460	290	1554	460	115	1624	420
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	460	135	330	1500	460	290	1554	460	115	1624	420
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	210	460	135	330	1500	460	290	1554	460	115	1624	420
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.22
Lanes:	2.00	2.32	0.68	2.00	2.30	0.70	2.00	3.00	1.00	2.00	3.18	0.82
Final Sat.:	3400	3943	1157	3400	3903	1197	3400	5100	1700	3400	5403	1607
Capacity Analysis Module:												
Vol/Sat:	0.06	0.12	0.12	0.10	0.38	0.38	0.09	0.30	0.27	0.03	0.30	0.26
Crit Moves:	****				****		****				****	

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Valencia Avenue/Imperial Hwy. [2021 W/ PROJECT-AM PK-WITH MITIG.

Cycle (sec):	100	Critical Vol./Cap. (X):	0.836
Loss Time (sec):	5 (Y+R = 0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	61	Level Of Service:	D

Street Name:	Valencia Avenue						Imperial Highway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0 1		2 0 1	1 0		2 0 3	0 1		1 0 2	1 0	
Volume Module: >> ~~Count Date: 1 Jan 2000~~ << 2021 WITH PROJECT-AM PEAK												
Base Vol:	100	133	120	652	413	239	329	1440	70	370	2080	142
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	133	120	652	413	239	329	1440	70	370	2080	142
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	133	120	652	413	239	329	1440	70	370	2080	142
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	133	120	652	413	239	329	1440	70	370	2080	142
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	100	133	120	652	413	239	329	1440	70	370	2080	142
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.22	1.06	1.06	1.06
Lanes:	1.00	2.00	1.00	2.00	1.27	0.73	2.00	3.00	1.00	1.00	2.81	0.19
Final Sat.:	1700	3400	1955	3400	2154	1433	3400	5100	1955	1700	4774	326
Capacity Analysis Module:												
Vol/Sat:	0.06	0.04	0.06	0.19	0.19	0.17	0.10	0.28	0.04	0.22	0.44	0.44
Crit Moves:			****	****			****				****	

Fair Share Analysis

Valencia Avenue @ Imperial Highway

Total of Project Trips (Figure 5.4-8)

79+3+12+12+79+3=188

Existing Traffic (Figure 5.4-4)

182+179+126+183+1483+117+88+171+92+238+856+55=3,770

Future (Figure 5.4-11)

160+410+640+130+2080+370+250+1440+70+100+130+120=5,810

PerCent Share = 188/(5810-3770)=0.092

Percent Share = 9.2%

APPENDIX G
AIR QUALITY ANALYSIS

AIR QUALITY ANALYSIS

REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY

OLINDA ALPHA LANDFILL EXPANSION

Submitted to:

County of Orange Integrated Waste Management Department

Prepared by:

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LSA Project No. PND830A

LSA

May 13, 2004

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1.0 INTRODUCTION

1.1 OVERVIEW

The Regional Landfill Options for Orange County (RELOOC) effort is a long-range strategic planning program initiated by the County of Orange's (County) Integrated Waste Management Department (IWMD). The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short- and long-term solid waste disposal options for the County. As part of that endeavor, the County is considering a number of short-term improvements to existing municipal solid waste landfills operated by the County's IWMD. The proposed project includes the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's short-term solid waste disposal needs.

The air quality impact analysis analyzes the potential air quality impacts associated with the proposed continued operation of the Olinda Alpha Landfill from 2013 to the estimated horizon of year 2021. The potential environmental impacts associated with the current landfill operations through 2013 were analyzed in the Final EIR for the North Orange County Landfill and Alternatives Technology Study (NOCLATS) certified in 1992.

1.2 OLINDA ALPHA LANDFILL

The Olinda Alpha Landfill is located at 1942 N. Valencia Avenue in northern Orange County immediately north of the City of Brea. This landfill opened in 1960. The site is comprised of 565 acres with approximately 420 acres permitted for refuse disposal. The landfill is open Monday through Saturday from 6:00 a.m. to 7:00 a.m. for transfer trucks only and 7:00 a.m. to 4:00 p.m. for all commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is limited to Orange County residents. Only municipal solid waste (MSW) is accepted at the landfill, although limited special wastes (i.e., tires) also are accepted. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted at this landfill.

A Memorandum of Understanding (MOU) between the County and the City of Brea limits daily waste disposal to an annual average of 7,000 tons per day (TPD). However, the Olinda Alpha Landfill's Solid Waste Facility Permit (SWFP) currently allows a daily maximum of 8,000 TPD of MSW.

The landfill is required to comply with numerous landfill regulations from federal, State, and local regulatory agencies. The landfill is also subject to regular inspections from the California Integrated Waste Management Board (CIWMB), the Board's Local Enforcement Agency (LEA), the Regional Water Quality Control Board (RWQCB), and the South Coast Air quality Management Board (SCAQMD) to assure compliance with applicable regulations. The current closure date for the landfill is December 2013.

2.0 DESCRIPTION OF PROJECT ALTERNATIVES

2.1 INTRODUCTION

The objectives of the proposed project to expand the Olinda Alpha Landfill were derived from the RELOOC study goals and objectives and the RELOOC planning process and are as follows:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.
- Ensure that the County's near term waste disposal needs are met.
- Maximize capacity of the existing Olinda Alpha Landfill.
- Maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees
- Maintain efficient, cost effective and high quality IWMD operations.
- Minimize adverse environmental impacts associated with solid waste disposal.

2.2 PROPOSED PROJECT

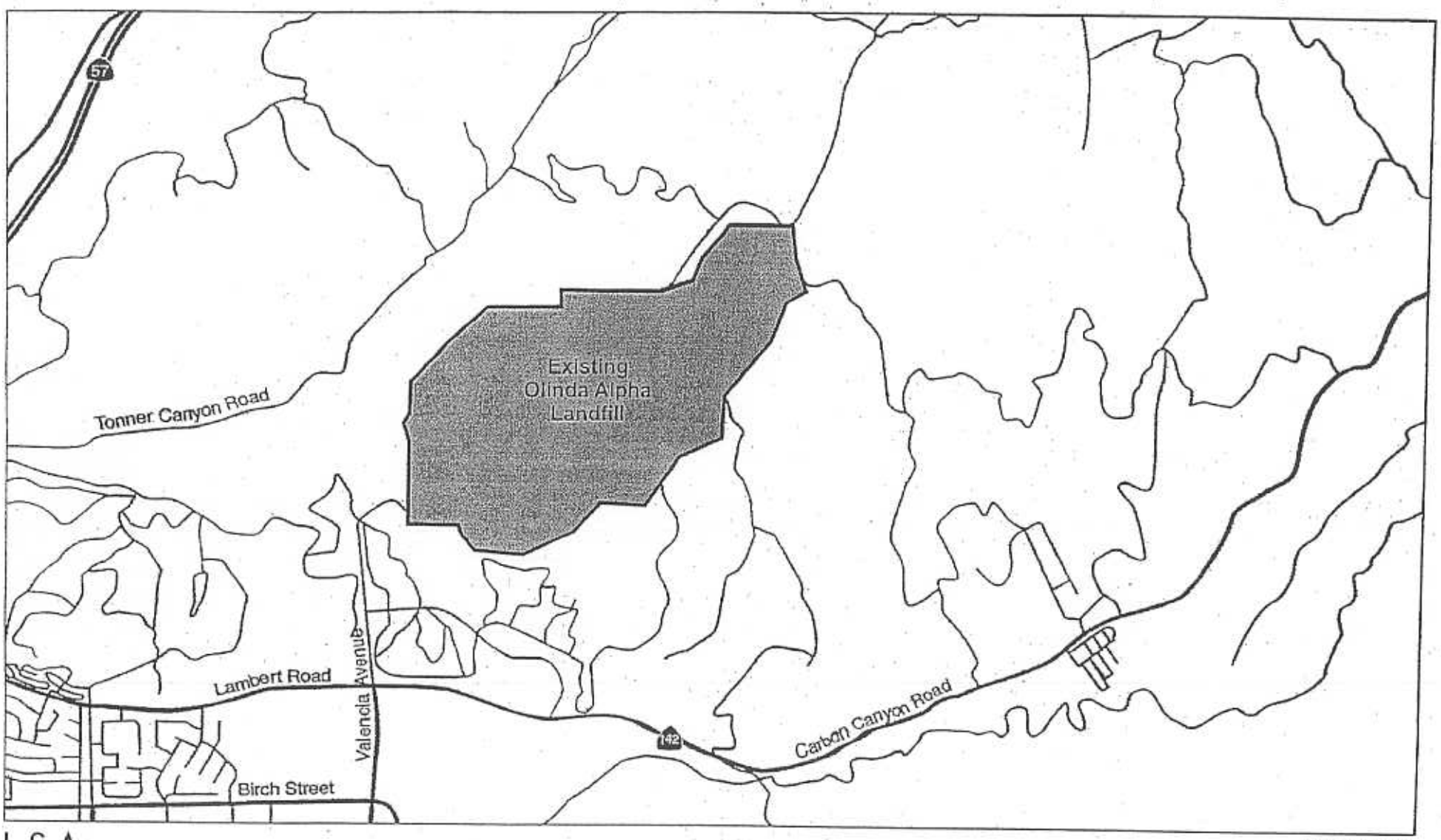
Project Location

The Olinda Alpha Landfill is located at 1942 N. Valencia Avenue in northern Orange County, immediately north of the City of Brea. Figure 1 shows the location of the Olinda Alpha Landfill.

Project Description

The proposed project includes both a vertical and horizontal expansion of Olinda Alpha Landfill disposal prism. No change in the landfill property boundary is proposed.

Proposed Modifications. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (amsl) to 1,415 feet above amsl, or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill site. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill. Parts of the horizontal expansion would occur only in areas that have already been disturbed by landfill operations. Figure 2 shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 3 shows the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project.



LSA

FIGURE 1

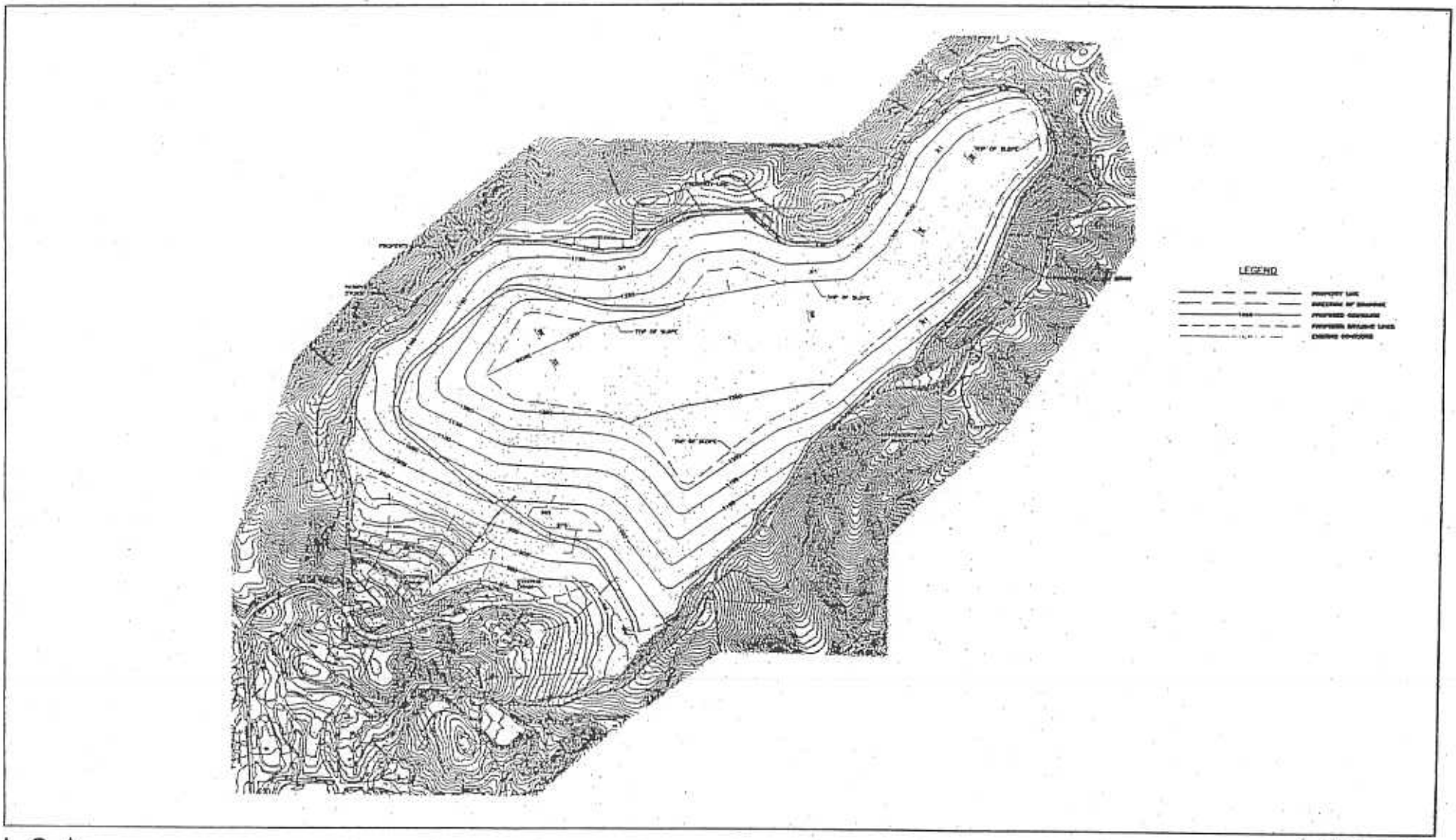
N

NOT TO SCALE

Relooc Strategic Plan

Location Map

I:\PND830\G\Location.cdr (2/19/04)



LSA

FIGURE 2

N

0 600 1200

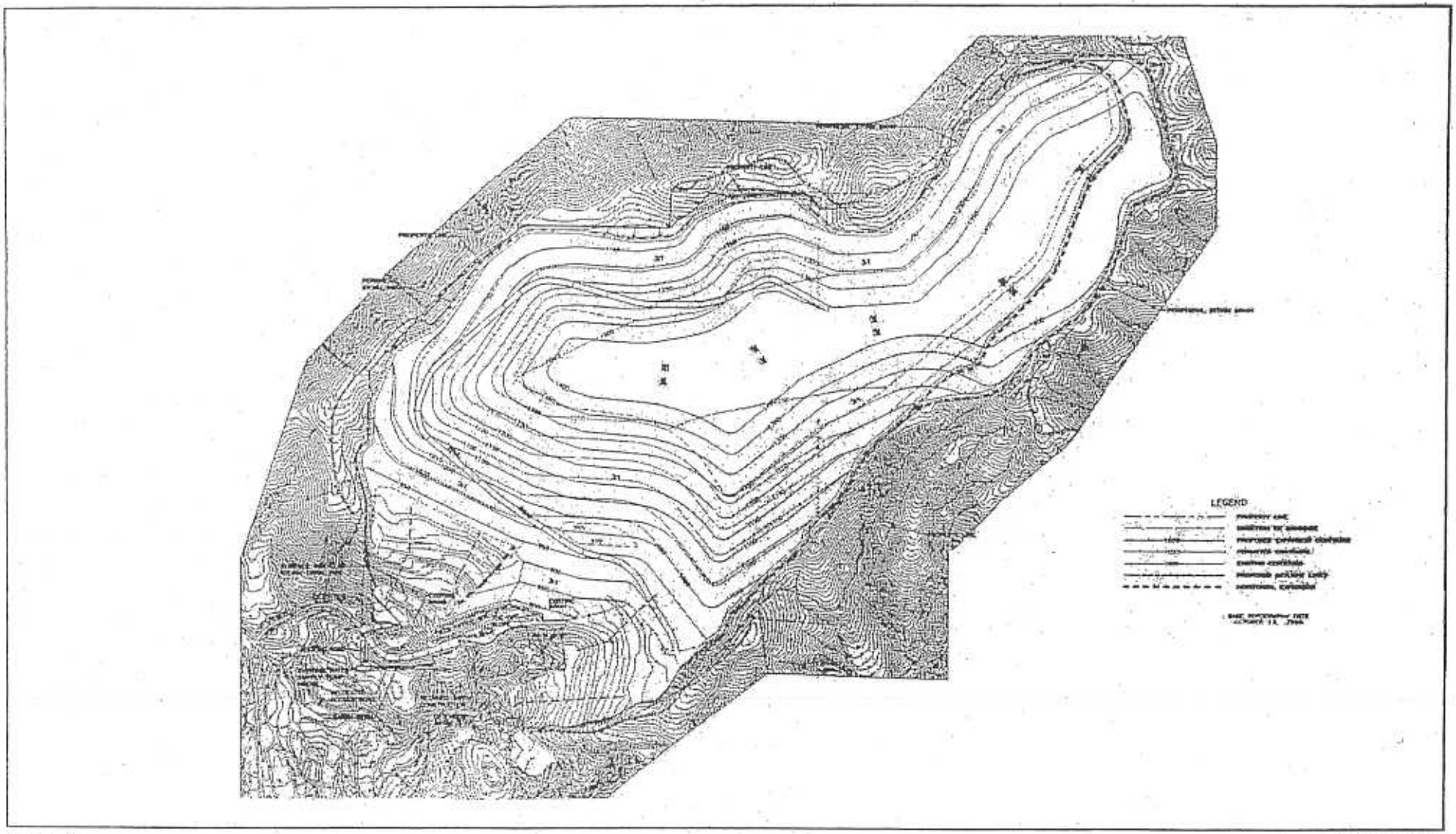
FEET

SOURCE: Bryan A. Stirrat & Associates

Relooc Strategic Plan

Current Permitted Limits

I:\PND830\GPermitted_limits.cdr (2/19/04)



LSA

FIGURE 3

N

0 600 1200
FEET

SOURCE: Bryan A. Stirrat & Associates

Relooc Strategic Plan

Proposed Expansion Plan Map

I:\PND830\GProposed_exp.cdr (2/19/04)

The expanded landfill would ultimately accommodate disposal of an additional 14.2 million tons (MT) of MSW assuming a 5:1 refuse-to-soil ratio and 1,333 lb/cy refuse density. This additional capacity would extend the life of the Olinda Alpha Landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, approved landfill elevations and existing disposal technologies. The proposed project would not result in any increase to either the maximum daily permitted tonnage or the annual average daily tonnage limits for this landfill.

Phasing. The expansion of the Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill site at once. On-site soil to be utilized for daily cover, road construction, and other related uses is available at the Olinda Alpha Landfill through 2015. The site currently accepts dirt and continues to stockpile on site for future cover use. When on-site soil for cover is depleted at the Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015. Fill and cover techniques at the landfill would be similar to the methods currently employed. Waste would be deposited, compacted, and covered daily using appropriate landfilling methods.

Waste Composition. The waste composition at the Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Non-hazardous MSW would comprise the waste stream, and existing screening safety mechanisms would continue to be employed to ensure that hazardous materials are not accepted. Access to Olinda Alpha Landfill would remain unchanged, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions. The additional traffic associated with soil import for cover use at Olinda Alpha Landfill by the year 2015 would be offset by the cessation of refuse importation.

Other Project Features. The project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional gas control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Employees would continue to perform landfill operations including administration, landfill cover operations, and other landfill-related operations. The number and types of equipment utilized at the Olinda Alpha Landfill also would remain unchanged. The operating schedule at the landfill would remain unchanged after implementation of the proposed project.

Surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate expansion of the Olinda Alpha Landfill.

PROJECT ALTERNATIVES

Alternative 1—No Project (No Action) Alternative

The No Project Alternative would include no action by the County of Orange. Under this Alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. The landfill would continue to operate at its existing permitted capacity with no increase in long term physical capacity or daily tonnage received. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 TPD of MSW under an MOU between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative, importation of waste into the Orange County disposal system will end in 2013 when landfilling at the Olinda Alpha Landfill terminates. Upon its closure, approximately 1,000 TPD of MSW, which is in excess of what could be accommodated at the Frank R. Bowerman (FRB) and Prima Deshecha Landfills, would have to be accommodated at landfills outside of Orange County. The projected excess TPD of MSW to be exported out of County is based on population projections for the system demand by 2021 (the horizon year for this EIR).

Out-of-County landfills would have to be permitted to accept the excess tonnage from Orange County and may include El Sobrante Landfill in Riverside County, the Mid-Valley Landfill in San Bernardino County and/or a rail haul facility.

Alternative 2—Two-Landfill System In 2013 (Prima Deschecha Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at Prima Deshecha Landfill from 4,000 TPD to 5,000 TPD when Olinda Alpha Landfill closes in 2013.
- Permitted TPD at FRB Landfill will remain at 8,500 TPD when Olinda Alpha Landfill closes in 2013.
- Olinda Alpha Landfill continues to accept an annual average of 7,000 TPD until its closure date in 2013.
- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.
- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1-R5).

Alternative 2 proposes increasing the current permitted TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth and factors in the lower total tonnage with importation ceasing in 2013. At FRB Landfill, the permitted TPD received would remain unchanged at 8,500 TPD. Based on the RELOOC Demand

model approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 2.

Under Alternative 2, no expansion or extension of the Olinda Alpha Landfill closure date would occur. All importation of out-of-County MSW would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. The Prima Deshecha Landfill 2001 General Development Plan (GDP) remaining refuse capacity would remain unchanged at 77.6 million tons (MT) as of 2001 GDP. However, the incremental increase of the Prima Deshecha Landfill in-flow waste stream from 4,000 TPD to a permitted limit of 5,000 TPD would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years in the life of Prima Deshecha Landfill under Alternative 2.

Under Alternative 2, the number of truck trips to Prima Deshecha Landfill would increase although the period over which those would occur would be reduced by 11 years because the life of the landfill would be shortened under this Alternative.

Under Alternative 2, the existing County MOU with the City of San Juan Capistrano would need to be amended prior to 2013 to provide for the increase in permitted daily tonnage. Similarly, permits currently in-place with the California Integrated Waste Management Board (CIWMB) and other regulatory agencies with jurisdictional oversight for Prima Deshecha Landfill would need to be amended.

Alternative 3—Two Landfill System In 2013 (Frank R. Bowerman Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes in 2013.
- Permitted TPD at Prima Deshecha Landfill remains at 4,000 TPD when Olinda Alpha Landfill closes in 2013.
- Olinda Alpha Landfill continues to accept up to 7,000 TPD until its closure date in 2013.
- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.
- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1-R5).

Alternative 3 proposes increasing the current permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth and factors in the lower total tonnage with importation ceasing in 2013. The permitted TPD at Prima Deshecha Landfill would remain unchanged at 4,000 TPD. Based on the RELOOC Demand

model, approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 3.

Under Alternative 3, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All out-of-County importation of MSW would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of FRB Landfill is 2022. Alternative 3 would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill results in a net reduction of one year of life at this landfill which just meets the horizon year goal of 2021 for this EIR. After 2021, the County would have one remaining landfill in their system. Under Alternative 3, the number of truck trips to the FRB Landfill would increase although the duration of the trips would be reduced because the life of the landfill would be shortened by one year.

Under Alternative 3, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased permitted daily tonnage. Similarly, existing permits with the CIWMB and other regulatory agencies with jurisdictional oversight for these landfills would need to be amended.

3.0 EXISTING CONDITIONS

3.1 AFFECTED ENVIRONMENT

3.1.1 Regional Air Quality

The project site is located in northern Orange County, which is part of the South Coast Air Basin (SCAB or Basin), and is under the jurisdiction of the SCAQMD. Therefore, the impact analysis contained in this section was prepared in accordance with the methodologies provided by the SCAQMD in its 1993 *CEQA Air Quality Handbook* and the California Department of Transportation (Caltrans) *Transportation Project Level Carbon Monoxide Protocol* (Caltrans, May 1996, updated December 1997).

Both the State of California and the federal government have established health-based ambient air quality standards (AAQS) for six air pollutants. As shown in Table 3.A, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), suspended coarse particulate matter equal to or less than 10 microns in diameter (PM_{10}), and lead. In July 1997, the Environmental Protection Agency (EPA) adopted new standards for eight-hour O_3 levels and for fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State of California has established a set of episode criteria for O_3, CO, NO_2, SO_2, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. Table 3.B lists the health effects of these criteria pollutants and their potential sources. These health effects would not occur unless the standards were exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS.

The California Clean Air Act (CCAA) provides the SCAQMD with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this would be motor vehicles at an intersection, a mall, and on highways. The SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

Table 3.A: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[2,5]	Secondary[2,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	–		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation*	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 µg/m^3*		50 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	12 µg/m^3*	Gravimetric or Beta Attenuation*	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Nondispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Nondispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	–	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.25 ppm (470 µg/m^3)		–		
Lead	30-day average	1.5 µg/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	–	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		–	–	
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more (0.07–30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24-Hour	25 µg/m3	Ion Chromatography*			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Cloride[9]	24-Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

Source: ARB (July 2003).

Footnotes:

[1] California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1 and 24 hour); nitrogen dioxide; suspended particulate matter, PM_{10}, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25º C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25º C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

[8] New federal eight-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18, 1997. Contact the U.S. EPA for further clarification and current federal policies.

[9] The ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Table 3.B: Health Effects Summary of the Major Criteria Air Pollutants

Pollutants	Sources	Primary Effects
Ozone (O_3)	Atmospheric reaction of organic gases with nitrogen oxides in the presence of sunlight.	Aggravation of respiratory and cardiovascular diseases. Irritation of eyes. Impairment of cardiopulmonary function. Plant leaf injury.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust. High temperature stationary combustion. Atmospheric reactions.	Aggravation of respiratory illness. Reduced visibility. Reduced plant growth. Formation of acid rain.
Carbon Monoxide (CO)	By-products from incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. Natural Events, such as decomposition of organic matter.	Reduced tolerance for exercise. Impairment of mental function. Impairment of fetal development. Death at high levels of exposure. Aggravation of some heart diseases (angina).
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	Stationary combustion of solid fuels. Construction activities. Industrial processes. Atmospheric chemical reactions.	Reduced lung function. Aggravation of the effects of gaseous pollutants. Aggravation of respiratory and cardiorespiratory diseases. Increased cough and chest discomfort. Soiling. Reduced visibility.
Sulfur Dioxide (SO_2)	Combustion of sulfur-containing fossil fuels. Smelting of sulfur-bearing metal ores. Industrial processes.	Aggravation of respiratory diseases (asthma, emphysema). Reduced lung function. Irritation of eyes. Reduced visibility. Plant injury. Deterioration of metals, textiles, leather, finishes, coatings, etc.
Lead (Pb)	Contaminated soil (e.g., from leaded fuels and lead-based paints).	Impairment of blood function and nerve construction. Behavioral and hearing problems in children.

Source: ARB 2001.

3.1.2 Climate/Meteorology

Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc.

The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the SCAB the worst air pollution problem in the nation.

Climate in the SCAB is determined by its terrain and geographical location. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the SCAB. The SCAB lies in the semi-permanent high pressure zone of the eastern Pacific; the resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s measured in degrees Fahrenheit. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station closest to the site is the Yorba Linda station (Brea).[1] The monthly average maximum temperature recorded at the Yorba Linda station from July 1948 to July 2003, ranged from 67.4° F in January to 89.2° F in August, with an annual average maximum of 77.5° F. The monthly average minimum temperature recorded at the Yorba Linda station from July 1948 to July 2003 ranged from 42.0° F in January to 58.7° F in August, with an annual average minimum of 49.6° F. January is typically the coldest month and August the warmest in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Yorba Linda climatological station also monitors precipitation. Average monthly rainfall measured in Yorba Linda from July 1948 to July 2003 varied from 3.36 inches in January to 0.27 inch or less between May and October, with an annual total of 13.89 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the SCAB has a semiarid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8 to 12 miles per hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the SCAB. Summer wind flow patterns represent worst-case conditions, as this is the period of higher temperatures and more sunlight, which results in ozone formation.

[1] Western Regional Climate Center, wrcc@dri.edu.

During spring and early summer, pollution produced during any one day is typically blown out of the SCAB through mountain passes or lifted by warm vertical currents adjacent to mountain slopes. Air contaminants can be transported 60 miles or more from the SCAB by ocean air during the afternoons. From early fall to winter, the transport is less pronounced because of slower average wind speed and the appearance of drainage winds earlier in the day. During stagnant wind conditions, offshore drainage winds may begin by late afternoon. Pollutants remaining in the SCAB are trapped and begin to accumulate during the night and the following morning. A low morning wind speed in pollutant source areas is an important indicator of air stagnation and the build-up potential for primary air contaminants.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the SCAB, and are about 25 percent more likely along the coast. The vertical dispersion of air pollutants in the SCAB is limited by temperature inversions in the atmosphere close to the earth's surface.

Inversions are generally lower in the nighttime when the ground is cool than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle to late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive contaminant build-up.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. In the winter, the greatest pollution problem is accumulation of carbon monoxide and oxides of nitrogen due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form photochemical smog.

3.1.3 Air Pollution Constituents and Attainment Status

The following describes the six criteria air pollutants and their attainment status in the SCAB based on ARB's Area Designations, Activities, and Maps (ARB 2003). Table 3.C summarizes the attainment status in the South Coast Air Basin for these criteria pollutants.

Table 3.C: Criteria Pollutants Attainment Status in the South Coast Air Basin

	State	Federal
Ozone (one-hour)	Nonattainment	Extreme Nonattainment
Ozone (eight-hour)	Not Applicable	Nonattainment (Preliminary)
PM_{10}	Nonattainment	Serious Nonattainment
$PM_{2.5}$	Not Applicable	Nonattainment (Preliminary)
CO	Nonattainment (Los Angeles County only)	Nonattainment
NO_2	Attainment	Attainment/Maintenance
Lead	Attainment	Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resources Board 2003.

Ozone. O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases rather than being directly emitted from a source. O_3 is a pungent colorless gas typical of Southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall. The entire SCAB is designated as a nonattainment area for both the federal and State one-hour O_3 standards. The EPA has classified the SCAB as an "extreme" nonattainment area for O_3 and has mandated that the SCAB achieve attainment by 2010. The entire SCAB is expected to be designated as a nonattainment area for the federal eight-hour O_3 standard based on the collected ambient air quality data.

Carbon Monoxide. Carbon monoxide (CO) is formed by the incomplete combustion of fossil fuels and is generated almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The entire SCAB is designated as a nonattainment area for federal CO AAQS. However, Orange County has not exceeded the federal CO standards in the past five years. Orange County has been designated by ARB to be an attainment area for State CO AAQS.

Nitrogen Oxides. Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of photochemical smog. It also contributes to other pollution, including a high concentration of fine particulate matter, poor visibility, and acid deposition (acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire SCAB has not exceeded either federal or State AAQS for NO_X in the past five years according to published monitoring data. It is designated as a maintenance area under the federal AAQS and an attainment area under the State AAQS.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire SCAB is in attainment with both federal and State SO_2 AAQS.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The entire SCAB is in attainment for the federal and State AAQS for lead.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (all particles less than or equal to 10 micrometers in diameter, or PM_{10}) are derived from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle (less than 2.5 microns in diameter, or $PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. Coarse particles (PM_{10}) can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that fine particles ($PM_{2.5}$), that penetrate deeply into the lungs are more likely than coarse particles to contribute to the health effects listed in a number of recently-published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire SCAB is a nonattainment area for the federal and State PM_{10} AAQS. The attainment status of $PM_{2.5}$ in the SCAB is expected to be designated by the EPA as nonattainments, based on the collected ambient air quality data.

3.1.4 Local Air Quality

Ambient Air Pollutant Concentrations. The SCAQMD, together with the California ARB, maintain ambient air quality monitoring stations in the SCAB. The air quality monitoring stations closest to the Olinda Alpha Landfill site are the La Habra (O_3, CO, and NO_2), Anaheim (PM_{10} and $PM_{2.5}$), and Costa Mesa (SO_2) stations. The air quality trends at these monitoring stations are representative of the ambient air quality in the City of Brea and surrounding areas. The pollutants monitored at these stations are (1-hour and 8-hour) CO, (1-hour and 8-hour) O_3, NO_2, and (fine and coarse) suspended particulate matter.[1] SO_2 concentrations in the entire State have been below the federal and State AAQS in the past 10 years.

[1] Air quality data, 2000, 2001, and 2002; California Air Resources Board Web site.

The ambient air quality data in Tables 3.D and 3.E show that SO_2, NO_2, and CO levels are below the applicable State and federal AAQS at these stations. O_3 levels exceeded the State (3 to 8 days a year) and federal (once in 2000 only) one-hour AAQS in the past three years at the La Habra station. O_3 levels exceeded the federal eight-hour AAQS twice each year in 2000 and 2001 and did not exceed the federal AAQS in 2002 at the La Habra station. The PM_{10} level exceeded the State AAQS in each of the past three years (5 to 8 days a year), but has not exceeded the federal AAQS at the Anaheim station. $PM_{2.5}$ levels monitored at the Anaheim station exceeded the federal AAQS one to six days a year for the last three years.

Carbon Monoxide (CO) Hot Spots. The primary mobile source pollutant of local concern is CO. CO is a direct function of vehicle idling time and, thus, traffic flow conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthful levels affecting local sensitive receptors (residents, school children, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentration, modeling is recommended to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the La Habra station, the closest station with monitored CO data, showed a highest recorded one-hour concentration of 13.8 ppm (State standard is 20 ppm) and a highest eight-hour concentration of 6.2 ppm (State standard is 9 ppm) during the past five years (see Tables 3.D and 3.E).

The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Modeling of the CO hot spots analysis was based on traffic volumes generated by the project traffic study (Bryan A. Stirrat & Associates, February 2004), which identified the peak traffic levels generated in the project area for the year 2004 as existing conditions.

The impact on local carbon monoxide levels was assessed with the ARB-approved CALINE4 air quality model, which allows microscale CO concentrations to be estimated along roadway corridors or near intersections. This model is designed to identify localized concentrations of CO, often termed "hot spots." A brief discussion of input to the CALINE4 model follows. The analysis was performed for the worst-case wind angle and wind speed condition and is based upon the following assumptions:

- Selected modeling locations represent the intersections closest to the project site, with the highest project-related vehicle turning movements and the worst level of service deterioration.
- Twenty receptor locations with the possibility of extended outdoor exposure from 12 to 19 meters of the roadway centerline near intersections were modeled to determine CO concentration. These receptor locations were selected based upon guidelines in the Caltrans Transportation Project-Level Carbon Monoxide Protocol, including receptors placed at 3 meters (or 10 feet) from the edge of the roadway.

Table 3.D: Ambient Air Quality at La Habra, Anaheim, and Costa Mesa Air Monitoring Stations

	One Hour Carbon Monoxide[1]		One Hour Ozone[2]		Coarse Suspended Particulate (PM_{10})[3]		Nitrogen Dioxide[4]	
	Max. 1 Hour Conc. (ppm)	Number of Days Exceeded	Max. 1 Hour Conc. (ppm)	Number of Days Exceeded	Max. 24 Hour Conc. ($\Phi g/m^3$)	Number of Days Exceeded	Max. 1 Hour Conc. (ppm)	Number of Days Exceeded
State Stds.	> 20 ppm/1 hr		> .09 ppm/1 hr		> 50 $\Phi g/m^3$, 24 hrs		> .25 ppm/1 hr	
2002	10.2	0	0.12	3	69	5	0.12	0
2001	10.7	0	0.11	4	93	6	0.13	0
2000	13.8	0	0.14	8	126	8	0.12	0
MAXIMUM	**13.8**		**0.14**		**126**		**0.13**	
Federal Stds.	> 35 ppm/1 hr		> .12 ppm/1 hr		> 150 $\Phi g/m^3$, 24 hrs		0.053 ppm, annual average	
2002	10.2	0	0.12	0	69	0	0.025	0
2001	10.7	0	0.11	0	93	0	0.027	0
2000	13.8	0	0.14	1	126	0	ND[5]	0
MAXIMUM	**13.8**		**0.14**		**126**		**0.027**	

Source: ARB, 2000 to 2002.

[1] Data taken from the La Habra monitoring station.
[2] Data taken from the La Habra monitoring station.
[3] Data taken from the Anaheim monitoring station.
[4] Data taken from the La Habra monitoring station.
[5] No data available for this pollutant in this year.

Table 3.E: Ambient Air Quality at La Habra, Anaheim, and Costa Mesa Air Monitoring Stations

	Eight Hour Carbon Monoxide[1]		Eight Hour Ozone[2]		Fine Suspended Particulate ($PM_{2.5}$)[3]		Sulfur Dioxide[4]	
	Max. 8 Hour Conc. (ppm)	**Number of Days Exceeded**	**Max. 8 Hour Conc. (ppm)**	**Number of Days Exceeded**	**Max. 24 Hour Conc. ($\Phi g/m^3$)**	**Number of Days Exceeded**	**Max. 24 Hour Conc. (ppm)**	**Number of Days Exceeded**
State Stds.	∃ 9.0 ppm/8 hr		No State Standard		No State Standard		> .04 ppm/24 hr	
2002	4.5	0	0.08	NA[5]	68.6	NA	0.011	0
2001	4.7	0	0.09	NA	70.8	NA	0.005	0
2000	6.2	0	0.10	NA	113.9	NA	0.006	0
MAXIMUM	**6.2**		**0.10**		**113.9**		**0.011**	
Federal Stds.	∃ 9.0 ppm/8 hr		> .08 ppm/8 hr		> 65 $\Phi g/m^3$, 24 hrs		0.14 ppm/24 hr	
2002	4.5	0	0.08	0	68.6	1	0.002	0
2001	4.7	0	0.09	2	70.8	1	0.001	0
2000	6.2	0	0.10	2	113.9	6	0.002	0
MAXIMUM	**6.2**		**0.10**		**113.9**		**0.002**	

Source: ARB, 2000 to 2002.

1 Data taken at the La Habra monitoring station.
2 Data taken from the La Habra monitoring station.
3 Data taken from the Anaheim monitoring station.
4 Data taken from the Costa Mesa monitoring station.
5 No State standard.

Table 3.F: Existing Vehicular Traffic Intersection CO Concentrations

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	2004 1 Hr CO Concentration[1] (ppm)	2004 8 Hr CO Concentration[2] (ppm)	Exceeds State Standards 1 hr	8 hr
Associated Road & Imperial Highway	14	12.4	6.1	No	No
	14	12.4	6.1	No	No
	15	12.4	6.1	No	No
	16	12.4	6.1	No	No
Placentia Avenue & Imperial Highway	12	12.4	6.1	No	No
	12	12.2	5.9	No	No
	14	12.2	5.9	No	No
	14	12.2	5.9	No	No
Kraemer Boulevard & Imperial Highway	17	12.4	6.1	No	No
	17	12.4	6.1	No	No
	19	12.4	6.1	No	No
	20	12.4	6.0	No	No
Rose Drive & Imperial Highway	14	12.8	6.4	No	No
	14	12.8	6.4	No	No
	15	12.8	6.4	No	No
	16	12.6	6.2	No	No
Valencia Avenue & Birch Street	14	11.6	5.5	No	No
	14	11.6	5.5	No	No
	14	11.5	5.5	No	No
	14	11.5	5.5	No	No
Valencia Avenue & Carbon Canyon Road	14	11.7	5.6	No	No
	14	11.5	5.5	No	No
	15	11.4	5.4	No	No
	17	11.4	5.4	No	No
Valencia Avenue & Imperial Highway	15	11.9	5.7	No	No
	15	11.9	5.7	No	No
	16	11.8	5.7	No	No
	17	11.8	5.7	No	No

Source: LSA Associates, Inc., February 2004.

[1] Includes ambient one-hour CO concentration of 10.0 ppm. The State=s one-hour CO AAQS is 20 ppm. CO concentrations at all receptor locations would be the same with or without project.

[2] Includes ambient eight-hour CO concentration of 4.4 ppm. The State=s eight-hour CO AAQS is 9.0 ppm. CO concentrations at all receptor locations would be the same with or without project.

- The calculations assume a meteorological condition of almost no wind (0.5 meter/ second), a suburban topographical condition between the source and receptor, and a mixing height of 1,000 meters, representing a worst-case scenario for CO concentrations.
- CO concentrations are calculated for the one-hour averaging period and then compared to the one-hour standards. CO eight-hour averages are extrapolated using techniques outlined in the SCAQMD's *California Environmental Quality Act (CEQA) Air Quality Handbook*, October 1993, and compared to the eight-hour standards; a persistence factor of 0.7 was used to predict the eight-hour concentration in a nonattainment area.
- Concentrations are given in ppm at each of the receptor locations.
- The "at-grade" link option with speed adjusted based on average cruise speed and number of vehicles per lane per hour was used rather than the "intersection" link selection in the CALINE4 model. (Caltrans has suggested that the "intersection" link should not be used due to an inappropriate algorithm based on outdated vehicle distribution.) Emission factors from the EMFAC2002 model for all vehicles based on the adjusted speed for the year 2004 were used for the vehicle fleet.
- The highest of the second-highest CO concentrations monitored at the La Habra station in the past three years were used as background concentrations as recommended by the EPA for an area without projected future background concentrations. The "background" concentrations are then added to the model results for future with and without the proposed project conditions. The monitored CO concentrations are 10.0 ppm for the one-hour CO and 4.4 ppm for the eight-hour CO. No rolled-back factor was applied for future scenarios for a worst-case scenario, as suggested by the SCAQMD staff.

Table 3.F shows that existing CO levels at or near intersections along the access roads to Olinda Alpha Landfill are below both the one-hour and eight-hour federal and State AAQS. No exceedance of the AAQS has been recorded in the past three years.

Existing On Site Dust Control. The IWMD has implemented a dust control program at the Olinda Alpha Landfill to minimize particulate matter entering the air during existing landfilling operations. The following activities are included in this program: asphalt paving of the main internal haul roads; watering and proper maintenance of haul roads; water spraying of soil stockpiles; applying water or planting temporary vegetation on intermediate soil cover; and planting and maintaining a vegetative cover on completed fill and excavation slopes. Fugitive dust control measures are implemented in compliance with the site-specific SCAQMD Rule 403 compliance plan, which is further described in Section 6.0 (Mitigation Measures).

Screening Health Risk Analysis. The primary health risk from heavy-duty trucks is diesel particulate exhaust. As will be discussed later in the Methodology and Thresholds section, a screening-level health risk analysis was conducted for existing and proposed homes along Valencia Avenue north of Carbon Canyon Road leading to the project site. The results of the screening-level analysis show that existing and proposed residences along Valencia Avenue would be exposed to an unmitigated inhalation cancer risk of one to two in a million assuming a five-year exposure period, which is lower than the ten-in-a-million threshold. With up to twenty years of exposure (the project proposes the continuation of the landfill for eight years), the risk would go up to eight in a million,

still below the ten in a million threshold. No significant health risk would occur for existing and proposed residences along Valencia Avenue leading to the Olinda Alpha Landfill from landfill-related truck traffic.

In addition, a screening level health risk assessment was conducted for the on-site landfill gas flare system and equipment exhaust. Based on the current landfill operations, the inhalation carcinogenic health risk was found to be less than one in a million at a distance of 500 feet. The closest existing or planned residences are more than 1,500 feet from the flare system, and more than 4,200 feet from the future expansion area. This range of health risk is lower than the ten-in-a-million threshold recommended for residential uses.

3.1.5 Regulatory Settings

Federal Regulations/Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (EPA) established national AAQS (NAAQS). The NAAQS were established for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the SCAB.

The EPA established new NAAQS for ground level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the Clean Air Act, as applied in setting the new public health standards for ozone and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets AAQS under the Clean Air Act. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court threw out the EPA's policy for implementing new ozone rules, saying the agency ignored a section of the law that restricts its decision making authority. It ordered the agency to come up with a more "reasonable" interpretation of the law.

State Regulations/Standards. The State of California began to set California AAQS (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. The CAAQS are listed in Table 3.A.

Originally, there were no attainment deadlines for the CAAQS. However, the California Clean Air Act (CCAA) of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans are required to achieve a minimum five percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The Basin is currently classified as a nonattainment area for three criteria pollutants: ozone, carbon monoxide, and coarse particulates.

3.1.6 Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The Federal Clean Air Act Amendments of 1977 required that each state adopt a State Implementation Plan (SIP) outlining pollution control measures to attain the AAQS in nonattainment areas of the state.

The ARB coordinates and oversees both State and federal air pollution control programs in California. ARB oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a SIP for EPA approval. ARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these stations are used by ARB to classify air basins as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress in attaining the AAQS. ARB has divided the State into 15 air basins. Significant authority for air quality control within these air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan. The SCAQMD and Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. Regional AQMPs were adopted for the Basin for 1979, 1982, 1989, 1991, 1994, 1997, and 2003. Compliance with the provisions of the federal Clean Air Act and California Clean Air Act is the primary focus of the AQMP.

The 1997 AQMP was prepared pursuant to federal and State clean air legislation and addresses 1990 Clean Air Act (CAA) requirements with respect to particulate matter AAQS. Under the CAA, the AQMP must demonstrate attainment of PM_{10} AAQS by 2006 for both 24-hour and annual average AAQS. The 1997 AQMP responds to this requirement, relying mostly on the control measures outlined in the 1994 AQMP. The 1997 AQMP also updates the demonstration of attainment of the federal ozone and CO AAQS, and includes a maintenance plan for NO_2, as the Basin now qualifies for attainment of the federal NO_2 AAQS.

According to the 1997 AQMP, attainment of all federal AAQS was to occur no later than the year 2000 for carbon monoxide, the year 2006 for PM_{10}, and the year 2010 for ozone. State AAQS were

proposed to be attained no later than the year 2000 for carbon monoxide. State AAQS for ozone and PM_{10} would not be required to be achieved until after the year 2010.

The 1997 AQMP carried forward the approach and key elements in the 1994 AQMP by focusing on market based strategies and incentives versus command and control regulations. New elements to the 1997 Plan included: 1) improved emission inventory and current air quality information; 2) refined control strategy, which allows for alternative approaches; 3) elimination of future indirect source measures; 4) amendments to the federal post-1996 Rate of Progress Plan and Federal Attainment Plans for ozone and CO; 5) a maintenance plan for NO_X; and 6) an attainment demonstration and SIP revision for PM_{10}.

Implementation of the AQMP is based on a series of control measures that vary by source type, such as stationary or mobile, as well as by the pollutant targeted. Similar to the 1994 AQMP, the Plan proposed two tiers of control measures, based on the availability and readiness of technology. Short and immediate term measures rely on known technologies and are expected to be implemented between 1997 and 2005. Long-term measures rely on the advancement of technologies and control methods that can be reasonably expected to occur between 2000 and 2010.

Control measures focus on adoption of new regulations or enhancement of existing regulations for stationary sources, implementation/facilitation of advanced transportation technologies (i.e., telecommunication, zero emission and alternative fuel vehicles and infrastructure, and both capital and noncapital based transportation improvements). Capital based improvements consist of high occupancy vehicle (HOV) lanes, transit improvements, traffic flow improvements, park and ride and intermodal facilities, and urban freeway, bicycle, and pedestrian facilities. Noncapital based improvements consist of rideshare matching and CMP based transportation demand management activities.

The SCAQMD governing board approved the 1997 AQMP on November 15, 1996. After approval, the AQMP was submitted to the ARB for its review and approval. ARB approved the ozone and PM_{10} parts of the 1997 AQMP on January 23, 1997, and submitted the AQMP to the EPA as proposed revisions to the SIP. The EPA rejected the District's revision of its 1997 AQMP in January 1999. The rejection, however, covers only the provisions of the AQMP designed to attain the federal ozone AAQS. Separate parts of the 1997 AQMP relating to carbon monoxide and nitrogen dioxide have previously been approved, and the EPA has yet to act on that portion of the 1997 AQMP related to PM_{10}. As a result of the rejection, SCAQMD prepared a draft "Proposed 1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin" on October 7, 1999, for public review and comment. The 1999 Amendment proposed to revise the ozone part of the 1997 AQMP that was submitted to the EPA as a revision to the Basin portion of the 1994 California Ozone SIP. The SCAQMD governing board adopted the "1999 Amendment to the 1997 Ozone SIP Revision for the South Coast Air Basin" on December 10, 1999. The EPA approved the 1999 Amendment for Ozone in 2001, and currently there is no approved SIP for CO and PM_{10}. In addition, the SCAQMD governing board settled with three environmental organizations on its litigation of the 1994 Ozone SIP.

The SCAQMD adopted a comprehensive plan update, the 2003 Air Quality Management Plan for the South Coast Air Basin, in August 2003. The 2003 AQMP seeks to demonstrate attainment with the State and federal AAQS and incorporates a revised emissions inventory, the latest modeling

techniques, and updated control measures remaining from the 1997/1999 SIP and new control measures. The ARB approved the 2003 AQMP, with minor modifications. The ARB forwarded the modified 2003 AQMP to the EPA for approval in October 2003.

4.0 METHODOLOGY AND THRESHOLDS

4.1 METHODOLOGY

A number of air quality modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analyses. SCAQMD's current guidelines, *CEQA Air Quality Handbook*, *1993*, were adhered to in the assessment of air quality impacts for the proposed Olinda Alpha Landfill expansion project.

The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project. Sources of on-site stationary emissions include landfill gas, the gas-to-energy facility, and the flare system. Mobile emissions include vehicle trips to and from the landfills considered in this analysis. In addition, localized air quality impacts (i.e., carbon monoxide concentrations [CO hot spots] at intersections in the project area), would potentially be affected due to the proposed changes. Caltrans Transportation Project-Level Carbon Monoxide Protocol (December 1997) was used in this air quality analysis for CO hot spot analysis.

Onsite Operations Emissions. The project would have heavy-duty equipment operating during the work hours. Emissions associated with landfill operations were calculated based on current operational information that is expected to continue after year 2013, when the project begins.

Vehicular Emissions. The project would have refuse trucks and other vehicles to and from the project site. Emissions associated with these trips were calculated based on the number of trips and average trip lengths provided for landfill-related vehicle trips (including haul trucks), and emission factors derived from the ARB's EMFAC 2002 model.

Carbon Monoxide (CO) Hot Spots. The CALINE4 model is used to assess air quality impacts near transportation facilities. The air model estimates the CO concentration near intersections or along roadway segments based on traffic volume, roadway geometry, topography, and meteorological data. To assess the impact on local air quality, CO concentrations in the year 2013 were evaluated. It is anticipated that emission factors will decrease in the future due to advanced technology.

The results from the air quality modeling of CALINE4 were used to determine the level of significance and impact on local air quality. Output sheets from the air quality model runs are contained in Appendix B.

Screening Level Health Risk Analysis. Air dispersion modeling using the ISCST3 model was conducted to develop spatial relationships between truck traffic traveling on Valencia Avenue north of Carbon Canyon Road and the existing/proposed houses in the Olinda Ranch development. Minimum distance from any house to the mid-lane distance of the road is 8 meters. An array of volume sources was arranged along the north and south bound lanes of Valencia Avenue, pacing them at 5-meter intervals and defining them as the width of the lane and at the height of the exhaust stacks (plus a few feet above the trucks to account for upward momentum). Using historical traffic volume data from IWMD and non-landfill traffic for current traffic levels and emission factors from EMFAC2002, an emission factor was developed for diesel particulate that represents all the categories of vehicles and trucks traveling on Valencia Avenue north of Carbon Canyon Road.

A screening level health risk assessment modeling was conducted for emissions associated with the on-site landfill gas flare system (approximately 1,590 feet from the nearest residences in Olinda Ranch) and heavy-duty, diesel-driven landfill equipment exhaust in the future expansion area (approximately 4,250 feet from the nearest residences in Olinda Ranch) in the northeast portion of the landfill.

The OEHHA technique for estimating potential health risks, as described in Appendix I of the Air Toxics Hot Spots Program Risk Assessment Guidelines (OEHHA, August 2003), was used to determine the carcinogenic and chronic health risks to individuals living in the existing and proposed houses along Valencia Avenue north of Carbon Canyon Road. The modeled results were added to the ambient diesel particulate concentration of 2.2 $\mu g/m^3$ for outdoors and 1.47 $\mu g/m^3$ for indoors (as published in Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, California Environmental Protection Agency, June, 1998) and proportioned for a daily exposure of 10 hours indoors and 14 hours outdoor every day for 70 years.

4.2 CEQA THRESHOLD OF SIGNIFICANCE

South Coast Air Quality Management District CEQA Threshold of Significance

A project would normally be considered to have a significant effect on air quality if the project would violate any AAQS, contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutants concentrations, or conflict with adopted environmental plans and goals of the community in which it is located.

Impacts may be derived from short-term activities associated with the construction of new facilities within the site boundary and long-term impacts associated with ongoing operations on the site. An air quality impact analysis is generally structured to address activities that have quantifiable levels of air pollutant emissions that can be compared to clean air standards after those emissions are carried off-site by prevailing winds. Because many pollutants require considerable time to undergo chemical reactions and because the SCAB routinely exceeds AAQS for a reactive pollutant such as ozone (O_3), there is no currently available reasonable mechanism to explicitly quantify "… contributes substantially to an existing violation…" as described in the CEQA Guidelines. To assist determination of the potential significance of air quality impacts, the SCAQMD has published de minimis emission levels that are considered to be the levels below which an air quality impact is not significant. The SCAQMD has established the following emission thresholds its CEQA Air Quality Handbook (SCAQMD, April 1993).

Emissions Thresholds for Construction . The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day or 2.5 tons per quarter of reactive organic compounds (ROC)
- 100 pounds per day or 2.5 tons per quarter of oxides of nitrogen (NO_X)
- 550 pounds per day or 24.75 tons per quarter of carbon monoxide (CO)
- 150 pounds per day or 6.75 tons per quarter of coarse particulate (PM_{10})
- 150 pounds per day or 6.75 tons per quarter of sulfur oxides (SO_X)

Projects in the Basin with construction-related emissions that exceed any of the emission thresholds should be considered to be significant under CEQA.

Thresholds for Operational Emissions. The daily operational emissions "significance" thresholds for the Basin are as follows.

X Emissions Thresholds for Pollutants with Regional Effects

- N 55 pounds per day of ROC
- N 55 pounds per day of NO_X
- N 550 pounds per day of CO
- N 150 pounds per day of PM_{10}
- N 150 pounds per day of SO_X.

Projects with operation related emissions that exceed any of the above listed emission thresholds are considered to result in significant adverse impacts under CEQA.

$ Concentration Standards for Pollutants with Local Effects

- N California State one-hour CO standard of 20.0 ppm
- N California State eight-hour CO standard of 9.0 ppm

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO AAQS. If ambient levels are below the AAQS, a project is considered to have a significant adverse impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal AAQS, project emissions are considered significant if they increase one-hour CO concentrations by 1.0 part per million (ppm) or more or eight-hour CO concentrations by 0.45 ppm or more. There are no local emission concentration standards for other criteria pollutants.

4.3 THRESHOLD OF SIGNIFICANCE FOR AIR EMISSIONS NOT REQUIRED BY CEQA

Health Risk Analysis Thresholds. For pollutants without defined significance standards or air contaminants not covered by the standard criteria cited above, the definition of substantial pollutant concentrations varies. For toxic air contaminants, "substantial" is taken to mean that the individual cancer risk exceeds a threshold considered to be a prudent risk management level. If best available control technology for toxics (T-BACT) has been applied, the individual cancer risk to the maximum exposed individual (MEI) must not exceed ten in one million in order for an impact to be determined not to be significant.

Airborne impacts are also derived from materials considered to be a nuisance for which there may not be associated standards. Odors or the deposition of large diameter dust particles outside the PM_{10} size range would be included in this category. It is considered a significant impact for odors and large diameter dust particles if the SCAQMD nuisance (Rule 402) would be potentially violated.

The following limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from project emissions of toxic air contaminants have been established for the Basin:

- MICR and Cancer Burden

  The cumulative increase in MICR which is the sum of the calculated MICR values for all toxic air contaminants emitted from the project will not result in any of the following:

  (A) an increased MICR greater than one in one million (1.0×10^{-6}) at any receptor location, if the project is constructed without T-BACT

  (B) an increased MICR greater than ten in one million (1.0×10^{-5}) at any receptor location, if the project is constructed with T-BACT;

  (C) a cancer burden greater than 0.5

- Chronic Hazard Index

  The cumulative increase in total chronic HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

- Acute Hazard Index

  The cumulative increase in total acute HI for any target organ system due to total emissions from the project will not exceed 1.0 at any receptor location.

- Risk per year

  The risk per year shall not exceed 1/70 of the maximum allowable risk specified above at any receptor locations in residential areas.

MAXIMUM INDIVIDUAL CANCER RISK (MICR) is the estimated probability of a potential maximally exposed individual contracting cancer as a result of exposure to toxic air contaminants over a period of 70 years for residential and 46 years for worker receptor locations. The MICR

calculations shall include multipathway consideration, if applicable. CANCER BURDEN means the estimated increase in the occurrence of cancer cases in a population subject to a MICR of greater than or equal to one in one million (1.0×10^{-6}) resulting from exposure to toxic air contaminants. INDIVIDUAL SUBSTANCE CHRONIC HAZARD INDEX (HI) is the ratio of the estimated long-term level of exposure to a toxic air contaminant for a potential maximally exposed individual to its chronic reference exposure level. The chronic hazard index calculations shall include multipathway consideration, if applicable. INDIVIDUAL SUBSTANCE ACUTE HAZARD INDEX (HI) is the ratio of the estimated maximum one-hour concentration of a toxic air contaminant for a potential maximally exposed individual to its acute reference exposure level.

5.0 IMPACTS ON AIR QUALITY

5.1 GENERAL OVERVIEW OF IMPACTS

The proposed project would extend the operations of Olinda Alpha Landfill from year 2013 to approximately year 2021. The existing landfill operations generate air emissions from on-site operations and from off-site waste/refuse truck trips. The proposed landfill expansion would result in the continuation of the same impacts as existing related to air emissions from landfilling, vehicular trips, and stationary sources over a longer period of time.

5.2 IMPACTS OF THE PROPOSED PROJECT

5.2.1 Short-Term Impacts

Air quality impacts would occur during the construction of the required prescriptive or alternative liner systems, surface water drainage systems, subdrain system, LFG collection and control systems, and leachate collection and recovery systems to accommodate expansion of the Olinda Alpha Landfill. Major sources of emissions during construction include exhaust emissions from construction vehicles and equipment and fugitive dust generated by construction vehicles and equipment traveling over exposed surfaces, as well as by soil disturbances from excavation and backfilling.

Construction Emissions. Construction activities would cause combustion emissions from heavy-duty construction vehicles, haul trucks, and vehicles transporting the construction crew. Exhaust emissions during construction activities envisioned on site would vary daily as construction activity levels change. It is anticipated that peak excavation days would generate a larger amount of air pollutants than during other project construction days, due to larger amount of soil to be excavated and removed from the site.

Fugitive Dust. Fugitive dust emissions are generally associated with excavation, windblown unpaved areas, vehicle and equipment travel on unpaved roads, and dirt/debris pushing. Dust generated during construction activities would vary substantially depending on the level of activity, the specific operations, and weather conditions.

The SCAQMD estimates that each acre of graded surface creates about 26.4 pounds of PM_{10} per workday during the construction phase of the project and 21.8 pounds of PM_{10} per hour from dirt/debris pushing per dozer. It is assumed that up to a maximum of one acre of land would be disturbed on any one day. It is also assumed that four pieces of earthmoving equipment would be used up to ten hours per day. It is assumed that there would be a maximum of 0.5 acre of open stock piles on the project site, which will generate 42.8 pounds per day (ppd) of windblown PM_{10}. Therefore, approximately 941 ppd of PM_{10} would be generated from soil disturbance before

mitigation during the peak construction phase. This level of dust emission would exceed the SCAQMD threshold of 150 ppd.

The project will comply with regional rules, which would assist in reducing the short-term air pollutant emissions. Fugitive dust from a construction site must be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. Dust suppression techniques like the existing dust control program would continue to be implemented at the landfill under the expansion plan to prevent fugitive dust from creating a nuisance off site. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component) by 50 percent or more. Assuming a mitigating efficiency of 50 percent by implementation of the standard measures, PM_{10} emissions from soil disturbance under the proposed project would be reduced to approximately 471 ppd. Compliance with these rules would reduce dust impacts of the proposed project on sensitive receptors in the project vicinity. However, the fugitive dust emissions will continue to exceed the SCAQMD threshold.

It is further assumed that on a peak day, a total of 14 workers would be working in the construction area and five truck loads of materials would be delivered to the project site. Assuming an average trip length of 25 miles each way, emissions from the daily 700 miles of travel by workers and the 250 miles traveled by the delivery trucks would generate approximately 9.6 ppd of CO, 0.5 ppd of ROC, 7.2 ppd of NO_X, 0.1 ppd of SO_X, and 0.2 ppd of PM_{10} from vehicle exhaust and tire wear.

Construction Emissions Summary. As shown in Table 5.A, the peak-day construction emissions under the proposed expansion project would exceed the SCAQMD daily threshold for PM_{10} after implementation of standard dust suppression measures. Emissions associated with project construction would contribute to regional emissions. When combined with emissions from construction of other projects in the region, construction emissions would be considered cumulatively significant.

5.2.2 Long-Term Impacts

Long-term air emission impacts are those associated with stationary sources and mobile sources related to the proposed project. Because of the characteristics of the proposed project, i.e., the expansion of an existing landfill, the project related emissions are the emissions associated with current operations at the project site. In addition, the proposed project would result in the continued landfill related vehicular trips, including waste/refuse trucks. Therefore, current mobile source emissions from the vehicle use associated with the landfill would be the mobile source emissions associated with the proposed project between year 2013 and year 2021.

Table 5.A: Peak Day Construction Emissions (Pounds per Day)

Number and Equipment Type[1]	Hours of Operation	Pollutants				
		CO	ROC	NO_X	SO_X	PM_{10}
1 Excavator	10	3.6	0.3	7.8	0.6	0.5
1 Motor Grader	10	1.5	0.4	7.1	0.9	0.6
1 Tracked Loader	10	2.0	1.0	8.3	0.8	0.6
1 Wheeled Tractor	10	35.8	1.8	12.7	0.9	1.4
1 Miscellaneous[2]	10	6.8	1.5	17.0	1.4	1.4
2 On-Site Haul Trucks	10	9.2	0.9	7.0	0.1	0.3
Delivery Truck Trips[3]		3.2	0.3	6.3	0.1	0.1
Worker Commute Exhaust[4]		6.4	0.2	0.9	0.0	0.1
Subtotal Exhaust Emission		**68.5**	**6.4**	**67.1**	**4.8**	**5**
Fugitive Dust Emissions						
Open Stock Pile[5]						42.8
Dirt/Debris Pushing[6]						872.0
Graded/Exposed Surface[7]						26.4
TOTAL GRADING NO MITIGATION		**68.5**	**6.4**	**67.1**	**4.8**	**941.2**
TOTAL GRADING WITH MITIGATION[8]		**68.5**	**6.4**	**67.1**	**4.8**	**475.6**
SCAQMD Threshold		**550**	**75**	**100**	**150**	**150**
Significant?		**NO**	**NO**	**NO**	**NO**	**YES**

Notes:
1 Emission factors based on SCAQMD, *1993 CEQA Air Quality Handbook*, Tables A9-8-A and A9-9.
2 A water truck.
3 Based on a haul length of 25 miles each way and five loads per day using EMFAC2002 emission rates.
4 Based on a commute length of 25 miles each way for 14 workers.
5 Emissions from one-half acre of open stock piles.
6 Emissions by four vehicles operating eight hours per day.
7 Emissions from one acre of graded/exposed surface.
8 Assumes 50 percent effectiveness for dust suppression measures.
Source: LSA (2004).

Regional Pollutants Projections

Landfill Operations. Based on the data collected by the IWMD, on-site equipment used at the landfill to dispose of an annual average of 7,000 TPD of MSW and 3,000 to 4,000 TPD exempt commodity on a daily basis includes the following shown in Table 5.B:

Table 5.B: Olinda Alpha Landfill List of Operating Equipment

Quantity	Description	Uses
5	Dozer	Push, compact, grade and cover refuse. Walk-in slopes, miscellaneous earthwork.
2	Compactor	Refuse and cover compaction.
2	Scraper	Haul earth for cut and cover operations.
2	Water Truck	Control cover soil moisture content and dust control, landscape irrigation, and fire fighting.
1	Motor Grader	Grade unloading deck, maintain internal roads and drainage control of decks.
1	Backhoe	Load, dig, and trench earthen material.
1	Dump Truck	Move and haul miscellaneous materials such as broken asphalt, silt, earth cover, etc.
2	Wheel Dozer	Clean the roads and maintain trash areas.

Source: County of Orange Integrated Waste Management Department, January 2004.

Based on information provided by the County of Orange IWMD, there are currently 61 total landfill personnel on the Olinda Alpha Landfill site to conduct the daily operations.

It was assumed that on-site dozers and compactors are used 10 hours per day and all other equipment is used for 8 hours per day when the landfill is open for business. It should be noted that emissions from on-site equipment used in landfill operations would continue from 2013 through 2021, and would cease to occur after year 2021. Table 5.C lists the estimated existing emissions from daily on-site equipment usage described above as well as waste/refuse trucks to and from the Olinda Alpha Landfill.

Waste/Refuse Transfer Trucks. Based on the data collected by the IWMD, waste/refuse trucks coming to the Olinda Alpha Landfill are from both in-County and out-of-County sources. Table 5.C lists emissions associated with haul trucks to and from the Olinda Alpha Landfill. It should be noted that emissions from waste/refuse transfer trucks coming to the Olinda Alpha Landfill would continue from 2013 through 2021, and would be diverted to other landfilling destinations after 2021. Diverted landfilling destinations would involve greater transportation related emissions as compared to the OAL site due to greater travel distances from the source area of MSW generation.

Table 5.C: Landfill Operations Emissions (Pounds per Day)

Source[1]	No. of Units	Hours of Operation	NO_X	ROC	PM_{10}	SO_X	CO
Waste Truck Trips[2]	1,784		516.1	24.2	10.9	5.8	259.1
Other deliveries[3]	384		10.0	1.2	0.3	0.1	31.7
Motor Grader	1	8	5.7	0.3	0.5	0.7	1.2
Loader	1	8	6.6	0.8	0.5	0.6	1.6
Compactor	2	10	34.0	3.0	2.8	2.9	13.5
Scrapers	2	8	61.4	4.3	6.6	7.4	20.0
Water Trucks	2	8	18.2	1.0	2.6	8.6	6.4
Dozer	5	10	63.0	6.0	5.6	7.0	17.5
Backhoe	1	8	13.6	1.2	1.1	1.1	5.4
Service Trucks	3	8	1.4	0.6	0.0	0.1	5.4
Wheel Dozer	2	10	69.5	6.6	1.7	6.6	33.1
Employee Commute/ Visitor Trips[4]	122		4.0	0.9	0.2	0.0	27.8
Subtotal Vehicular Emissions			**803.5**	**50.1**	**32.8**	**40.9**	**422.7**
Landfill Gas Fugitive[5]				533			
Gas-to-energy Facility[6]			216.0	65.0	3.0	22.0	438.0
Flare System[7]			196.1	9.4	77.5	48.2	48.6
Subtotal Stationary Source Emissions			**412.1**	**607.4**	**80.5**	**70.2**	**486.6**
Total Vehicular and Stationary Source Emissions			**1,215.6**	**657.5**	**113.3**	**111.1**	**909.3**
SCAQMD Threshold			**55**	**55**	**150**	**150**	**550**
Exceed Threshold?			**Yes**	**Yes**	**No**	**No**	**Yes**

Source: Bryan A. Stirrat & Associates and LSA Associates, Inc., April 2004.

Notes:

1 Emission factors based on SCAQMD, *1993 CEQA Air Quality Handbook*, Tables A9-8-A and A9-9. Based on the USEPA's AP-42 emission factors.

2 Based on an average haul length of 11.4 miles each way using EMFAC2002 emission rates.

3 Based on an average haul length of nine miles each way using EMFAC2002 emission rates

4 Based on a commute length of 25 miles each way.

5 Assumes that 70 percent of the landfill gas will be captured by the landfill gas collection system. This is based on generally accepted methods of estimating landfill gas generation rates.

6 2004 Measured Emissions. Maximum permitted emissions are: 96 lb/day ROC, 822 lb/day NO_X, 550 lb/day CO, 36 lb/day SO_X and 3 lb/day PM_{10}.

7 Emissions from most current (2003) flare source test. Emissions vary year to year. Maximum permitted emissions are: 93.6 lb/day, ROC, 339.4 lb/day NO_X, 106.1 lb/day SO_X, 407.4 lb/day CO, and 136.6 lb/day PM_{10}

On-Site Landfill Gas and Flare System. The Olinda Alpha Landfill is a Class III landfill permitted for the disposal of non-hazardous municipal solid waste (MSW). The SCAQMD regulates landfill operations related to landfill gas emissions, subsurface gas migration, and fugitive dust control for Orange County landfills. The CIWMB and LEA also regulate LFG subsurface migration. Environmental monitoring of air, landfill gas (LFG), and groundwater is conducted at all the sites to detect LFG migration or groundwater contamination. An existing LFG extraction system and flare station is located at the Olinda Alpha Landfill for LFG control. In addition, utilization of LFG for energy production currently is being conducted at Olinda Alpha Landfill. Table 5.C lists the

emissions associated with fugitive landfill gas (30 percent of total generated) and emissions from the flare system (based on the most recent source testing results) and the gas-to-energy facility.

Emissions associated with on-site LFG and flare systems for waste deposited through 2013 would continue to occur at the Olinda Alpha Landfill even if the project is not implemented. Emissions associated with LFG and flare systems from waste deposited between 2013 and 2021 would extend the local emissions by eight years. These additional LFG and flare system emissions would occur regardless of which project alternative is selected because landfill gas emissions associated with decomposition of MSW are not site-specific and would continue to be generated as long as there is MSW generation and deposition in landfills. As such, there would be no increase in regional LFG associated with the proposed project as compared to existing conditions or the No Project Alternative. However, the proposed project would extend the LFG peak year from 2017 to 2023 and increase the maximum amount of methane produced from 8,000 SCFM to 9,000 SCFM. No additional flares beyond the third flare will be required to accommodate the additional LFG produced. Therefore, the increase in emissions will not exceed the levels required for the permitted landfill operations.

Table 5.C shows that emissions associated with current landfill operations exceed the SCAQMD daily emission thresholds for three of the five criteria pollutants. These landfill operations related emissions would continue from year 2013 to approximately 2021 as a result of the proposed project. Because these emissions cannot be feasibly reduced to below the SCAQMD emission thresholds, the proposed project would have a significant long-term air quality impact. It should be noted that this significant impact to air quality would occur regardless of whether the project is developed or not (if the MSW that is currently disposed of at OAL is disposed of within the south coast air basin), simply because there will continue to be MSW generation and air pollutant emissions associated with the need to dispose of it. These SCAQMD emission thresholds signal that this is a significant emission source. Because these emissions will occur regardless of whether the project is developed or not, consideration of the magnitude of air pollution generated by MSW disposal under the different project alternatives should be considered in the evaluation of regional air pollution and is further discussed in Section 5.3.

In terms of local concentrations from Olinda Alpha Landfill, monthly monitoring of all occupied structures within the landfill boundary is performed utilizing an Organic Vapor Analyzer (OVA). Off-site receptors are at least 1,950 feet away from these site structures; therefore, no impact would occur for off-site receptors. IWMD P&P require remedial action/measures when methane registers equal to or greater than 500 ppm in a structure.

Microscale Projections

Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project.

Carbon Monoxide (CO) Hot Spots. CO poses a threat to human health in high concentrations. CO tends to be concentrated at the point of emission and disperses with distance from the source. CO generated from the flares and internal combustion engines is located more than 1,590 feet from the closest existing and proposed residence. Caltrans CO assessment protocol for traffic sources requires

modeling of traffic 10 feet from the edge of congested intersections. Due to the large distance between the on-site sources and the closest residences, CO from these sources are not anticipated to result in significant concentrations of CO that would exceed ambient air quality standards.

The proposed project would result in the continuation of landfill related traffic to and from the Olinda Alpha Landfill. Vehicle turn volumes at intersections used for landfill-related traffic would be lower without the proposed project. The following CO hot spot analysis applies to the proposed project. The increase in carbon monoxide (CO) emissions or concentrations is 0.1 ppm or less as a result of the project. CO hot spot analyses were conducted for year 2013 conditions. Year 2013 is the year with project (landfill expansion) beginning, which would have the highest emission factors between year 2013 and year 2021. The highest CO concentrations would occur during peak traffic hours; hence, CO impacts calculated under peak traffic conditions represent a worst case analysis. Modeling of the CO hot spot analysis was based on traffic volumes generated by the project traffic study (Bryan A. Stirrat & Associates, February 2004), which identified the peak traffic levels generated in the project area for the year 2013.

Table 5.D shows the projected CO levels in the future (year 2013). For the future conditions, there is no exceedance of either the state or federal CO AAQS for the one-hour or eight-hour durations. The one-hour CO concentration ranges from 10.8 to 11.4 ppm in year 2013. The eight-hour CO concentration ranges from 5.0 to 5.4 ppm in year 2013. They are all below the federal and State AAQS. CALINE4 model printouts are included in Appendix A. Because no future CO levels would exceed the federal and State one-hour and eight-hour AAQS, no CO hot spots would occur.

These future opening year conditions show that the project area would not have CO hot spots, with or without the project. The proposed project would not have a significant impact on local air quality for CO, and no mitigation measures would be required.

Screening Health Risk Analysis. The primary health risk from heavy-duty trucks is diesel particulate exhaust. A screening level health risk analysis was conducted for existing and proposed homes along Valencia Avenue north of Carbon Canyon Road leading to the project site. The results of the screening level analysis show that existing and proposed residences along Valencia Avenue would be exposed to an unmitigated inhalation cancer risk of one to two in a million assuming a five year exposure period, which is lower than the ten in a million threshold. With up to 20 years of exposure in 5-year increments, the risk would go up to 8 in a million, still below the 10 in a million threshold. Exposure of less than 20 years would result in a risk of less than 8 in a million. Because the proposed project would extend the landfill operation by eight years (2013 to approximately 2021), no significant health risk would occur for existing and proposed residences along Valencia Avenue leading to the Olinda Alpha Landfill from landfill-related truck traffic.

Similarly, the screening level health risk assessment conducted for the on-site flare system and heavy-duty, diesel-driven equipment exhaust showed that the level of health risk is less than one in a million for all receptors with a distance of 500 feet or more from these activities. Because the closest existing and proposed residences are more than 1,590 feet from the flare system and more than 4,200 feet from the future expansion area, potential health risks for these residents would be small and less than significant. No mitigation is necessary.

Odor Impact Analysis. The proposed project would continue landfill activities at the same rate as that which exists under current conditions and would not increase the potential for odor impacts.

Potential odor impacts associated with landfilling include the odors of fresh refuse and/or LFG. Landfill odors consist of two main types of odors. Fresh trash has a "wet paper" characteristic odor that occurs during initial oxygen-sufficient decomposition. After several weeks, the character of the odor changes to a "sickly sweet" odor typical of LFG. The conversion from one type of odor to the other depends on the nature of the refuse and the amount of moisture available in the landfill. A wet landfill creates an LFG odor impact much sooner than a dry landfill.

Throughout the operating day or at the end of each operating day, sufficient cover material is transported by scrapers to the working face and is placed by either a crawler tractor or scrapers to cover all exposed refuse with a minimum six-inch-thick cover of soil or alternative daily covers. The purpose of daily cover soil or an equivalent alternative daily cover material approved by the Local Enforcement Agency (LEA) is to provide a suitable barrier to the emergence of flies, prevent windblown refuse and debris, minimize the escape of odor, prevent excess infiltration of surface water runoff, and hinder the progress of fires within the landfill.

Odors from refuse are controlled by the operation of a comprehensive landfill gas collection and disposal system. Odors are further controlled by the application of daily soil or alternative cover and chemical cover over the refuse. Intermediate cover is applied as soon as possible on areas required by Title 27. In addition, the active working face is contained in as small an area as practicable to help control odors.

Odors Associated with Fresh Refuse. Fresh refuse is the odor one associates with household waste from a trash can when it is placed at the curb for collection. Unless the refuse contains materials that are very rapidly putrescible (i.e., prone to rotting) such as uncooked meat products or yard waste that has begun composting in the collection container, there is normally sufficient oxygen present to keep odor production at a slow rate during storage prior to pickup for disposal. In addition to the nature of the refuse, moisture and heat will also accelerate oxygen-sufficient (aerobic) decay and turn the process into oxygen-deficient (anaerobic) decay.

As the refuse packer truck blends an occasional barrel of foul-smelling trash with less offensive trash, most truckloads of refuse take on a fairly similar odor character. The odor is generally unpleasant near the source, but daytime mixing dilutes the odor with clean air to a level at which off-site complaints are infrequent and ultimately to where people with even a high sensitivity to such odors can no longer detect the odor.

Under worst-case conditions, the NOCLATS (1989) indicated a fresh trash odor detectability of up to one-half mile. The Puente Hills Landfill Expansion EIR (Los Angeles County Sanitation District, 1992) predicted no odor detectability for fresh refuse within 1,250 feet of schools and homes. A study (Giroux and Associates, 1997) of trainloads of fresh trash in Napa, California, found detectable odor no farther than 600 feet from the trains. A consensus value for the outer limits of the odor envelope from fresh rubbish is then one-quarter mile (i.e., 1,320 feet) from the

landfill working face. Except under unusual circumstances, the limit of offensive odor, defined as odor strength 10 times the minimum detection threshold, is perhaps 500 feet from the source.

With prevailing daytime southwest to northeast winds at the Olinda Alpha Landfill, occasional fresh trash detection would be confined to on-site locations away from any off-site existing or planned homes. Consequently, daytime odors from landfilling are not expected to have any significant odor impact on off-site sensitive receptor populations. Control of the size of the working face as a means of fresh trash odor control would minimize odor detectability for off-site sensitive receptor locations.

Odor Associated with LFG. Odor impacts at Southern California landfills became most noticeable in the 1970s and early 1980s. Previous to that time, burning was used to destroy a substantial part of the biodegradable trash in the refuse stream. Conversion to sanitary landfills in response to prohibitions on burning both in backyard incinerators and at landfills led to accumulations of organic material in the waste disposed of in landfills. In the dry tombs of Southern California landfills, the decay lifetime of such material is 30 to 40 years. Material placed in the 1960s is only now reaching the end of this decay cycle.

Passive systems of LFG dispersal (cover soil and vent pipes) were ineffective in preventing off-site odor detectability, especially as refuse was consolidated into fewer, larger landfills instead of many smaller ones. Active LFG collections and disposal systems became mandatory for larger landfills in Southern California. Retrofit systems were installed in older sections of landfills. For current landfill operations, the collection system is installed concurrently with the refuse filling operations and at specific intervals. The collection efficiency of such newer systems tends to be higher than for retrofit systems because there are fewer "dead spots."

Landfill odor has historically been detectable three to five miles from a site when winds are light and low-level inversion traps odors in a shallow layer of air next to the surface of the landfill. This condition typically occurs at night and is called "night time drainage." With the installation of a comprehensive LFG collection and disposal system, odor complaints are minimized. Modern odor-control technology thus appears capable of maintaining a very limited LFG odor footprint around a well-operated landfill.

The proposed expansion area is to the northeast, away from nearby homes and well beyond the zone of probable odor impact.

As stated previously, the project proposes to continue landfill activities at the same rate as under existing conditions. Under the proposed project, the landfill will result in a maximum vertical increase of 115 feet and a maximum horizontal expansion of approximately 33 acres within the existing property boundary of Olinda Alpha Landfill. The proposed vertical expansion is to the north and the horizontal expansion area is to the northeast, away from nearby residences and well beyond the zone of probable odor impact. Therefore, the proposed expansion project is not anticipated to increase the potential for odor impacts.

With prevailing daytime southwest-to-northeast winds at Olinda Alpha Landfill, occasional fresh trash detection would be confined to on site locations away from any off-site existing or planned

residences. Consequently, daytime odors from landfilling are not expected to have any substantial impacts on any off-site sensitive receptor population. Control of the size of the working face as a means of fresh trash odor control would minimize odor detectability for any off-site sensitive receptor locations.

The combination of favorable daytime meteorology, a substantial nocturnal buffer zone for future operations in the expansion area, and the effectiveness of mandatory LFG collection/disposal systems will combine to create a less than significant odor impact for future Olinda Alpha landfilling activities.

Operations at the landfill would continue to generate odors even though no waste would be left uncovered at the end of daily operations. However, because the minimum distance from the expansion area to the nearest off-site residences is more than 4,250 feet, no impacts from on-site odors due to the proposed expansion project would occur.

Table 5.D: Future Without/With Project Vehicular Traffic Intersection CO Concentrations

Intersection	Distance to Receptor Location from Roadway Centerline (meters)	2004 1 Hr CO Concentration[6] (ppm)	2004 8 Hr CO Concentration[7] (ppm)	Exceeds State Standards 1 hr	8 hr
Associated Road & Imperial Highway	19	11.2/11.2	5.2/5.2	No	No
	19	11.1/11.2	5.2/5.2	No	No
	20	11.1/11.1	5.2/5.2	No	No
	20	11.1/11.1	5.2/5.2	No	No
Placentia Avenue & Imperial Highway	12	11.4/11.4	5.4/5.4	No	No
	12	11.4/11.4	5.4/5.4	No	No
	14	11.4/11.4	5.4/5.4	No	No
	14	11.3/11.3	5.3/5.3	No	No
Kraemer Boulevard & Imperial Highway	20	11.4/11.4	5.4/5.4	No	No
	20	11.3/11.3	5.3/5.3	No	No
	20	11.2/11.3	5.2/5.3	No	No
	21	11.2/11.2	5.2/5.2	No	No
Valencia Avenue & Imperial Highway	15	11.1/11.2	5.2/5.2	No	No
	15	11.0/11.0	5.1/5.1	No	No
	16	11.0/11.0	5.1/5.1	No	No
	17	11.0/11.0	5.1/5.1	No	No
Valencia Avenue & Birch Street	12	11.0/11.0	5.1/5.1	No	No
	12	10.9/10.9	5.0/5.0	No	No
	14	10.9/10.9	5.0/5.0	No	No
	15	10.8/10.9	5.0/5.0	No	No
Valencia Avenue & Carbon Canyon Road	14	11.2/11.2	5.2/5.2	No	No
	14	11.1/11.2	5.2/5.2	No	No
	15	11.1/11.1	5.2/5.2	No	No
	16	11.1/11.1	5.2/5.2	No	No

Source: LSA Associates, Inc., February 2004.

5.3 IMPACTS OF ALTERNATIVE 1 (NO PROJECT ALTERNATIVE)

5.3.1 Short-Term Impacts

Because no construction would occur on the Olinda Alpha Landfill under this project alternative, no construction air quality impacts would occur at this landfill.

[6] Includes ambient one-hour CO concentration of 7.4 ppm. The State's one-hour CO AAQS is 20 ppm. CO concentrations at all receptor locations would be the same with or without project.

[7] Includes ambient eight-hour CO concentration of 4.8 ppm. The State's eight-hour CO AAQS is 9.0 ppm. CO concentrations at all receptor locations would be the same with or without project.

5.3.2 Long-Term Impacts

Under this project alternative, it would result in the need to divert waste/refuse trucks to other in-County or out-of-County landfills, therefore increasing the total daily vehicle miles traveled by these trucks. Because vehicle emissions are partly proportional to their vehicle miles traveled (VMT), higher VMT would result in higher vehicle emissions. Therefore, long-term air quality impacts would be worse than the proposed project and would be negative for the region.

5.4 IMPACTS OF ALTERNATIVE 2 (TWO LANDFILL SYSTEM—FRB)

5.4.1 Short-Term Impacts

Because no construction would occur on the Olinda Alpha Landfill under this project alternative, no construction air quality impacts would occur at this landfill. However, construction may be needed at the Frank R. Bowerman Landfill to accommodate the additional daily waste/refuse intake at this landfill.

5.4.2 Long-Term Impacts

Under this project alternative, it would result in the need to divert waste/refuse trucks to the FRB Landfill, therefore increasing the total daily vehicle miles traveled by these trucks. Because vehicle emissions are partly proportional to their VMT, higher VMT would result in higher vehicle emissions. Therefore, long-term air quality impacts would be worse than the proposed project and would be negative for the region.

5.5 IMPACTS OF ALTERNATIVE 3 (TWO LANDFILL SYSTEM—PRIMA DESCHECHA)

5.5.1 Short-Term Impacts

Because no construction would occur on the Olinda Alpha Landfill under this project alternative, no construction air quality impacts would occur at this landfill. However, construction may be needed at the Prima Deschecha Landfill to accommodate the additional daily waste/refuse intake at this landfill.

5.5.2 Long-Term Impacts

Under this project alternative, it would result in the need to divert waste/refuse trucks to the Prima Deschecha Landfills, therefore increasing the total daily vehicle miles traveled by these trucks. Because vehicle emissions are partly proportional to their VMT, higher VMT would result in higher vehicle emissions. Therefore, long-term air quality impacts would be worse than the proposed project and would be negative for the region.

6.0 MITIGATION MEASURES

6.1 STANDARD CONDITIONS AND MITIGATION MEASURES

6.1.1 Standard Conditions

The project will be required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site.

AQ-1 Applicable dust suppression techniques from Rule 403 are summarized below. Additional dust suppression measures in the SCAQMD CEQA Air Quality Handbook are included as part of the project's mitigation. Implementation of these dust suppression techniques will reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

Applicable Rule 403 Measures:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least twice daily. (Locations where grading is to occur will be thoroughly watered prior to earth moving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Pave construction access roads at least 100 feet onto the site from main road.
- Traffic speeds on all unpaved roads shall be reduced to 15 mph or less.

Additional SCAQMD *CEQA Air Quality Handbook* Dust Measures:

- Revegetate disturbed areas as quickly as possible.
- All excavating and grading operations shall be suspended when wind speeds (as instantaneous gusts) exceed 25 miles per hour (mph) and dust plumes are visible.
- All on-site streets shall be swept once a day if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water).

- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash trucks and any equipment leaving the site each trip.

AQ-2 Dust generated by the construction activities shall be retained on site and kept to a minimum by following the dust control measures listed below.

a. During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease.

b. During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the late morning and after work is completed for the day and whenever wind exceeds 15 miles per hour.

c. Immediately after clearing, grading, earthmoving, or excavation is completed, the entire area of disturbed soil shall be treated until the area is paved or otherwise developed so that dust generation will not occur.

d. Soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation.

e. Trucks transporting soil, sand, cut or fill materials, and/or construction debris to or from the site shall be tarped or maintain 6 inches of freeboard from the point of origin.

6.1.2 Mitigation Measures

No mitigation measures are feasible to reduce the operational emissions to less than significant.

6.2 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of Measures AQ-1 and AQ-2 would reduce construction-related emissions further, as required by SCAQMD. However, after mitigation fugitive dust emissions will remain above the SCAQMD's daily construction emission threshold. Therefore, construction of the project would have a significant short-term adverse impact on regional air quality.

In the operational phase, the project would result in a significant unavoidable air quality impact.

7.0 CUMULATIVE IMPACTS

7.1 POTENTIAL FOR CUMULATIVE IMPACTS RELATED TO AIR QUALITY

The proposed project would have the following cumulative air quality impacts:

The proposed project would result in emissions from construction equipment and grading activities. These emissions, together with emissions from other construction activities in the project vicinity and in the Basin, would add to the Basin's daily emissions and contribute to the existing exceedance of air quality standards. This is a potentially significant short-term cumulative air quality impact.

The proposed project would result in the continued operations at Olinda Alpha Landfill until year 2021. The emissions generated by the project operation would exceed the SCAQMD's significance thresholds. Therefore, the project would contribute cumulatively to local and regional air quality degradation.

8.0 REFERENCES AND PERSONAL COMMUNICATIONS

8.1 REFERENCES

Bryan A. Stirrat & Associates, Traffic Study, February 2004.

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OEHHA, Air Toxics Hot Spots Program Risk Assessment Guidelines, August 2003, Appendix I.

Southern California Association of Governments, *Air Quality Management Plan*, 1997.

9.0 LIST OF PREPARERS

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APPENDIX A

CO HOT SPOT MODEL PRINTOUTS

OLINDA ALPHA LANDFILL EXPANSION

AIR QUALITY CO HOT SPOT ANALYSIS

CALINE4 MODEL PRINTOUTS

EXISTING (2004) CONDITIONS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Assoc NBA	*	7	-150	7	0	*	AG	346	6.2	.0	10.0
B. Assoc NBD	*	7	0	7	150	*	AG	527	6.2	.0	10.0
C. Assoc NBL	*	5	-150	0	0	*	AG	195	6.2	.0	10.0
D. Assoc SBA	*	-9	150	-9	0	*	AG	608	6.2	.0	10.0
E. Assoc SBD	*	-9	0	-9	-150	*	AG	572	6.2	.0	10.0
F. Assoc SBL	*	-5	150	0	0	*	AG	170	6.2	.0	10.0
G. Imper EBA	*	-150	-9	0	-9	*	AG	1510	6.2	.0	10.0
H. Imper EBD	*	0	-9	150	-9	*	AG	1625	6.2	.0	10.0
I. Imper EBL	*	-150	-5	0	0	*	AG	210	6.2	.0	10.0
J. Imper WBA	*	150	9	0	9	*	AG	1571	6.2	.0	10.0
K. Imper WBD	*	0	9	-150	9	*	AG	2031	6.2	.0	10.0
L. Imper WBL	*	150	5	0	0	*	AG	145	6.2	.0	10.0
M. Assoc NBAX	*	7	-750	7	-150	*	AG	541	6.2	.0	10.0
N. Assoc NBDX	*	7	150	7	750	*	AG	527	6.2	.0	10.0
O. Assoc SBAX	*	-9	750	-9	150	*	AG	778	6.2	.0	10.0
P. Assoc SBDX	*	-9	-150	-9	-750	*	AG	572	6.2	.0	10.0
Q. Imper EBAX	*	-750	-9	-150	-9	*	AG	1720	6.2	.0	10.0

R. Imper EBDX	*	150	-9	750	-9	*	AG	1625	6.2	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	1716	6.2	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	2031	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-16	1.8
2. NW	*	-17	16	1.8
3. SW	*	-15	-17	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-16	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-17	150	1.8
11. SW mdblk	*	-15	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-16	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-17	600	1.8
19. SW blk	*	-15	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.4	.1	.0	.0	.0	.1	.0	1.0	.1
2. NW	98.	2.4	.0	.1	.0	.2	.0	.0	.0	.2
3. SW	82.	2.2	.0	.0	.0	.0	.2	.0	.0	1.0
4. NE	262.	2.4	.0	.2	.0	.1	.0	.0	.2	.0
5. ES mdblk	278.	2.2	.0	.0	.0	.0	.0	.0	.1	1.2
6. WN mdblk	98.	2.4	.0	.0	.0	.0	.0	.0	.2	.2
7. WS mdblk	82.	2.0	.0	.0	.0	.0	.0	.0	1.0	.1
8. EN mdblk	262.	2.0	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	353.	1.2	.3	.0	.1	.1	.1	.0	.0	.0
10. NW mdblk	172.	1.2	.0	.0	.0	.4	.0	.0	.0	.0
11. SW mdblk	6.	1.3	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	187.	1.2	.0	.5	.0	.1	.0	.0	.0	.0
13. ES blk	277.	2.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	2.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	2.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	2.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.3	.0	.0	.0	.0	.0	.2	.0	.0	.4
2. NW	*	.0	1.0	.2	.0	.0	.0	.0	.0	.0	.3	.2	.0
3. SW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
4. NE	*	.0	.0	1.2	.0	.0	.0	.0	.0	.3	.0	.0	.2
5. ES mdblk	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	*	.0	.1	1.4	.0	.0	.0	.0	.0	.0	.2	.0	.0
7. WS mdblk	*	.1	.2	.2	.0	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	*	.0	1.0	.1	.0	.0	.0	.0	.0	.2	.0	.0	.1
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	.5	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	1.5
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	1.2	.0	.0	.6
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	1.2	.0
17. SE blk	*	.0	.0	.0	.0	.6	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.2	.6	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.2	.0	.0	.6	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.6	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Place NBA	*	7	-150	7	0	*	AG	322	6.2	.0	10.0
B. Place NBD	*	7	0	7	150	*	AG	145	6.2	.0	10.0
C. Place NBL	*	5	-150	0	0	*	AG	199	6.2	.0	10.0
D. Place SBA	*	-9	150	-9	0	*	AG	33	6.2	.0	10.0
E. Place SBD	*	-9	0	-9	-150	*	AG	534	6.2	.0	10.0
F. Place SBL	*	-5	150	0	0	*	AG	40	6.2	.0	10.0
G. Imper EBA	*	-150	-9	0	-9	*	AG	1512	6.2	.0	10.0
H. Imper EBD	*	0	-9	150	-9	*	AG	1558	6.2	.0	10.0
I. Imper EBL	*	-150	-5	0	0	*	AG	18	6.2	.0	10.0
J. Imper WBA	*	150	9	0	9	*	AG	1641	6.2	.0	10.0
K. Imper WBD	*	0	9	-150	9	*	AG	1783	6.2	.0	10.0
L. Imper WBL	*	150	5	0	0	*	AG	255	6.2	.0	10.0
M. Place NBAX	*	7	-750	7	-150	*	AG	521	6.2	.0	10.0
N. Place NBDX	*	7	150	7	750	*	AG	145	6.2	.0	10.0
O. Place SBAX	*	-9	750	-9	150	*	AG	73	6.2	.0	10.0
P. Place SBDX	*	-9	-150	-9	-750	*	AG	534	6.2	.0	10.0
Q. Imper EBAX	*	-750	-9	-150	-9	*	AG	1530	6.2	.0	10.0

R. Imper EBDX	*	150	-9	750	-9	*	AG	1558	6.2	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	1896	6.2	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	1782	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-15	1.8
2. NW	*	-12	16	1.8
3. SW	*	-12	-17	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-15	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-12	150	1.8
11. SW mdblk	*	-12	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-15	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-12	600	1.8
19. SW blk	*	-12	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	2.4	.1	.0	.0	.0	.1	.0	1.0	.3
2. NW	98.	2.1	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	81.	2.2	.0	.0	.0	.0	.2	.0	.0	1.0
4. NE	262.	1.9	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	278.	2.2	.0	.0	.0	.0	.0	.0	.1	1.3
6. WN mdblk	98.	2.1	.0	.0	.0	.0	.0	.0	.2	.2
7. WS mdblk	82.	1.9	.0	.0	.0	.0	.0	.0	1.0	.1
8. EN mdblk	262.	2.0	.0	.0	.0	.0	.0	.0	.2	.2
9. SE mdblk	349.	.9	.3	.0	.2	.0	.2	.0	.1	.0
10. NW mdblk	177.	.7	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	6.	1.3	.0	.0	.0	.0	.7	.0	.0	.0
12. NE mdblk	185.	.8	.0	.1	.0	.0	.0	.0	.0	.0
13. ES blk	277.	2.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	2.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	2.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	4.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.3	.0	.0	.0	.0	.0	.2	.0	.0	.3
2. NW	.0	1.1	.1	.1	.0	.0	.0	.0	.0	.3	.2	.0
3. SW	.0	.3	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
4. NE	.0	.0	1.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
5. ES mdblk	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	.0	.1	1.2	.0	.0	.0	.0	.0	.0	.1	.1	.0
7. WS mdblk	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	.0	1.0	.1	.1	.0	.0	.0	.0	.2	.0	.0	.1
9. SE mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.4	.5	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	1.4
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.0	.0	.5
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	1.3	.0
17. SE blk	.0	.0	.0	.0	.6	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.2	.0	.0	.9	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Kraem NBA	*	11	-150	11	0	*	AG	627	6.2	.0	10.0
B. Kraem NBD	*	11	0	11	150	*	AG	942	6.2	.0	10.0
C. Kraem NBL	*	9	-150	0	0	*	AG	353	6.2	.0	10.0
D. Kraem SBA	*	-12	150	-12	0	*	AG	700	6.2	.0	10.0
E. Kraem SBD	*	-12	0	-12	-150	*	AG	947	6.2	.0	10.0
F. Kraem SBL	*	-9	150	0	0	*	AG	248	6.2	.0	10.0
G. Imper EBA	*	-150	-12	0	-12	*	AG	1397	6.2	.0	10.0
H. Imper EBD	*	0	-12	150	-12	*	AG	1496	6.2	.0	10.0
I. Imper EBL	*	-150	-9	0	0	*	AG	156	6.2	.0	10.0
J. Imper WBA	*	150	12	0	12	*	AG	1614	6.2	.0	10.0
K. Imper WBD	*	0	12	-150	12	*	AG	1918	6.2	.0	10.0
L. Imper WBL	*	150	9	0	0	*	AG	208	6.2	.0	10.0
M. Kraem NBAX	*	11	-750	11	-150	*	AG	980	6.2	.0	10.0
N. Kraem NBDX	*	11	150	11	750	*	AG	942	6.2	.0	10.0
O. Kraem SBAX	*	-12	750	-12	150	*	AG	948	6.2	.0	10.0
P. Kraem SBDX	*	-12	-150	-12	-750	*	AG	947	6.2	.0	10.0
Q. Imper EBAX	*	-750	-12	-150	-12	*	AG	1553	6.2	.0	10.0

R. Imper EBDX	*	150	-12	750	-12	*	AG	1496	6.2	.0	10.0
S. Imper WBAX	*	750	12	150	12	*	AG	1822	6.2	.0	10.0
T. Imper WBDX	*	-150	12	-750	12	*	AG	1918	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-20	1.8
2. NW	*	-21	20	1.8
3. SW	*	-19	-21	1.8
4. NE	*	17	21	1.8
5. ES mdblk	*	150	-20	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-21	150	1.8
11. SW mdblk	*	-19	-150	1.8
12. NE mdblk	*	17	150	1.8
13. ES blk	*	600	-20	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-21	600	1.8
19. SW blk	*	-19	-600	1.8
20. NE blk	*	17	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	2.4	.3	.0	.0	.0	.2	.0	.9	.2
2. NW	99.	2.4	.0	.2	.0	.3	.0	.0	.0	.2
3. SW	81.	2.3	.1	.0	.0	.0	.4	.0	.1	.9
4. NE	261.	2.4	.0	.4	.0	.1	.0	.0	.1	.0
5. ES mdblk	278.	2.1	.0	.0	.0	.0	.0	.0	.1	1.1
6. WN mdblk	98.	2.2	.0	.0	.0	.0	.0	.0	.0	.2
7. WS mdblk	81.	1.9	.0	.0	.0	.0	.0	.0	.9	.0
8. EN mdblk	262.	2.0	.0	.0	.0	.0	.0	.0	.2	.0
9. SE mdblk	352.	1.6	.6	.0	.2	.1	.0	.0	.0	.0
10. NW mdblk	172.	1.4	.1	.0	.0	.5	.0	.1	.0	.0
11. SW mdblk	8.	1.7	.0	.2	.0	.0	.8	.0	.0	.0
12. NE mdblk	188.	1.7	.0	.8	.0	.0	.2	.0	.0	.0
13. ES blk	278.	2.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	2.2	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	2.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.4
2. NW	*	.0	.9	.4	.0	.0	.0	.0	.0	.0	.3	.1	.0
3. SW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
4. NE	*	.0	.1	1.1	.0	.0	.0	.0	.0	.3	.0	.0	.2
5. ES mdblk	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	*	.0	.1	1.3	.0	.0	.0	.0	.0	.0	.2	.0	.0
7. WS mdblk	*	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.2	.0
8. EN mdblk	*	.0	1.0	.1	.0	.0	.0	.0	.0	.2	.0	.0	.1
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.2	.4	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	1.5
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	1.1	.0	.0	.4
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	1.3	.0
17. SE blk	*	.0	.0	.0	.0	1.0	.0	.0	.3	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.3	.8	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.3	.0	.0	.9	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.9	.3	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	*	AG	263	5.6	.0	10.0
B. Valenc NBD	*	9	0	9	150	*	AG	592	5.6	.0	10.0
C. Valenc NBL	*	5	-150	0	0	*	AG	88	5.6	.0	10.0
D. Valenc SBA	*	-9	150	-9	0	*	AG	361	5.6	.0	10.0
E. Valenc SBD	*	-9	0	-9	-150	*	AG	351	5.6	.0	10.0
F. Valenc SBL	*	-5	150	0	0	*	AG	126	5.6	.0	10.0
G. Imper EBA	*	-150	-14	0	-14	*	AG	911	5.6	.0	10.0
H. Imper EBD	*	0	-14	150	-14	*	AG	1074	5.6	.0	10.0
I. Imper EBL	*	-150	-9	0	0	*	AG	238	5.6	.0	10.0
J. Imper WBA	*	150	9	0	9	*	AG	1666	5.6	.0	10.0
K. Imper WBD	*	0	9	-150	9	*	AG	1753	5.6	.0	10.0
L. Imper WBL	*	150	5	0	0	*	AG	117	5.6	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	*	AG	351	5.6	.0	10.0
N. Valenc NBDX	*	9	150	9	750	*	AG	592	5.6	.0	10.0
O. Valenc SBAX	*	-9	750	-9	150	*	AG	487	5.6	.0	10.0
P. Valenc SBDX	*	-9	-150	-9	-750	*	AG	351	5.6	.0	10.0
Q. Imper EBAX	*	-750	-14	-150	-14	*	AG	1149	5.6	.0	10.0

R. Imper EBDX	*	150	-14	750	-14	*	AG	1074	5.6	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	1783	5.6	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	1753	5.6	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-22	1.8
2. NW	*	-17	16	1.8
3. SW	*	-15	-24	1.8
4. NE	*	15	17	1.8
5. ES mdblk	*	150	-22	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-24	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-17	150	1.8
11. SW mdblk	*	-15	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-22	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-24	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-17	600	1.8
19. SW blk	*	-15	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.4	.0	.0	.0	.0	.0	.0	.5	.0
2. NW	98.	1.9	.0	.1	.0	.1	.0	.0	.0	.1
3. SW	81.	1.4	.0	.0	.0	.0	.1	.0	.0	.6
4. NE	262.	1.9	.0	.2	.0	.0	.0	.0	.0	.0
5. ES mdblk	278.	1.4	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	98.	1.8	.0	.0	.0	.0	.0	.0	.0	.2
7. WS mdblk	81.	1.2	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	262.	1.6	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	354.	.8	.2	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.8	.0	.0	.0	.3	.0	.0	.0	.0
11. SW mdblk	6.	.9	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.5	.0	.0	.0	.0	.0	.0
13. ES blk	278.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.8	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.6	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.2	.0	.0	.0	.0	.0	.1	.0	.0	.3
2. NW	.0	.9	.2	.0	.0	.0	.0	.0	.0	.2	.2	.0
3. SW	.0	.1	.0	.0	.0	.0	.0	.0	.0	.1	.3	.0
4. NE	.0	.0	.9	.0	.0	.0	.0	.0	.2	.0	.0	.2
5. ES mdblk	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	.0	.1	1.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	.0	.9	.1	.0	.0	.0	.0	.0	.1	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.4	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	1.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.4
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	1.1	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.1	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	.4	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.6	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Rose NBA	*	7	-150	7	0	*	AG	559	6.2	.0	10.0
B. Rose NBD	*	7	0	7	150	*	AG	934	6.2	.0	10.0
C. Rose NBL	*	5	-150	0	0	*	AG	243	6.2	.0	10.0
D. Rose SBA	*	-9	150	-9	0	*	AG	370	6.2	.0	10.0
E. Rose SBD	*	-9	0	-9	-150	*	AG	738	6.2	.0	10.0
F. Rose SBL	*	-5	150	0	0	*	AG	754	6.2	.0	10.0
G. Imper EBA	*	-150	-9	0	-9	*	AG	1607	6.2	.0	10.0
H. Imper EBD	*	0	-9	150	-9	*	AG	2286	6.2	.0	10.0
I. Imper EBL	*	-150	-5	0	0	*	AG	42	6.2	.0	10.0
J. Imper WBA	*	150	9	0	9	*	AG	1568	6.2	.0	10.0
K. Imper WBD	*	0	9	-150	9	*	AG	1361	6.2	.0	10.0
L. Imper WBL	*	150	5	0	0	*	AG	176	6.2	.0	10.0
M. Rose NBAX	*	7	-750	7	-150	*	AG	802	6.2	.0	10.0
N. Rose NBDX	*	7	150	7	750	*	AG	934	6.2	.0	10.0
O. Rose SBAX	*	-9	750	-9	150	*	AG	1124	6.2	.0	10.0
P. Rose SBDX	*	-9	-150	-9	-750	*	AG	738	6.2	.0	10.0
Q. Imper EBAX	*	-750	-9	-150	-9	*	AG	1649	6.2	.0	10.0

R. Imper EBDX	*	150	-9	750	-9	*	AG	2286	6.2	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	1744	6.2	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	1361	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-15	1.8
2. NW	*	-17	16	1.8
3. SW	*	-15	-17	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-15	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-17	150	1.8
11. SW mdblk	*	-15	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-15	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-17	600	1.8
19. SW blk	*	-15	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	2.8	.1	.7	.0	.0	.0	.3	.0	.9
2. NW	98.	2.6	.0	.2	.0	.1	.0	.2	.0	.3
3. SW	82.	2.6	.1	.0	.0	.0	.3	.0	.0	1.2
4. NE	262.	2.3	.0	.4	.0	.0	.0	.2	.2	.0
5. ES mdblk	278.	2.8	.0	.0	.0	.0	.0	.0	.1	1.8
6. WN mdblk	97.	2.1	.0	.0	.0	.0	.0	.0	.2	.3
7. WS mdblk	82.	2.1	.0	.0	.0	.0	.0	.0	1.0	.1
8. EN mdblk	261.	2.1	.0	.0	.0	.0	.0	.0	.2	.3
9. SE mdblk	354.	1.6	.5	.1	.2	.0	.1	.1	.0	.0
10. NW mdblk	170.	1.4	.0	.2	.0	.3	.0	.4	.0	.1
11. SW mdblk	7.	1.6	.0	.1	.0	.0	.7	.1	.0	.0
12. NE mdblk	188.	1.8	.0	.8	.0	.0	.1	.2	.0	.0
13. ES blk	278.	2.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	2.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.9	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	2.1	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.3	.0	.0	.0	.1	.2	.0	.0	.0	.0	.0
2. NW	*	.0	1.0	.2	.0	.0	.0	.0	.0	.0	.4	.2	.0
3. SW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
4. NE	*	.0	.0	.9	.0	.0	.0	.0	.0	.3	.0	.0	.2
5. ES mdblk	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. WN mdblk	*	.0	.1	1.0	.0	.0	.0	.0	.0	.0	.2	.1	.0
7. WS mdblk	*	.0	.2	.2	.0	.0	.0	.0	.0	.0	.1	.2	.0
8. EN mdblk	*	.0	1.0	.0	.1	.0	.0	.0	.0	.1	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.9	.5	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	1.1
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	1.2	.0	.0	.4
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	1.2	.0
17. SE blk	*	.0	.0	.0	.0	.8	.0	.0	.3	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.3	.9	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.3	.0	.0	.8	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.9	.4	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	7	-150	7	0	*	AG	169	6.2	.0	10.0
B. Valenc NBD	*	7	0	7	150	*	AG	337	6.2	.0	10.0
C. Valenc NBL	*	5	-150	0	0	*	AG	31	6.2	.0	10.0
D. Valenc SBA	*	-7	150	-7	0	*	AG	679	6.2	.0	10.0
E. Valenc SBD	*	-7	0	-7	-150	*	AG	648	6.2	.0	10.0
F. Valenc SBL	*	-5	150	0	0	*	AG	553	6.2	.0	10.0
G. Birch EBA	*	-150	-7	0	-7	*	AG	476	6.2	.0	10.0
H. Birch EBD	*	0	-7	150	-7	*	AG	919	6.2	.0	10.0
I. Birch EBL	*	-150	-5	0	0	*	AG	39	6.2	.0	10.0
J. Birch WBA	*	150	7	0	7	*	AG	623	6.2	.0	10.0
K. Birch WBD	*	0	7	-150	7	*	AG	673	6.2	.0	10.0
L. Birch WBL	*	150	5	0	0	*	AG	7	6.2	.0	10.0
M. Valenc NBAX	*	7	-750	7	-150	*	AG	200	6.2	.0	10.0
N. Valenc NBDX	*	7	150	7	750	*	AG	337	6.2	.0	10.0
O. Valenc SBAX	*	-7	750	-7	150	*	AG	1232	6.2	.0	10.0
P. Valenc SBDX	*	-7	-150	-7	-750	*	AG	648	6.2	.0	10.0
Q. Birch EBAX	*	-750	-7	-150	-7	*	AG	515	6.2	.0	10.0

R. Birch EBDX	*	150	-7	750	-7	*	AG	919	6.2	.0	10.0
S. Birch WBAX	*	750	7	150	7	*	AG	630	6.2	.0	10.0
T. Birch WBDX	*	-150	7	-750	7	*	AG	673	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-14	1.8
2. NW	*	-14	14	1.8
3. SW	*	-14	-14	1.8
4. NE	*	14	14	1.8
5. ES mdblk	*	150	-14	1.8
6. WN mdblk	*	-150	14	1.8
7. WS mdblk	*	-150	-14	1.8
8. EN mdblk	*	150	14	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-14	1.8
14. WN blk	*	-600	14	1.8
15. WS blk	*	-600	-14	1.8
16. EN blk	*	600	14	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	352.	1.5	.0	.3	.0	.2	.0	.2	.0	.4
2. NW	97.	1.6	.0	.0	.0	.3	.0	.2	.0	.2
3. SW	7.	1.6	.0	.0	.0	.5	.0	.3	.2	.0
4. NE	263.	1.5	.0	.1	.0	.2	.0	.2	.1	.0
5. ES mdblk	278.	1.4	.0	.0	.0	.0	.0	.0	.0	.8
6. WN mdblk	96.	1.2	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	84.	1.1	.0	.0	.0	.0	.0	.0	.4	.1
8. EN mdblk	263.	1.2	.0	.0	.0	.0	.0	.0	.0	.2
9. SE mdblk	354.	.9	.2	.0	.0	.1	.1	.0	.0	.0
10. NW mdblk	171.	1.4	.0	.0	.0	.6	.0	.4	.0	.0
11. SW mdblk	6.	1.2	.0	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	188.	1.0	.0	.3	.0	.2	.1	.2	.0	.0
13. ES blk	277.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	96.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	354.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	1.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.1	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
2. NW	.0	.5	.0	.0	.0	.0	.0	.0	.0	.2	.1	.0
3. SW	.0	.0	.2	.0	.0	.1	.2	.0	.0	.0	.0	.0
4. NE	.0	.0	.5	.0	.0	.0	.0	.0	.1	.0	.0	.1
5. ES mdblk	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.1	.0	.0
7. WS mdblk	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.3	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.3
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.7	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.3	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.2	1.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.7	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.4	.5	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2004 NP7
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	*	AG	223	6.2	.0	10.0
B. Valenc NBD	*	9	0	9	150	*	AG	168	6.2	.0	10.0
C. Valenc NBL	*	5	-150	0	0	*	AG	87	6.2	.0	10.0
D. Valenc SBA	*	-7	150	-7	0	*	AG	358	6.2	.0	10.0
E. Valenc SBD	*	-7	0	-7	-150	*	AG	1168	6.2	.0	10.0
F. Valenc SBL	*	-5	150	0	0	*	AG	3	6.2	.0	10.0
G. Carbon EBA	*	-150	-9	0	-9	*	AG	522	6.2	.0	10.0
H. Carbon EBD	*	0	-9	150	-9	*	AG	289	6.2	.0	10.0
I. Carbon EBL	*	-150	-5	0	0	*	AG	59	6.2	.0	10.0
J. Carbon WBA	*	150	12	0	12	*	AG	740	6.2	.0	10.0
K. Carbon WBD	*	0	12	-150	12	*	AG	1025	6.2	.0	10.0
L. Carbon WBL	*	150	9	0	0	*	AG	658	6.2	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	*	AG	310	6.2	.0	10.0
N. Valenc NBDX	*	9	150	9	750	*	AG	168	6.2	.0	10.0
O. Valenc SBAX	*	-7	750	-7	150	*	AG	361	6.2	.0	10.0
P. Valenc SBDX	*	-7	-150	-7	-750	*	AG	1168	6.2	.0	10.0
Q. Carbon EBAX	*	-750	-9	-150	-9	*	AG	581	6.2	.0	10.0

R. Carbon EBDX	*	150	-9	750	-9	*	AG	289	6.2	.0	10.0
S. Carbon WBAX	*	750	12	150	12	*	AG	1398	6.2	.0	10.0
T. Carbon WBDX	*	-150	12	-750	12	*	AG	1025	6.2	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2004 NP7
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-16	1.8
2. NW	*	-14	20	1.8
3. SW	*	-14	-17	1.8
4. NE	*	15	21	1.8
5. ES mdblk	*	150	-16	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-16	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2004 NP7
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	1.3	.0	.0	.0	.0	.2	.0	.4	.0
2. NW	174.	1.7	.0	.0	.0	.0	.7	.0	.1	.0
3. SW	80.	1.4	.0	.0	.0	.0	.5	.0	.0	.2
4. NE	188.	1.3	.2	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	278.	1.0	.0	.0	.0	.0	.0	.0	.0	.3
6. WN mdblk	97.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	1.0	.0	.0	.0	.0	.0	.0	.4	.0
8. EN mdblk	261.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	347.	.8	.2	.0	.0	.0	.3	.0	.0	.0
10. NW mdblk	175.	.9	.0	.0	.0	.3	.1	.0	.0	.0
11. SW mdblk	9.	1.4	.0	.0	.0	.0	1.0	.0	.0	.0
12. NE mdblk	186.	.8	.0	.2	.0	.0	.2	.0	.0	.0
13. ES blk	277.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	1.3	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.9	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.7	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2004 NP7
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)											
	RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1.	SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.	NW	.0	.0	.4	.0	.1	.0	.0	.2	.0	.0	.0	.0
3.	SW	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.3	.0
4.	NE	.0	.3	.0	.2	.0	.0	.0	.2	.0	.0	.0	.0
5.	ES mdblk	.0	.0	.2	.2	.0	.0	.0	.0	.0	.0	.0	.1
6.	WN mdblk	.0	.0	.8	.1	.0	.0	.0	.0	.0	.0	.1	.0
7.	WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
8.	EN mdblk	.0	.5	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
9.	SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	NW mdblk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
11.	SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12.	NE mdblk	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
13.	ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.4	.0
14.	WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.9
15.	WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.3
16.	EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	1.0	.0
17.	SE blk	.0	.0	.0	.0	.3	.0	.0	.4	.0	.0	.0	.0
18.	NW blk	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
19.	SW blk	.0	.0	.0	.0	.1	.0	.0	1.1	.0	.0	.0	.0
20.	NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

OLINDA ALPHA LANDFILL EXPANSION

AIR QUALITY CO HOT SPOT ANALYSIS

CALINE4 MODEL PRINTOUTS

FUTURE (2013) BASELINE CONDITIONS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Assoc NBA	12	-150	12	0	AG	230	2.7	.0	10.0
B. Assoc NBD	12	0	12	150	AG	410	2.7	.0	10.0
C. Assoc NBL	9	-150	0	0	AG	280	2.7	.0	10.0
D. Assoc SBA	-12	150	-12	0	AG	460	2.7	.0	10.0
E. Assoc SBD	-12	0	-12	-150	AG	540	2.7	.0	10.0
F. Assoc SBL	-9	150	0	0	AG	190	2.7	.0	10.0
G. Imper EBA	-150	-12	0	-12	AG	2226	2.7	.0	10.0
H. Imper EBD	0	-12	150	-12	AG	2316	2.7	.0	10.0
I. Imper EBL	-150	-9	0	0	AG	150	2.7	.0	10.0
J. Imper WBA	150	12	0	12	AG	2016	2.7	.0	10.0
K. Imper WBD	0	12	-150	12	AG	2376	2.7	.0	10.0
L. Imper WBL	150	9	0	0	AG	90	2.7	.0	10.0
M. Assoc NBAX	12	-750	12	-150	AG	510	2.7	.0	10.0
N. Assoc NBDX	12	150	12	750	AG	410	2.7	.0	10.0
O. Assoc SBAX	-12	750	-12	150	AG	650	2.7	.0	10.0
P. Assoc SBDX	-12	-150	-12	-750	AG	540	2.7	.0	10.0
Q. Imper EBAX	-750	-12	-150	-12	AG	2376	2.7	.0	10.0

R. Imper EBDX	*	150	-12	750	-12	*	AG	2316	2.7	.0	10.0
S. Imper WBAX	*	750	12	150	12	*	AG	2106	2.7	.0	10.0
T. Imper WBDX	*	-150	12	-750	12	*	AG	2376	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	21	-20	1.8
2. NW	*	-21	20	1.8
3. SW	*	-19	-21	1.8
4. NE	*	19	21	1.8
5. ES mdblk	*	150	-20	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	21	-150	1.8
10. NW mdblk	*	-21	150	1.8
11. SW mdblk	*	-19	-150	1.8
12. NE mdblk	*	19	150	1.8
13. ES blk	*	600	-20	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	21	-600	1.8
18. NW blk	*	-21	600	1.8
19. SW blk	*	-19	-600	1.8
20. NE blk	*	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.2	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	99.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	81.	1.1	.0	.0	.0	.0	.0	.0	.0	.5
4. NE	261.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	1.1	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.1	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	81.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	351.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	.0	.5	.2	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	.0	.0	.5	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.7	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.8
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17. SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Place NBA	*	7	-150	7	0	*	AG	290	2.7	.0	10.0
B. Place NBD	*	7	0	7	150	*	AG	80	2.7	.0	10.0
C. Place NBL	*	5	-150	0	0	*	AG	140	2.7	.0	10.0
D. Place SBA	*	-5	150	-5	0	*	AG	60	2.7	.0	10.0
E. Place SBD	*	-5	0	-5	-150	*	AG	790	2.7	.0	10.0
F. Place SBL	*	-5	150	0	0	*	AG	10	2.7	.0	10.0
G. Imper EBA	*	-150	-11	0	-11	*	AG	3226	2.7	.0	10.0
H. Imper EBD	*	0	-11	150	-11	*	AG	2896	2.7	.0	10.0
I. Imper EBL	*	-150	-5	0	0	*	AG	10	2.7	.0	10.0
J. Imper WBA	*	150	9	0	9	*	AG	2376	2.7	.0	10.0
K. Imper WBD	*	0	9	-150	9	*	AG	2516	2.7	.0	10.0
L. Imper WBL	*	150	5	0	0	*	AG	170	2.7	.0	10.0
M. Place NBAX	*	7	-750	7	-150	*	AG	430	2.7	.0	10.0
N. Place NBDX	*	7	150	7	750	*	AG	80	2.7	.0	10.0
O. Place SBAX	*	-5	750	-5	150	*	AG	70	2.7	.0	10.0
P. Place SBDX	*	-5	-150	-5	-750	*	AG	790	2.7	.0	10.0
Q. Imper EBAX	*	-750	-11	-150	-11	*	AG	3236	2.7	.0	10.0

R. Imper EBDX	*	150	-11	750	-11	*	AG	2896	2.7	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	2546	2.7	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	2516	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-19	1.8
2. NW	*	-12	15	1.8
3. SW	*	-12	-21	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-19	1.8
6. WN mdblk	*	-150	15	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-12	150	1.8
11. SW mdblk	*	-12	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-19	1.8
14. WN blk	*	-600	15	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-12	600	1.8
19. SW blk	*	-12	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.4	.0	.0	.0	.0	.0	.0	.8	.0
2. NW	98.	1.3	.0	.0	.0	.0	.0	.0	.0	.1
3. SW	80.	1.2	.0	.0	.0	.0	.1	.0	.0	.6
4. NE	261.	1.1	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	278.	1.2	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.4	.0	.0	.0	.0	.0	.0	.2	.1
7. WS mdblk	82.	1.1	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	1.2	.0	.0	.0	.0	.0	.0	.2	.1
9. SE mdblk	348.	.5	.1	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	10.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	184.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	278.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)										
RECEPTOR	*	I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	*	.0	.7	.1	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	*	.0	.0	.6	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.3	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.9
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.2
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.7	.0
17. SE blk	*	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Kraem NBA	*	12	-150	12	0	* AG	627	2.7	.0	10.0
B. Kraem NBD	*	12	0	12	150	* AG	1264	2.7	.0	10.0
C. Kraem NBL	*	9	-150	0	0	* AG	353	2.7	.0	10.0
D. Kraem SBA	*	-12	150	-12	0	* AG	1960	2.7	.0	10.0
E. Kraem SBD	*	-12	0	-12	-150	* AG	2065	2.7	.0	10.0
F. Kraem SBL	*	-9	150	0	0	* AG	330	2.7	.0	10.0
G. Imper EBA	*	-150	-12	0	-12	* AG	1866	2.7	.0	10.0
H. Imper EBD	*	0	-12	150	-12	* AG	1809	2.7	.0	10.0
I. Imper EBL	*	-150	-9	0	0	* AG	290	2.7	.0	10.0
J. Imper WBA	*	150	14	0	14	* AG	1896	2.7	.0	10.0
K. Imper WBD	*	0	14	-150	14	* AG	2289	2.7	.0	10.0
L. Imper WBL	*	150	9	0	0	* AG	105	2.7	.0	10.0
M. Kraem NBAX	*	12	-750	12	-150	* AG	980	2.7	.0	10.0
N. Kraem NBDX	*	12	150	12	750	* AG	1264	2.7	.0	10.0
O. Kraem SBAX	*	-12	750	-12	150	* AG	2290	2.7	.0	10.0
P. Kraem SBDX	*	-12	-150	-12	-750	* AG	2065	2.7	.0	10.0
Q. Imper EBAX	*	-750	-12	-150	-12	* AG	2156	2.7	.0	10.0

R. Imper EBDX	*	150	-12	750	-12	*	AG	1809	2.7	.0	10.0
S. Imper WBAX	*	750	14	150	14	*	AG	2001	2.7	.0	10.0
T. Imper WBDX	*	-150	14	-750	14	*	AG	2289	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	21	-20	1.8
2. NW	*	-21	22	1.8
3. SW	*	-20	-21	1.8
4. NE	*	20	24	1.8
5. ES mdblk	*	150	-20	1.8
6. WN mdblk	*	-150	22	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	24	1.8
9. SE mdblk	*	21	-150	1.8
10. NW mdblk	*	-21	150	1.8
11. SW mdblk	*	-20	-150	1.8
12. NE mdblk	*	20	150	1.8
13. ES blk	*	600	-20	1.8
14. WN blk	*	-600	22	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	24	1.8
17. SE blk	*	21	-600	1.8
18. NW blk	*	-21	600	1.8
19. SW blk	*	-20	-600	1.8
20. NE blk	*	20	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.2	.1	.0	.0	.0	.1	.0	.4	.1
2. NW	171.	1.3	.0	.0	.0	.1	.4	.0	.1	.0
3. SW	9.	1.4	.0	.0	.0	.4	.2	.0	.3	.0
4. NE	260.	1.2	.0	.2	.0	.1	.0	.0	.0	.0
5. ES mdblk	278.	1.0	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	99.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	80.	1.0	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	262.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.7	.2	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	171.	1.0	.0	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	8.	1.1	.0	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	189.	.9	.0	.4	.0	.0	.1	.0	.0	.0
13. ES blk	278.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	172.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	188.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.5	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.6
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.7	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.7	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	* AG	247	2.4	.0	10.0
B. Valenc NBD	*	9	0	9	150	* AG	416	2.4	.0	10.0
C. Valenc NBL	*	5	-150	0	0	* AG	100	2.4	.0	10.0
D. Valenc SBA	*	-9	150	-9	0	* AG	488	2.4	.0	10.0
E. Valenc SBD	*	-9	0	-9	-150	* AG	847	2.4	.0	10.0
F. Valenc SBL	*	-5	150	0	0	* AG	628	2.4	.0	10.0
G. Imper EBA	*	-150	-14	0	-14	* AG	1510	2.4	.0	10.0
H. Imper EBD	*	0	-14	150	-14	* AG	2188	2.4	.0	10.0
I. Imper EBL	*	-150	-9	0	0	* AG	171	2.4	.0	10.0
J. Imper WBA	*	150	9	0	9	* AG	2198	2.4	.0	10.0
K. Imper WBD	*	0	9	-150	9	* AG	2261	2.4	.0	10.0
L. Imper WBL	*	150	5	0	0	* AG	370	2.4	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	* AG	347	2.4	.0	10.0
N. Valenc NBDX	*	9	150	9	750	* AG	416	2.4	.0	10.0
O. Valenc SBAX	*	-9	750	-9	150	* AG	1116	2.4	.0	10.0
P. Valenc SBDX	*	-9	-150	-9	-750	* AG	847	2.4	.0	10.0
Q. Imper EBAX	*	-750	-14	-150	-14	* AG	1681	2.4	.0	10.0

R. Imper EBDX	*	150	-14	750	-14	*	AG	2188	2.4	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	2568	2.4	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	2261	2.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-22	1.8
2. NW	*	-17	16	1.8
3. SW	*	-15	-24	1.8
4. NE	*	15	17	1.8
5. ES mdblk	*	150	-22	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-24	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-17	150	1.8
11. SW mdblk	*	-15	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-22	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-24	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-17	600	1.8
19. SW blk	*	-15	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	.8	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	99.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	80.	.9	.0	.0	.0	.0	.1	.0	.0	.4
4. NE	261.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.9	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	82.	.7	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	261.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.1	.0	.1	.0	.0
11. SW mdblk	7.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	.9	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)											
	RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1.	SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.	NW	.0	.5	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3.	SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4.	NE	.0	.0	.5	.0	.0	.0	.0	.0	.1	.0	.0	.0
5.	ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6.	WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7.	WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8.	EN mdblk	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9.	SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11.	SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12.	NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13.	ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14.	WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15.	WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16.	EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17.	SE blk	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	.0
18.	NW blk	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0
19.	SW blk	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20.	NE blk	.0	.0	.0	.0	.0	.2	.1	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	* AG	106	2.7	.0	10.0
B. Valenc NBD	*	9	0	9	150	* AG	304	2.7	.0	10.0
C. Valenc NBL	*	5	-150	0	0	* AG	50	2.7	.0	10.0
D. Valenc SBA	*	-7	150	-7	0	* AG	1276	2.7	.0	10.0
E. Valenc SBD	*	-7	0	-7	-150	* AG	1286	2.7	.0	10.0
F. Valenc SBL	*	-5	150	0	0	* AG	498	2.7	.0	10.0
G. Birch EBA	*	-150	-9	0	-9	* AG	910	2.7	.0	10.0
H. Birch EBD	*	0	-9	150	-9	* AG	1328	2.7	.0	10.0
I. Birch EBL	*	-150	-5	0	0	* AG	40	2.7	.0	10.0
J. Birch WBA	*	150	5	0	5	* AG	708	2.7	.0	10.0
K. Birch WBD	*	0	5	-150	5	* AG	680	2.7	.0	10.0
L. Birch WBL	*	150	5	0	0	* AG	10	2.7	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	* AG	156	2.7	.0	10.0
N. Valenc NBDX	*	9	150	9	750	* AG	304	2.7	.0	10.0
O. Valenc SBAX	*	-7	750	-7	150	* AG	1774	2.7	.0	10.0
P. Valenc SBDX	*	-7	-150	-7	-750	* AG	1286	2.7	.0	10.0
Q. Birch EBAX	*	-750	-9	-150	-9	* AG	950	2.7	.0	10.0

R. Birch EBDX	*	150	-9	750	-9	*	AG	1328	2.7	.0	10.0
S. Birch WBAX	*	750	5	150	5	*	AG	718	2.7	.0	10.0
T. Birch WBDX	*	-150	5	-750	5	*	AG	680	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-15	1.8
2. NW	*	-14	12	1.8
3. SW	*	-14	-17	1.8
4. NE	*	15	12	1.8
5. ES mdblk	*	150	-15	1.8
6. WN mdblk	*	-150	12	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	12	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-15	1.8
14. WN blk	*	-600	12	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	12	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	.7	.0	.0	.0	.1	.0	.0	.0	.2
2. NW	98.	.9	.0	.0	.0	.2	.0	.0	.0	.1
3. SW	7.	1.0	.0	.0	.0	.4	.1	.1	.1	.0
4. NE	262.	.7	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	278.	.8	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.6	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.8	.0	.0	.0	.5	.0	.1	.0	.0
11. SW mdblk	6.	.7	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	189.	.5	.0	.1	.0	.1	.0	.0	.0	.0
13. ES blk	277.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	*	.0	.2	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.1	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.3
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.1
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
17. SE blk	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	9	-150	9	0	AG	110	2.7	.0	10.0
B. Valenc NBD	9	0	9	150	AG	121	2.7	.0	10.0
C. Valenc NBL	5	-150	0	0	AG	80	2.7	.0	10.0
D. Valenc SBA	-7	150	-7	0	AG	185	2.7	.0	10.0
E. Valenc SBD	-7	0	-7	-150	AG	1654	2.7	.0	10.0
F. Valenc SBL	-5	150	0	0	AG	20	2.7	.0	10.0
G. Carbon EBA	-150	-9	0	-9	AG	850	2.7	.0	10.0
H. Carbon EBD	0	-9	150	-9	AG	630	2.7	.0	10.0
I. Carbon EBL	-150	-5	0	0	AG	111	2.7	.0	10.0
J. Carbon WBA	150	12	0	12	AG	2340	2.7	.0	10.0
K. Carbon WBD	0	12	-150	12	AG	2521	2.7	.0	10.0
L. Carbon WBL	150	9	0	0	AG	1230	2.7	.0	10.0
M. Valenc NBAX	9	-750	9	-150	AG	190	2.7	.0	10.0
N. Valenc NBDX	9	150	9	750	AG	121	2.7	.0	10.0
O. Valenc SBAX	-7	750	-7	150	AG	205	2.7	.0	10.0
P. Valenc SBDX	-7	-150	-7	-750	AG	1654	2.7	.0	10.0
Q. Carbon EBAX	-750	-9	-150	-9	AG	961	2.7	.0	10.0

R. Carbon EBDX	*	150	-9	750	-9	*	AG	630	2.7	.0	10.0
S. Carbon WBAX	*	750	12	150	12	*	AG	3570	2.7	.0	10.0
T. Carbon WBDX	*	-150	12	-750	12	*	AG	2521	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-16	1.8
2. NW	*	-14	20	1.8
3. SW	*	-14	-17	1.8
4. NE	*	15	21	1.8
5. ES mdblk	*	150	-16	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-16	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.8	.0	.0	.0	.0	.1	.0	.2	.0
2. NW	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	79.	1.1	.0	.0	.0	.0	.3	.0	.0	.2
4. NE	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.7	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.8	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	260.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	341.	.4	.0	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	10.	.8	.0	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	186.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	175.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.8	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	185.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 NP6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	*	.0	.6	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
3. SW	*	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	*	.0	.6	.0	.1	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	*	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
8. EN mdblk	*	.0	.6	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.4	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.8
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
17. SE blk	*	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

OLINDA ALPHA LANDFILL EXPANSION

AIR QUALITY CO HOT SPOT ANALYSIS

CALINE4 MODEL PRINTOUTS

FUTURE (2013) WITH PROJECT CONDITIONS

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Assoc NBA	*	12	-150	12	0	* AG	230	2.7	.0	10.0
B. Assoc NBD	*	12	0	12	150	* AG	410	2.7	.0	10.0
C. Assoc NBL	*	9	-150	0	0	* AG	280	2.7	.0	10.0
D. Assoc SBA	*	-12	150	-12	0	* AG	460	2.7	.0	10.0
E. Assoc SBD	*	-12	0	-12	-150	* AG	540	2.7	.0	10.0
F. Assoc SBL	*	-9	150	0	0	* AG	190	2.7	.0	10.0
G. Imper EBA	*	-150	-12	0	-12	* AG	2300	2.7	.0	10.0
H. Imper EBD	*	0	-12	150	-12	* AG	2390	2.7	.0	10.0
I. Imper EBL	*	-150	-9	0	0	* AG	150	2.7	.0	10.0
J. Imper WBA	*	150	12	0	12	* AG	2090	2.7	.0	10.0
K. Imper WBD	*	0	12	-150	12	* AG	2450	2.7	.0	10.0
L. Imper WBL	*	150	9	0	0	* AG	90	2.7	.0	10.0
M. Assoc NBAX	*	12	-750	12	-150	* AG	510	2.7	.0	10.0
N. Assoc NBDX	*	12	150	12	750	* AG	410	2.7	.0	10.0
O. Assoc SBAX	*	-12	750	-12	150	* AG	650	2.7	.0	10.0
P. Assoc SBDX	*	-12	-150	-12	-750	* AG	540	2.7	.0	10.0
Q. Imper EBAX	*	-750	-12	-150	-12	* AG	2450	2.7	.0	10.0

R.	Imper EBDX	*	150	-12	750	-12	*	AG	2390	2.7	.0	10.0
S.	Imper WBAX	*	750	12	150	12	*	AG	2180	2.7	.0	10.0
T.	Imper WBDX	*	-150	12	-750	12	*	AG	2450	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	21	-20	1.8
2. NW	*	-21	20	1.8
3. SW	*	-19	-21	1.8
4. NE	*	19	21	1.8
5. ES mdblk	*	150	-20	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	21	-150	1.8
10. NW mdblk	*	-21	150	1.8
11. SW mdblk	*	-19	-150	1.8
12. NE mdblk	*	19	150	1.8
13. ES blk	*	600	-20	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	21	-600	1.8
18. NW blk	*	-21	600	1.8
19. SW blk	*	-19	-600	1.8
20. NE blk	*	19	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.2	.0	.0	.0	.0	.0	.0	.5	.2
2. NW	99.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	81.	1.1	.0	.0	.0	.0	.0	.0	.0	.5
4. NE	261.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	1.1	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.1	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	81.	1.0	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	1.0	.0	.0	.0	.0	.0	.0	.1	.0
9. SE mdblk	351.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.5	.0	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	7.	.5	.0	.0	.0	.0	.2	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P1
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)											
	RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1.	SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.	NW	.0	.5	.2	.0	.0	.0	.0	.0	.0	.2	.0	.0
3.	SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4.	NE	.0	.0	.5	.0	.0	.0	.0	.0	.2	.0	.0	.0
5.	ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6.	WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7.	WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8.	EN mdblk	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9.	SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11.	SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12.	NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13.	ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.2	.0
14.	WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.8
15.	WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.2
16.	EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17.	SE blk	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
18.	NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19.	SW blk	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0
20.	NE blk	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Place NBA	*	7	-150	7	0	* AG	290	2.7	.0	10.0
B. Place NBD	*	7	0	7	150	* AG	80	2.7	.0	10.0
C. Place NBL	*	5	-150	0	0	* AG	140	2.7	.0	10.0
D. Place SBA	*	-5	150	-5	0	* AG	60	2.7	.0	10.0
E. Place SBD	*	-5	0	-5	-150	* AG	790	2.7	.0	10.0
F. Place SBL	*	-5	150	0	0	* AG	10	2.7	.0	10.0
G. Imper EBA	*	-150	-11	0	-11	* AG	3300	2.7	.0	10.0
H. Imper EBD	*	0	-11	150	-11	* AG	2970	2.7	.0	10.0
I. Imper EBL	*	-150	-5	0	0	* AG	10	2.7	.0	10.0
J. Imper WBA	*	150	9	0	9	* AG	2450	2.7	.0	10.0
K. Imper WBD	*	0	9	-150	9	* AG	2590	2.7	.0	10.0
L. Imper WBL	*	150	5	0	0	* AG	170	2.7	.0	10.0
M. Place NBAX	*	7	-750	7	-150	* AG	430	2.7	.0	10.0
N. Place NBDX	*	7	150	7	750	* AG	80	2.7	.0	10.0
O. Place SBAX	*	-5	750	-5	150	* AG	70	2.7	.0	10.0
P. Place SBDX	*	-5	-150	-5	-750	* AG	790	2.7	.0	10.0
Q. Imper EBAX	*	-750	-11	-150	-11	* AG	3310	2.7	.0	10.0

R. Imper EBDX	*	150	-11	750	-11	*	AG	2970	2.7	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	2620	2.7	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	2590	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	14	-19	1.8
2. NW	*	-12	15	1.8
3. SW	*	-12	-21	1.8
4. NE	*	14	17	1.8
5. ES mdblk	*	150	-19	1.8
6. WN mdblk	*	-150	15	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	14	-150	1.8
10. NW mdblk	*	-12	150	1.8
11. SW mdblk	*	-12	-150	1.8
12. NE mdblk	*	14	150	1.8
13. ES blk	*	600	-19	1.8
14. WN blk	*	-600	15	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	14	-600	1.8
18. NW blk	*	-12	600	1.8
19. SW blk	*	-12	-600	1.8
20. NE blk	*	14	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.4	.0	.0	.0	.0	.0	.0	.8	.0
2. NW	99.	1.3	.0	.0	.0	.0	.0	.0	.0	.2
3. SW	80.	1.2	.0	.0	.0	.0	.1	.0	.0	.6
4. NE	261.	1.2	.0	.0	.0	.0	.0	.0	.2	.0
5. ES mdblk	278.	1.2	.0	.0	.0	.0	.0	.0	.0	.7
6. WN mdblk	99.	1.4	.0	.0	.0	.0	.0	.0	.2	.1
7. WS mdblk	82.	1.1	.0	.0	.0	.0	.0	.0	.6	.0
8. EN mdblk	261.	1.2	.0	.0	.0	.0	.0	.0	.2	.1
9. SE mdblk	348.	.5	.1	.0	.0	.0	.1	.0	.0	.0
10. NW mdblk	177.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	10.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	184.	.4	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	278.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.4	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.5	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	177.	.2	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	183.	.2	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P2
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.2
2. NW	*	.0	.7	.2	.0	.0	.0	.0	.0	.0	.2	.0	.0
3. SW	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	*	.0	.0	.6	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.8	.3	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.9
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.8	.0	.0	.3
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.7	.0
17. SE blk	*	.0	.0	.0	.0	.2	.0	.0	.2	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Kraem NBA	*	12	-150	12	0	* AG	627	2.7	.0	10.0
B. Kraem NBD	*	12	0	12	150	* AG	1264	2.7	.0	10.0
C. Kraem NBL	*	9	-150	0	0	* AG	353	2.7	.0	10.0
D. Kraem SBA	*	-12	150	-12	0	* AG	1960	2.7	.0	10.0
E. Kraem SBD	*	-12	0	-12	-150	* AG	2070	2.7	.0	10.0
F. Kraem SBL	*	-9	150	0	0	* AG	330	2.7	.0	10.0
G. Imper EBA	*	-150	-12	0	-12	* AG	1940	2.7	.0	10.0
H. Imper EBD	*	0	-12	150	-12	* AG	1883	2.7	.0	10.0
I. Imper EBL	*	-150	-9	0	0	* AG	290	2.7	.0	10.0
J. Imper WBA	*	150	14	0	14	* AG	1970	2.7	.0	10.0
K. Imper WBD	*	0	14	-150	14	* AG	2363	2.7	.0	10.0
L. Imper WBL	*	150	9	0	0	* AG	110	2.7	.0	10.0
M. Kraem NBAX	*	12	-750	12	-150	* AG	980	2.7	.0	10.0
N. Kraem NBDX	*	12	150	12	750	* AG	1264	2.7	.0	10.0
O. Kraem SBAX	*	-12	750	-12	150	* AG	2290	2.7	.0	10.0
P. Kraem SBDX	*	-12	-150	-12	-750	* AG	2070	2.7	.0	10.0
Q. Imper EBAX	*	-750	-12	-150	-12	* AG	2230	2.7	.0	10.0

R. Imper EBDX	*	150	-12	750	-12	*	AG	1883	2.7	.0	10.0
S. Imper WBAX	*	750	14	150	14	*	AG	2080	2.7	.0	10.0
T. Imper WBDX	*	-150	14	-750	14	*	AG	2363	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	21	-20	1.8
2. NW	*	-21	22	1.8
3. SW	*	-20	-21	1.8
4. NE	*	20	24	1.8
5. ES mdblk	*	150	-20	1.8
6. WN mdblk	*	-150	22	1.8
7. WS mdblk	*	-150	-21	1.8
8. EN mdblk	*	150	24	1.8
9. SE mdblk	*	21	-150	1.8
10. NW mdblk	*	-21	150	1.8
11. SW mdblk	*	-20	-150	1.8
12. NE mdblk	*	20	150	1.8
13. ES blk	*	600	-20	1.8
14. WN blk	*	-600	22	1.8
15. WS blk	*	-600	-21	1.8
16. EN blk	*	600	24	1.8
17. SE blk	*	21	-600	1.8
18. NW blk	*	-21	600	1.8
19. SW blk	*	-20	-600	1.8
20. NE blk	*	20	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	1.3	.1	.0	.0	.0	.1	.0	.4	.2
2. NW	171.	1.3	.0	.0	.0	.1	.4	.0	.1	.0
3. SW	9.	1.4	.0	.0	.0	.4	.2	.0	.3	.0
4. NE	260.	1.2	.0	.2	.0	.1	.0	.0	.0	.0
5. ES mdblk	278.	1.1	.0	.0	.0	.0	.0	.0	.0	.6
6. WN mdblk	99.	1.1	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	80.	1.0	.0	.0	.0	.0	.0	.0	.5	.0
8. EN mdblk	262.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	351.	.8	.2	.0	.0	.1	.0	.0	.0	.0
10. NW mdblk	171.	1.0	.0	.0	.0	.5	.0	.0	.0	.0
11. SW mdblk	8.	1.1	.0	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	189.	.9	.0	.4	.0	.0	.1	.0	.0	.0
13. ES blk	278.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	.9	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.7	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	172.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	188.	.9	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P3
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	.0	.0	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.5	.0	.0	.0	.0	.0	.2	.0	.0	.0
5. ES mdblk	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.2
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.5	.0
17. SE blk	.0	.0	.0	.0	.3	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.1	.7	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.1	.0	.0	.7	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.5	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	* AG	250	2.4	.0	10.0
B. Valenc NBD	*	9	0	9	150	* AG	510	2.4	.0	10.0
C. Valenc NBL	*	5	-150	0	0	* AG	100	2.4	.0	10.0
D. Valenc SBA	*	-9	150	-9	0	* AG	570	2.4	.0	10.0
E. Valenc SBD	*	-9	0	-9	-150	* AG	850	2.4	.0	10.0
F. Valenc SBL	*	-5	150	0	0	* AG	640	2.4	.0	10.0
G. Imper EBA	*	-150	-14	0	-14	* AG	1510	2.4	.0	10.0
H. Imper EBD	*	0	-14	150	-14	* AG	2200	2.4	.0	10.0
I. Imper EBL	*	-150	-9	0	0	* AG	250	2.4	.0	10.0
J. Imper WBA	*	150	9	0	9	* AG	2210	2.4	.0	10.0
K. Imper WBD	*	0	9	-150	9	* AG	2340	2.4	.0	10.0
L. Imper WBL	*	150	5	0	0	* AG	370	2.4	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	* AG	350	2.4	.0	10.0
N. Valenc NBDX	*	9	150	9	750	* AG	510	2.4	.0	10.0
O. Valenc SBAX	*	-9	750	-9	150	* AG	1210	2.4	.0	10.0
P. Valenc SBDX	*	-9	-150	-9	-750	* AG	850	2.4	.0	10.0
Q. Imper EBAX	*	-750	-14	-150	-14	* AG	1760	2.4	.0	10.0

R. Imper EBDX	*	150	-14	750	-14	*	AG	2200	2.4	.0	10.0
S. Imper WBAX	*	750	9	150	9	*	AG	2580	2.4	.0	10.0
T. Imper WBDX	*	-150	9	-750	9	*	AG	2340	2.4	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-22	1.8
2. NW	*	-17	16	1.8
3. SW	*	-15	-24	1.8
4. NE	*	15	17	1.8
5. ES mdblk	*	150	-22	1.8
6. WN mdblk	*	-150	16	1.8
7. WS mdblk	*	-150	-24	1.8
8. EN mdblk	*	150	17	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-17	150	1.8
11. SW mdblk	*	-15	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-22	1.8
14. WN blk	*	-600	16	1.8
15. WS blk	*	-600	-24	1.8
16. EN blk	*	600	17	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-17	600	1.8
19. SW blk	*	-15	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	279.	.8	.0	.0	.0	.0	.0	.0	.3	.0
2. NW	99.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	80.	.9	.0	.0	.0	.0	.1	.0	.0	.4
4. NE	261.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.9	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.1
7. WS mdblk	81.	.7	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	261.	.9	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	354.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	171.	.5	.0	.0	.0	.2	.0	.1	.0	.0
11. SW mdblk	6.	.6	.0	.0	.0	.0	.3	.0	.0	.0
12. NE mdblk	188.	.5	.0	.2	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.9	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.6	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P4
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
2. NW	*	.0	.5	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
4. NE	*	.0	.0	.5	.0	.0	.0	.0	.0	.1	.0	.0	.0
5. ES mdblk	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	*	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	*	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	*	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.2	.0
14. WN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.7
15. WS blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.2
16. EN blk	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.6	.0
17. SE blk	*	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	.0
18. NW blk	*	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0
19. SW blk	*	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0
20. NE blk	*	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	9	-150	9	0	AG	200	2.7	.0	10.0
B. Valenc NBD	9	0	9	150	AG	400	2.7	.0	10.0
C. Valenc NBL	5	-150	0	0	AG	50	2.7	.0	10.0
D. Valenc SBA	-7	150	-7	0	AG	1370	2.7	.0	10.0
E. Valenc SBD	-7	0	-7	-150	AG	1380	2.7	.0	10.0
F. Valenc SBL	-5	150	0	0	AG	500	2.7	.0	10.0
G. Birch EBA	-150	-9	0	-9	AG	910	2.7	.0	10.0
H. Birch EBD	0	-9	150	-9	AG	1330	2.7	.0	10.0
I. Birch EBL	-150	-5	0	0	AG	40	2.7	.0	10.0
J. Birch WBA	150	5	0	5	AG	710	2.7	.0	10.0
K. Birch WBD	0	5	-150	5	AG	680	2.7	.0	10.0
L. Birch WBL	150	5	0	0	AG	10	2.7	.0	10.0
M. Valenc NBAX	9	-750	9	-150	AG	250	2.7	.0	10.0
N. Valenc NBDX	9	150	9	750	AG	400	2.7	.0	10.0
O. Valenc SBAX	-7	750	-7	150	AG	1870	2.7	.0	10.0
P. Valenc SBDX	-7	-150	-7	-750	AG	1380	2.7	.0	10.0
Q. Birch EBAX	-750	-9	-150	-9	AG	950	2.7	.0	10.0

R. Birch EBDX	*	150	-9	750	-9	*	AG	1330	2.7	.0	10.0
S. Birch WBAX	*	750	5	150	5	*	AG	720	2.7	.0	10.0
T. Birch WBDX	*	-150	5	-750	5	*	AG	680	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-15	1.8
2. NW	*	-14	12	1.8
3. SW	*	-14	-17	1.8
4. NE	*	15	12	1.8
5. ES mdblk	*	150	-15	1.8
6. WN mdblk	*	-150	12	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	12	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-15	1.8
14. WN blk	*	-600	12	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	12	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	351.	.8	.0	.1	.0	.1	.0	.0	.0	.2
2. NW	98.	.9	.0	.0	.0	.2	.0	.0	.0	.1
3. SW	7.	1.0	.0	.0	.0	.4	.1	.1	.1	.0
4. NE	262.	.8	.0	.0	.0	.1	.0	.0	.0	.0
5. ES mdblk	278.	.8	.0	.0	.0	.0	.0	.0	.0	.5
6. WN mdblk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	83.	.6	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.1
9. SE mdblk	353.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	172.	.9	.0	.0	.0	.5	.0	.1	.0	.0
11. SW mdblk	6.	.8	.0	.0	.0	.0	.5	.0	.0	.0
12. NE mdblk	189.	.6	.0	.2	.0	.1	.0	.0	.0	.0
13. ES blk	277.	.8	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	97.	.6	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	83.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	263.	.6	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	353.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	173.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	6.	.7	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	187.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P5
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. SE	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0
2. NW	.0	.2	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
3. SW	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. NE	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. WN mdblk	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. EN mdblk	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.1	.0
14. WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.3
15. WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.1
16. EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.3	.0
17. SE blk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
18. NW blk	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0	.0	.0
19. SW blk	.0	.0	.0	.0	.0	.0	.0	.6	.0	.0	.0	.0
20. NE blk	.0	.0	.0	.0	.0	.2	.2	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Olinda 2013 P6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	360. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	8.3 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Valenc NBA	*	9	-150	9	0	* AG	170	2.7	.0	10.0
B. Valenc NBD	*	9	0	9	150	* AG	190	2.7	.0	10.0
C. Valenc NBL	*	5	-150	0	0	* AG	80	2.7	.0	10.0
D. Valenc SBA	*	-7	150	-7	0	* AG	290	2.7	.0	10.0
E. Valenc SBD	*	-7	0	-7	-150	* AG	1750	2.7	.0	10.0
F. Valenc SBL	*	-5	150	0	0	* AG	20	2.7	.0	10.0
G. Carbon EBA	*	-150	-9	0	-9	* AG	850	2.7	.0	10.0
H. Carbon EBD	*	0	-9	150	-9	* AG	630	2.7	.0	10.0
I. Carbon EBL	*	-150	-5	0	0	* AG	120	2.7	.0	10.0
J. Carbon WBA	*	150	12	0	12	* AG	2340	2.7	.0	10.0
K. Carbon WBD	*	0	12	-150	12	* AG	2530	2.7	.0	10.0
L. Carbon WBL	*	150	9	0	0	* AG	1230	2.7	.0	10.0
M. Valenc NBAX	*	9	-750	9	-150	* AG	250	2.7	.0	10.0
N. Valenc NBDX	*	9	150	9	750	* AG	190	2.7	.0	10.0
O. Valenc SBAX	*	-7	750	-7	150	* AG	310	2.7	.0	10.0
P. Valenc SBDX	*	-7	-150	-7	-750	* AG	1750	2.7	.0	10.0
Q. Carbon EBAX	*	-750	-9	-150	-9	* AG	970	2.7	.0	10.0

R. Carbon EBDX	*	150	-9	750	-9	*	AG	630	2.7	.0	10.0
S. Carbon WBAX	*	750	12	150	12	*	AG	3570	2.7	.0	10.0
T. Carbon WBDX	*	-150	12	-750	12	*	AG	2530	2.7	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Olinda 2013 P6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. SE	*	17	-16	1.8
2. NW	*	-14	20	1.8
3. SW	*	-14	-17	1.8
4. NE	*	15	21	1.8
5. ES mdblk	*	150	-16	1.8
6. WN mdblk	*	-150	20	1.8
7. WS mdblk	*	-150	-17	1.8
8. EN mdblk	*	150	21	1.8
9. SE mdblk	*	17	-150	1.8
10. NW mdblk	*	-14	150	1.8
11. SW mdblk	*	-14	-150	1.8
12. NE mdblk	*	15	150	1.8
13. ES blk	*	600	-16	1.8
14. WN blk	*	-600	20	1.8
15. WS blk	*	-600	-17	1.8
16. EN blk	*	600	21	1.8
17. SE blk	*	17	-600	1.8
18. NW blk	*	-14	600	1.8
19. SW blk	*	-14	-600	1.8
20. NE blk	*	15	600	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Olinda 2013 P6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. SE	278.	.8	.0	.0	.0	.0	.1	.0	.2	.0
2. NW	98.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
3. SW	79.	1.1	.0	.0	.0	.0	.3	.0	.0	.2
4. NE	98.	1.0	.0	.0	.0	.0	.0	.0	.0	.0
5. ES mdblk	279.	.7	.0	.0	.0	.0	.0	.0	.0	.2
6. WN mdblk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
7. WS mdblk	82.	.8	.0	.0	.0	.0	.0	.0	.3	.0
8. EN mdblk	260.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
9. SE mdblk	346.	.4	.0	.0	.0	.0	.2	.0	.0	.0
10. NW mdblk	177.	.5	.0	.0	.0	.1	.0	.0	.0	.0
11. SW mdblk	9.	.9	.0	.0	.0	.0	.6	.0	.0	.0
12. NE mdblk	186.	.5	.0	.0	.0	.0	.0	.0	.0	.0
13. ES blk	278.	.7	.0	.0	.0	.0	.0	.0	.0	.0
14. WN blk	98.	1.1	.0	.0	.0	.0	.0	.0	.0	.0
15. WS blk	82.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. EN blk	262.	1.2	.0	.0	.0	.0	.0	.0	.0	.0
17. SE blk	352.	.4	.0	.0	.0	.0	.0	.0	.0	.0
18. NW blk	174.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. SW blk	7.	.9	.0	.0	.0	.0	.0	.0	.0	.0
20. NE blk	186.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Olinda 2013 P6
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

		CONC/LINK (PPM)											
	RECEPTOR	I	J	K	L	M	N	O	P	Q	R	S	T
1.	SE	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
2.	NW	.0	.6	.0	.2	.0	.0	.0	.0	.0	.0	.1	.0
3.	SW	.0	.1	.0	.2	.0	.0	.0	.0	.0	.0	.2	.0
4.	NE	.0	.6	.0	.1	.0	.0	.0	.0	.0	.0	.2	.0
5.	ES mdblk	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6.	WN mdblk	.0	.0	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0
7.	WS mdblk	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
8.	EN mdblk	.0	.6	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
9.	SE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10.	NW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11.	SW mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12.	NE mdblk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13.	ES blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.4	.0
14.	WN blk	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.8
15.	WS blk	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.2
16.	EN blk	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
17.	SE blk	.0	.0	.0	.0	.1	.0	.0	.2	.0	.0	.0	.0
18.	NW blk	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0
19.	SW blk	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0	.0
20.	NE blk	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0

APPENDIX B

LANDFILL EMISSIONS SPREADSHEET

OLINDA ALPHA LANDFILL EXPANSION

AIR QUALITY REGIONAL EMISSIONS

LANDFILL OPERATIONS EMISSIONS

ONSITE CRITERIA POLLUTANT EMISSIONS
OLINDA ALPHA LANDFILL

SOURCE	Daily Usage For Equipment	Load Factor (%)	Annual Usage For Equipment (1A)	Number Of Units (1B)	Onsite Round-Trip Distance Traveled By Equipment (1C)		NOx			ROC			PM_{10}			SOx			CO		
							Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor	Emissions		Emission Factor	Emissions	
					(mi/day)	(mi/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)		(lbs/day)	(tons/yr)
Off-road Equipment (diesel)				--																	
Motorgrader	8 hours/day	57.5%	2,456 hours/year	1	--	--	0.713 lb/hr	5.7	0.88	0.039 lb/hr	0.3	0.05	0.061 lb/hr	0.5	0.07	0.086 lb/hr	0.7	0.11	0.151 lb/hr	1.2	0.19
Loader	8 hours/day	41.0%	2,456 hours/year	1	--	--	0.83 lb/hr	6.6	1.02	0.095 lb/hr	0.8	0.12	0.059 lb/hr	0.5	0.07	0.076 lb/hr	0.6	0.09	0.201 lb/hr	1.6	0.25
Compactor	10 hours/day	46.5%	3,070 hours/year	2	--	--	1.7 lb/hr	34.0	5.2	0.15 lb/hr	3.0	0.46	0.14 lb/hr	2.8	0.43	0.143 lb/hr	2.9	0.44	0.675 lb/hr	13.5	2.07
Scrapers	8 hours/day	66.0%	2,456 hours/year	2	--	--	3.84 lb/hr	61.4	9	0.27 lb/hr	4.3	0.7	0.41 lb/hr	6.6	1.0	0.46 lb/hr	7.4	1.13	1.25 lb/hr	20.0	3
Water Trucks	8 hours/day		2,456 hours/year	2	--	--	512.4 g/hr	18.1	2.77	36.60 g/hr	1.3	0.20	73.2 g/hr	2.6	0.40	249 g/hr	8.8	1.35	183.0 g/hr	6.5	0.99
Dozer	10 hours/day	59.0%	3,070 hours/year	5	--	--	1.26 lb/hr	63.0	10	0.12 lb/hr	6.0	0.9	0.112 lb/hr	5.6	0.9	0.14 lb/hr	7.0	1.07	0.35 lb/hr	17.5	2.7
Backhoe	8 hours/day	46.5%	2,456 hours/year	1	--	--	1.7 lb/hr	13.6	2.1	0.15 lb/hr	1.2	0.18	0.14 lb/hr	1.1	0.17	0.143 lb/hr	1.1	0.18	0.675 lb/hr	5.4	0.83
Stationary Sources																					
LANDFILL GAS:																					
LFG generated			MMscf/day	22.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LFG fugitive (Escape percent =)	30%		MMscf/day	6.8	--	--	--	--	--	82 lb/MMscf LFG	562	103	--	--	--	--	--	--	--	--	--

DRAFT

Olinda Alpha Landfill Expantion
Operation Emissions

Emission Rates (EMFAC2002) (g/mile)

	ROG	CO	NOx	SOx	PM10
Other Deliveries	0.162	4.154	1.31	0.007	0.036
Waste Trucks	0.54	5.778	11.511	0.129	0.242
Worker Comutes	0.134	4.127	0.593	0.003	0.03

Vehicle Miles Traveled Per Day

Other Deliveries	3456
Waste Trucks	20338
Worker Comutes	3050

Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10
Other Deliveries	1.23	31.65	9.98	0.05	0.27
Waste Trucks	24.21	259.07	516.12	5.78	10.85
Worker Comutes	0.90	27.75	3.99	0.02	0.20

Olinda Alpha Landfill Expantion
Peak Day Construction Emissions

Emission Rates (EMFAC2002) (g/mile)

	ROG	CO	NOx	SOx	PM10
Haul Trucks	2.036	20.917	15.809	0.132	0.593
Delivery Trucks	0.54	5.778	11.511	0.129	0.242
Worker Comutes	0.134	4.127	0.593	0.003	0.03

Vehicle Miles Traveled Per Day

Haul Trucks	200
Delivery Trucks	250
Worker Comutes	700

Emissions (pounds per day)

	ROG	CO	NOx	SOx	PM10
Haul Trucks	0.90	9.22	6.97	0.06	0.26
Delivery Trucks	0.30	3.18	6.34	0.07	0.13
Worker Comutes	0.21	6.37	0.92	0.00	0.05

TABLE __
INHALATION SCREENING HEALTH RISK
OLINDA ALPHA LANDFILL
EMISSIONS FROM FLARE AND DIESEL EQUIPMENT

	M.W.	Concentration in Flare Exhaust (PPB)	Emission Rate (lb/hr)	Inhalation Unit Risk (ug/m3)-1	Inh. Cancer Potency Factor (mg/kg-d)-1	Annual Concentration (ug/m3)			Inhalation Carcinogenic Health Risk (# in a million)		
						500ft	1000ft	1500ft	500ft	1000ft	1500ft
Benzene	78.12	2600	3.86E-01	2.90E-05	1.00E-01	1.72E-06	3.86E-06	4.22E-06	6.47E-05	1.45E-04	1.59E-04
Dichlorobenzenes	147	169	4.72E-02	1.10E-05	4.00E-02	2.10E-07	4.72E-07	5.16E-07	3.17E-06	7.11E-06	7.78E-06
1,1 Dicholoroethane	99	800	1.51E-01	1.60E-06	5.70E-03	6.70E-07	1.50E-06	1.65E-06	1.44E-06	3.23E-06	3.54E-06
Trichloroethene	131	1200	2.99E-01	2.00E-06	7.00E-03	1.33E-06	2.99E-06	3.27E-06	3.51E-06	7.88E-06	8.62E-06
Vinyl Chloride	62.5	430	5.11E-02	7.80E-05	2.70E-01	2.27E-07	5.10E-07	5.59E-07	2.31E-05	5.19E-05	5.68E-05
Diesel Vehicle Exhaust Particulate			3.3	3.00E-04	1.1	0.01	0.00	0.00	0.96	0.46	0.12
									0.96	0.46	0.12

DBR	393	Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	350	Exposure frequency	(days/yr)
ED	70	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days) (70 years = 25,550 days)

Olinda Alpha Landfill - Valencia Ave
Screening Health Risk

	Unmitigated							Mitigated		
	PM_{10} Annual Arithmetic Average Concentration (ug/m^3)		Inhalation Cancer Risk		Chronic HI		Mitigation: Whole-house particulate filtration (efficiency)	PM_{10} Annual Arithmetic Average Concentration (ug/m^3)	Inhalation Cancer Risk	Chronic HI
	Outdoor	Indoor	Outdoor [1]	In/Outdoor [2]	Outdoor	In/Outdoor		In/Outdoor	In/Outdoor	In/Outdoor
California ambient diesel particulate [3]	0		0 in a million		0.00		N/A	N/A	N/A	N/A
California indoor diesel particulate [3]		0		0 in a million		0.00	N/A	N/A	N/A	N/A
House 1 (12m from road)	0.05	0.05	2 in a million	2 in a million	0.01	0.01	90%	0.005	1 in a million	0.01
House 2 (14m from road)	0.08	0.08	2 in a million	2 in a million	0.02	0.02	90%	0.008	1 in a million	0.01
House 3 (20m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.00
House 4 (29m from road)	0.05	0.05	2 in a million	2 in a million	0.01	0.01	90%	0.005	1 in a million	0.01
House 5 (31m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.01
House 6 (37m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.01

DBR	393	Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	350	Exposure frequency	(days/yr)
ED	5	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days) (70 years = 25,550 days)
For diesel PM_{10}	1.1	Inhalation Cancer Potency factor	$(mg/kg\text{-}d)^{-1}$
For diesel PM_{10}	5.0	Chronic Inhalation REL	(ug/m^3)

AADT	
1,788	HDT
247	MDT
3,305	Auto

Inhalation cancer risk = ((Cair * DBR * A * EF * ED * $1x10^{-6}$) / AT) * Inhalation Cancer Potency factor

Notes:

1) Outdoor represents an exposure of 24 hours per day outdoors for 70 years

2) Indoors represents an exposure of 10 hours per day indoors, 14 hours per day outdoors, for 70 years

3) Data published in Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, California Environmental Protection Agency, June, 1998

Olinda Alpha Landfill - Valencia Ave
Screening Health Risk

	Unmitigated						Mitigation: Whole-house particulate filtration (efficiency)	Mitigated		
	PM_{10} Annual Arithmetic Average Concentration (ug/m^3)		Inhalation Cancer Risk		Chronic HI			PM_{10} Annual Arithmetic Average Concentration (ug/m^3)	Inhalation Cancer Risk	Chronic HI
	Outdoor	Indoor	Outdoor [1]	In/Outdoor [2]	Outdoor	In/Outdoor		In/Outdoor	In/Outdoor	In/Outdoor
California ambient diesel particulate [3]	0		0 in a million		0.00		N/A	N/A	N/A	N/A
California indoor diesel particulate [3]		0		0 in a million		0.00	N/A	N/A	N/A	N/A
House 1 (12m from road)	0.05	0.05	2 in a million	2 in a million	0.01	0.01	90%	0.005	1 in a million	0.01
House 2 (14m from road)	0.08	0.08	2 in a million	2 in a million	0.02	0.02	90%	0.008	1 in a million	0.01
House 3 (20m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.00
House 4 (29m from road)	0.05	0.05	2 in a million	2 in a million	0.01	0.01	90%	0.005	1 in a million	0.01
House 5 (31m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.01
House 6 (37m from road)	0.04	0.04	1 in a million	1 in a million	0.01	0.01	90%	0.004	1 in a million	0.01

DBR	393	Daily breathing rate	(L/kg-day)
A	1	Inhalation absorption factor	
EF	350	Exposure frequency	(days/yr)
ED	5	Exposure duration	(years)
AT	25,550	Avg. time period of exposure	(days) (70 years = 25,550 days)
For diesel PM_{10}	1.1	Inhalation Cancer Potency factor	$(mg/kg-d)^{-1}$
For diesel PM_{10}	5.0	Chronic Inhalation REL	(ug/m^3)

AADT	
1,796	HDT
272	MDT
3,272	Auto

Inhalation cancer risk = ((Cair * DBR * A * EF * ED * $1x10^{-6}$) / AT) * Inhalation Cancer Potency factor

Notes:

1) Outdoor represents an exposure of 24 hours per day outdoors for 70 years

2) Indoors represents an exposure of 10 hours per day indoors, 14 hours per day outdoors, for 70 years

3) Data published in Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, California Environmental Protection Agency, June, 1998

APPENDIX C

TECHNICAL MEMORANDUM

BRYAN A. STIRRAT & ASSOCIATES
CIVIL AND ENVIRONMENTAL ENGINEERS

MEMORANDUM

TO: Tin Cheung, P&D Consultants
Jerry Flores, P&D Consultants

JN: 9927/6.2

FROM: Bryan A. Stirrat, BAS

DATE: May 12, 2004

RE: Backup Calculations for Gas Generation Projections
Olinda Alpha Landfill Expansion

The following describes an analysis performed by BAS of landfill gas production rates which are projected to be generated at the Olinda Alpha Landfill if waste disposal ceases in 2013 or continues until 2021.

1) The County is currently collecting a total of 11.0 mmscf/day (7,638 SCFM) average of landfill gas at approximately 50% methane.

   Source: OCIWMD as tabulated by Waste Energy Technology [Attachment 1] for Olinda Flares [Q-F1 and Q-F2] and the Brea Plant [Inlet Q].

2) BAS has generated a series of gas production curves (see Attachment 2) for the in-place (data provided by IWMD) and projected waste disposal at the Olinda Alpha Landfill through year 2013, and another series of gas production curves for the in-place and projected waste disposal through year 2021. This family of curves is based on varying assumptions of moisture content and biodegradability of the waste. It should be noted that the curves represent projected methane production not projected landfill gas to be recovered. In order to determine the amount of landfill gas to be recovered, a curve is selected that most represents the in-place waste at the site and each point on the curve (represented by a year) is multiplied by an estimated recovery efficiency (assumed to be 70% for this analysis – an industry standard). That number is then divided by the estimated percentage methane content of the gas to be recovered (50% methane content was assumed for this analysis based on recent tests run on the gas at the site) and the end result would be SCFM (standard cubic feet per minute) of landfill gas.

3) Rather than pick a curve at random, BAS has elected to use the recent test data from the site for year 2004 and use that data to determine which curve most represents actual recovery from the site. In order to determine landfill gas generation using the curves (Attachment 2), the gas recovered in year 2004 was converted to methane generated.

If the site currently collects 7,638 SCFM of landfill gas at 50% methane and at a recovery efficiency of 70%, you would multiply 7,638 * (0 .50) =3,819 and then divide that number by 0.70. The result is the methane generation rate for year 2004. In this case, that is 3,819/0.70 = 5,455 SCFM methane.

4) Using the BAS generated gas curves and looking at year 2004, the 5,455 SCFM methane is intersected between Curve No. 3 and Curve No. 4 from the bottom (see Point A on the attached curves). Following the same slope from Point A as the other curves, the year 2013 is intersected at approximately 7,700 SCFM methane (see Point B on the attached curves). Both Points A & B will be the same for both sets of curves through year 2013. Drawing a line between points A & B will represent the projected methane gas production rates which should be generated at the landfill between years 2004 and 2013 (based on actual methane generated in 2004). In order to determine if there will be any impacts from gas emissions at the site if the landfill life is extended until year 2021, an estimate must be made of the difference in gas production between the curve represented by waste disposal through year 2013 and the curve represented by waste disposal through year 2021. Using similar slopes as those of the 3rd and 4th curve from the bottom, a curve can be drawn from Point B to where the year 2021 is intersected on the year 2013 curve and where the year 2021 is intersected on the year 2021 disposal curve (see Attachment 2). The year 2021 is intersected at 7,700 SCFM methane on the year 2013 curve and at 8,800 SCFM methane on the year 2021 disposal curve. These points are referred to as Point C on both the 2013 and 2021 disposal curves (see Attachment 2). Following the similar slopes as the 3rd and 4th curves from the bottom, the peak of the year 2013 disposal curve and year 2021 disposal curve is shown as Point D in Attachment 2. For the year 2013 disposal curve, Point D is 8,000 SCFM methane and for the year 2021 curve is 9,000 SCFM methane.

5) A comparison of the results for landfill gas projections based on the above analysis is presented in Table 5.6-___ (for inclusion in Section 5.6 of the Olinda Alpha Landfill Expansion EIR). An assumption of 70% recovery efficiency and 50% methane content of gas was used to convert the methane levels on the attached curves to total gas generation. The increase in gas generation due to an additional eight years of landfill operation (from 2013 to 2021) is 12.5%. This increase would not result in the need for additional flare(s) as shown on Table 5.6-___.

BAS:jd

Enclosures

C: Christine Arbogast, BAS

TABLE 5.6-__

OLINDA ALPHA LANDFILL
PROJECTED LANDFILL GAS PRODUCTION WITH AND WITHOUT EXPANSION

TABLE 5.6-___

Projected Year of Landfill Closure	Estimates of Landfill Gas Production at Closure (SCFM of LFG)	Peak Landfill Gas Flow Rate (SCFM of LFG) and Date Peak Occurs	Number of Flares Required at Closure	Number of Flares Required at Peak Landfill Gas Flow Rate
2013[1]	10,780	11,200 (2017)	2.57	2.67
2021[2]	12,320	12,600 (2023)	2.93	3.0

[1] Permitted Closure Date
[2] Expansion Closure Date
[3] Based on flare capacity of 4,200 SCFM/flare (Source: IWMD).
SCFM = standard cubic feet per minute.
LFG = landfill gas.

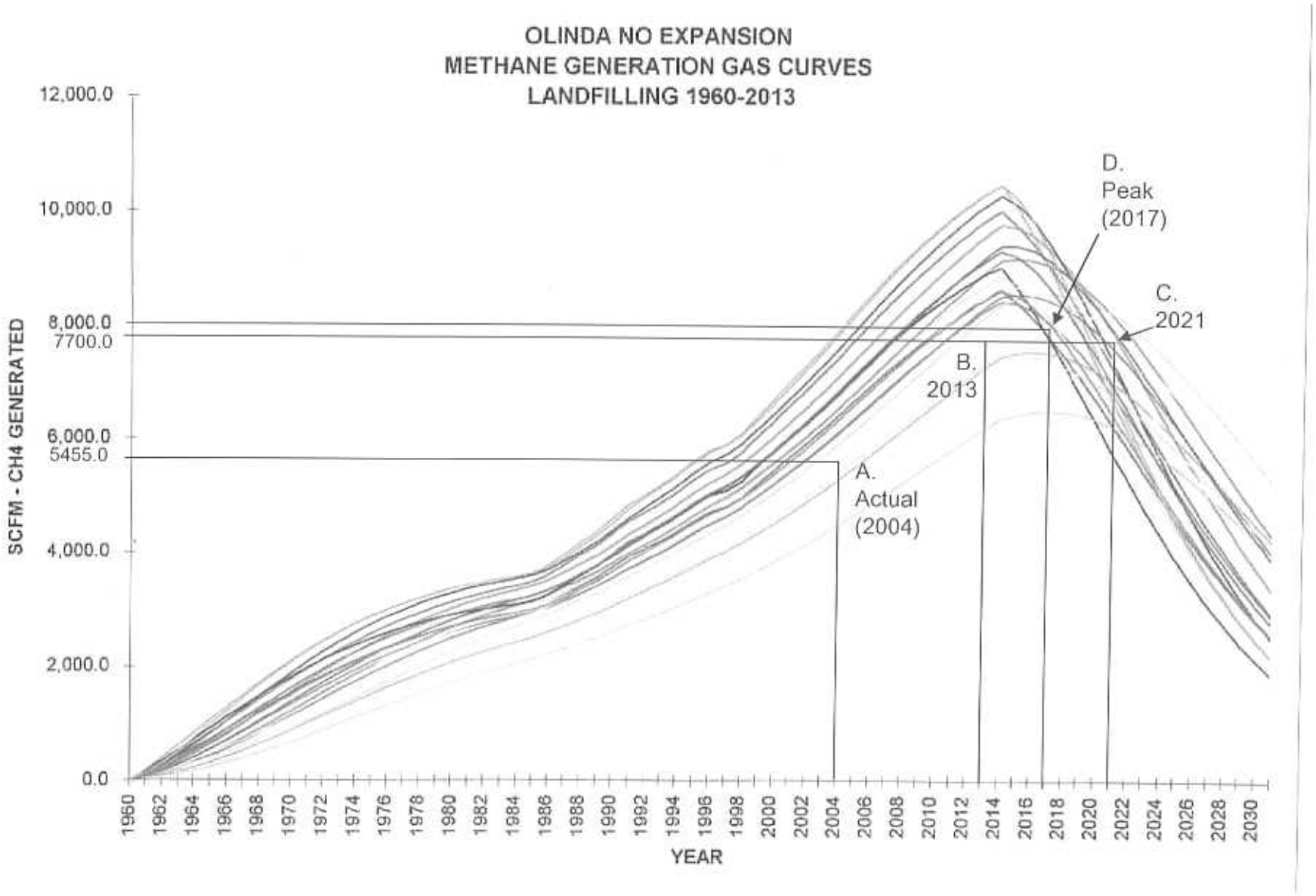
ATTACHMENT 1

WASTE ENERGY TECHNOLOGY, LLC - GR LOG WORKSHEET

SITE: OLINDA

DATE (MMDDYY)	TIME	AMB. TEMP. (°F)	LFG PARAMETERS - FLARE(S)				BREA PLANT				COMMENTS	DATA BY:
			INVAC ("WC)	Q -F1 (SCFD)	Q -F2 (SCFD)	% CH4	INVAC ("WC)	INLET Q (SCFD)	DISCH. Q (SCFD)	% CH4		
03/26/04	8:10	66	-60	4.23	3.97	47.52	-61	2.78	0.00	52.28	Some flare gas to Plant	TD
03/29/04	6:30	76	-60	4.15	4.25	48.39	-58	2.79	0.09	52.34	Some flare gas to Plant	AP
03/30/04	6:30	60	-60	4.18	4.10	48.20	-58	2.82	0.10	52.54	Some flare gas to Plant	AP
03/31/04	8:00	54	-60	4.14	4.22	48.60	-48	2.90	0.16	52.78	Brea header dewateredSome Flare gas to Plant	
04/01/04	7:00	55	-60	4.16	4.24	48.55	-55	2.85	0.13	52.54	Some flare gas to Plant	AP
04/02/04	6:45	50	-60	4.15	4.03	48.72	-54	2.78	0.09	52.88	Some flare gas to Plant	AP
04/05/04	7:25	52	-60	4.15	3.93	48.02	-58	2.74	0.00	52.18	Some flare gas to Plant	AP
04/06/04	13:26	53	-60	4.11	4.14	48.32	-63	2.75	0.03	52.12	Some flare gas to Plant	TD
04/07/04	7:00	50	-60	4.17	4.08	47.80	-59	2.83	0.08	52.36	Some flare gas to Plant	AP
04/08/04	7:00	52	-60	4.12	4.06	48.38	-60	2.83	0.08	52.40	Some flare gas to Plant	AP
04/09/04	7:00	54	-60	4.07	3.96	47.49	-60	2.80	0.06	52.31	Some flare gas to Plant	AP
04/12/04	6:30	52	-60	4.08	4.02	47.97	-63	2.85	0.07	51.97	Some flare gas to Plant	AP
04/13/04	7:00	50	-60	4.06	4.00	49.02	-46	2.80	0.05	52.19	Brea header dewateredSome Flare gas to Plant	
04/14/04	6:45	50	-60	4.06	4.00	48.86	-57	2.86	0.10	52.70	Some flare gas to Plant	AP
04/15/04	6:30	50	-60	4.15	4.12	49.24	-61	2.79	0.00	52.65	Some flare gas to Plant	AP
04/16/04	7:20	50	-60	4.14	4.15	48.53	-61	2.85	0.09	52.63	Some flare gas to Plant	AP
04/19/04	6:25	50	-60	4.50	3.73	48.49	-58	2.80	0.00	52.59	Some flare gas to Plant	AP
04/20/04	7:00	50	-60	4.50	4.02	48.58	-35	1.90	0.14	53.21	Outage 2004	NP
04/21/04	6:36	50	-60	4.46	4.15	48.84	-34	1.83	0.06	53.88	Outage 2004	AP
04/23/04	8:00	72	-60	3.97	5.06	48.68	-61	2.76	0.18	54.94	Outage 2004	AP

ATTACHMENT 2



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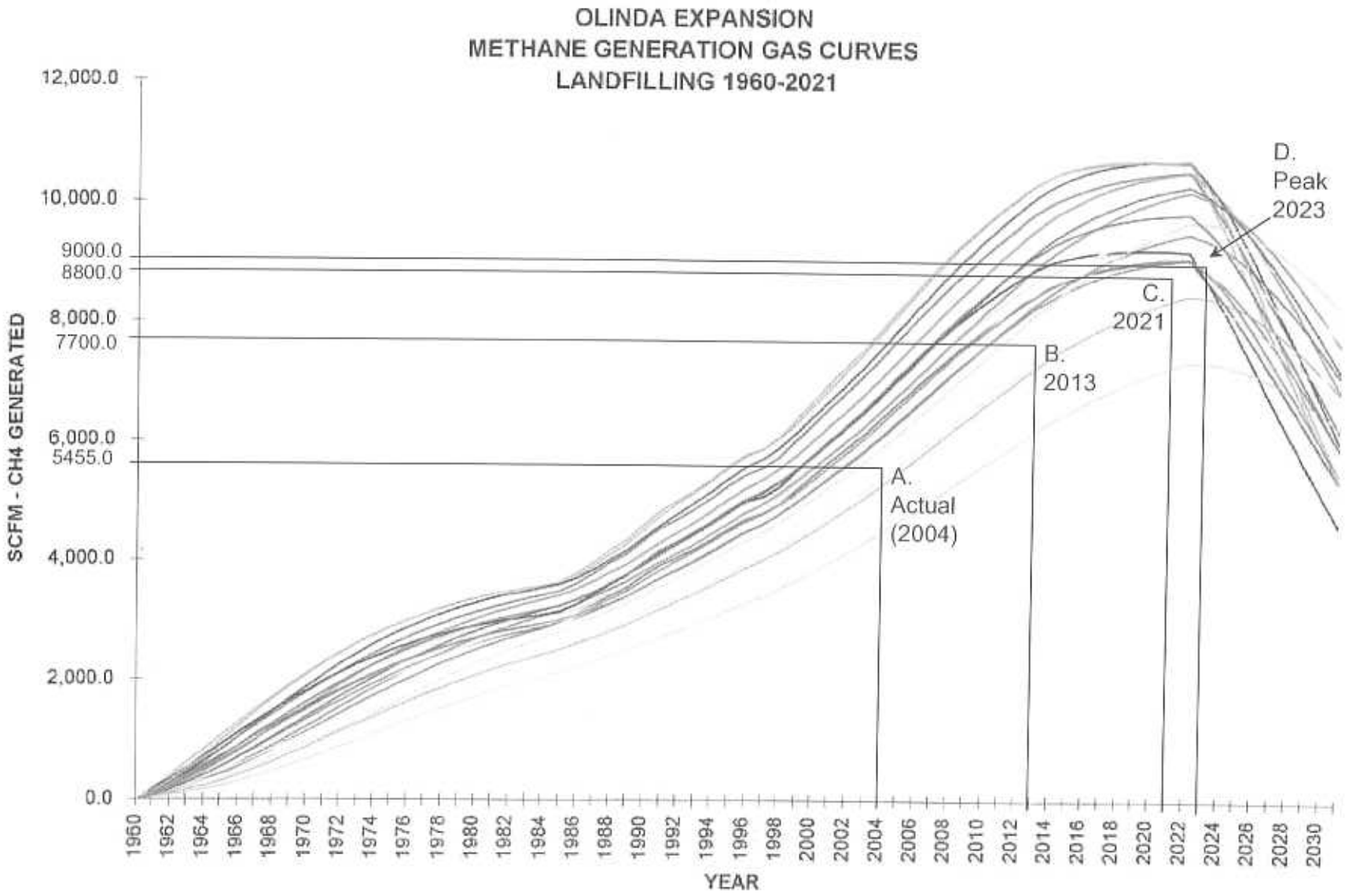

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APPENDIX H
NOISE IMPACT ANALYSIS

NOISE IMPACT ANALYSIS

REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY (RELOOC)

OLINDA ALPHA LANDFILL EXPANSION

Submitted to:

County of Orange Integrated Waste Management Department

Prepared by:

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LSA Project No. PND830A

LSA

May 18, 2004

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OLINDA ALPHA LANDFILL EXPANSION PLAN

INTRODUCTION

This noise impact analysis has been prepared to evaluate the potential noise impacts and mitigation measures associated with The Olinda Alpha Landfill expansion project in an unincorporated Orange County area north of the City of Brea, California. This report is intended to satisfy the County's requirement for a project-specific noise impact analysis in support of the proposed project and associated environmental documents, and identifies necessary mitigation measures for incorporation as part of the project design.

Project Location

The Olinda Alpha Landfill is located at 1942 N. Valencia Avenue in unincorporated Orange County, immediately north of the City of Brea. Figure 1 shows the location of the Olinda Alpha Landfill.

Project Description

The proposed project includes both a vertical and horizontal expansion of Olinda Alpha Landfill disposal prism. No change in the landfill property boundary is proposed.

Proposed Modifications. The proposed project includes both a vertical and horizontal expansion of Olinda Alpha Landfill disposal prism. No change in the landfill property boundary is proposed. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (amsl) to 1,415 feet amsl or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill site. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill. Parts of the horizontal expansion would occur only in areas that have already been disturbed by landfill operations. Figure 2 shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 3 depicts the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project.

The expanded landfill would ultimately accommodate disposal of an additional 14.2 million tons (MT) of municipal solid waste (MSW, as of 2003) and would extend the life of the landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, and existing disposal technologies. The proposed project would not result in any increase to either the Maximum Daily Permitted Tonnage or the annual average daily tonnage limits for the landfill.

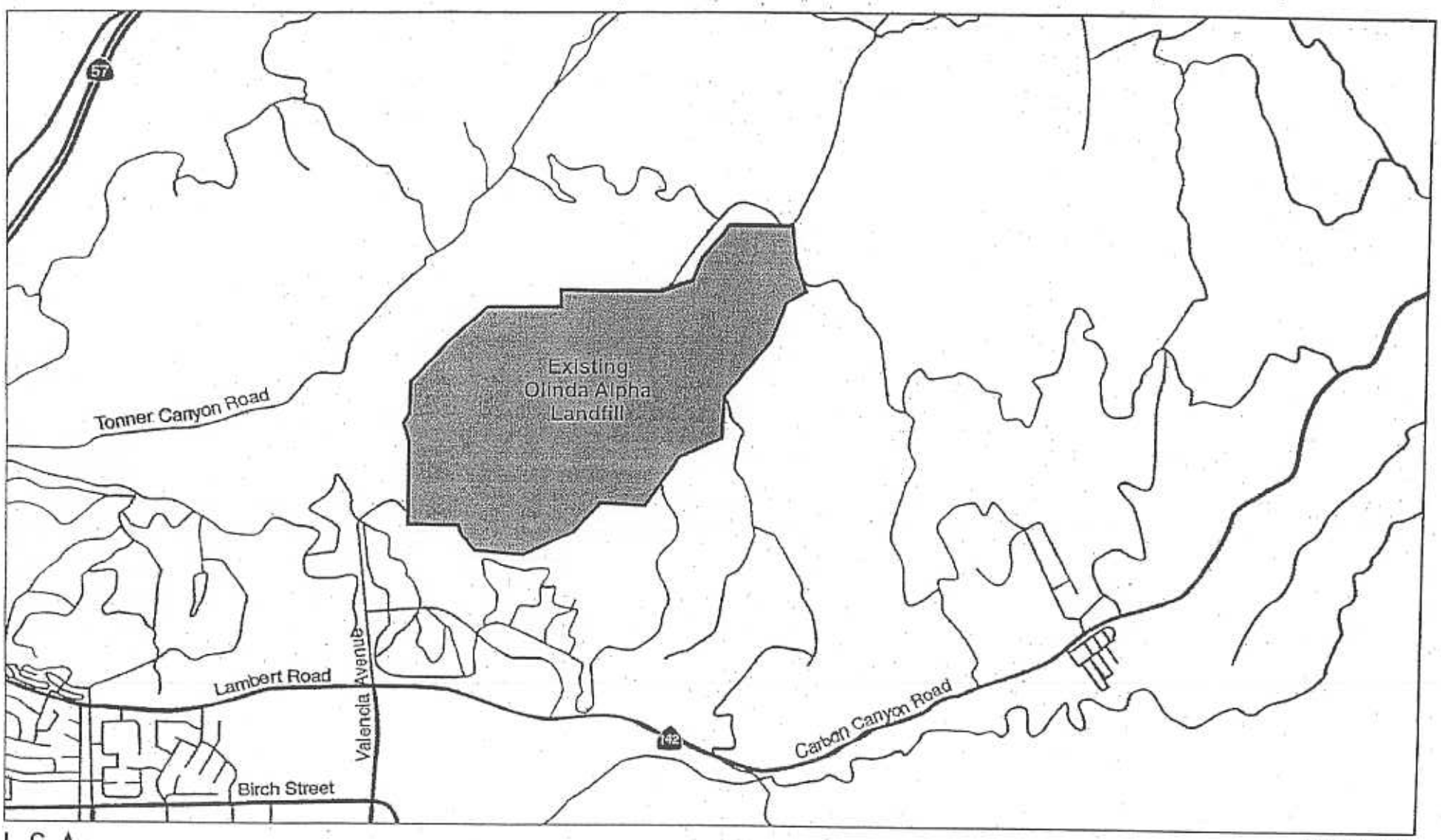

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FIGURE 1

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Relooc Strategic Plan

Location Map

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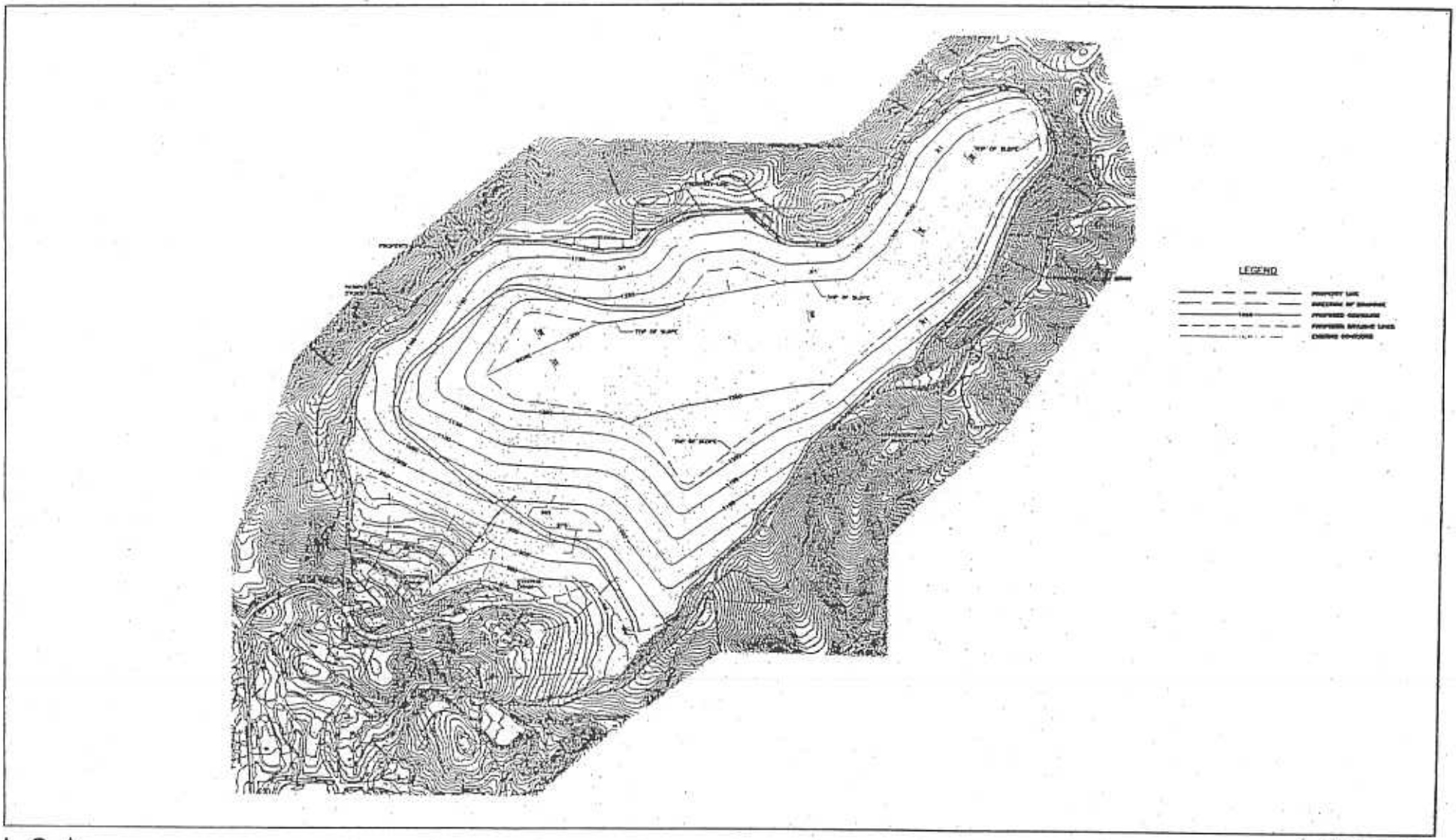

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FIGURE 2

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SOURCE: Bryan A. Stirrat & Associates

Relooc Strategic Plan

Current Permitted Limits

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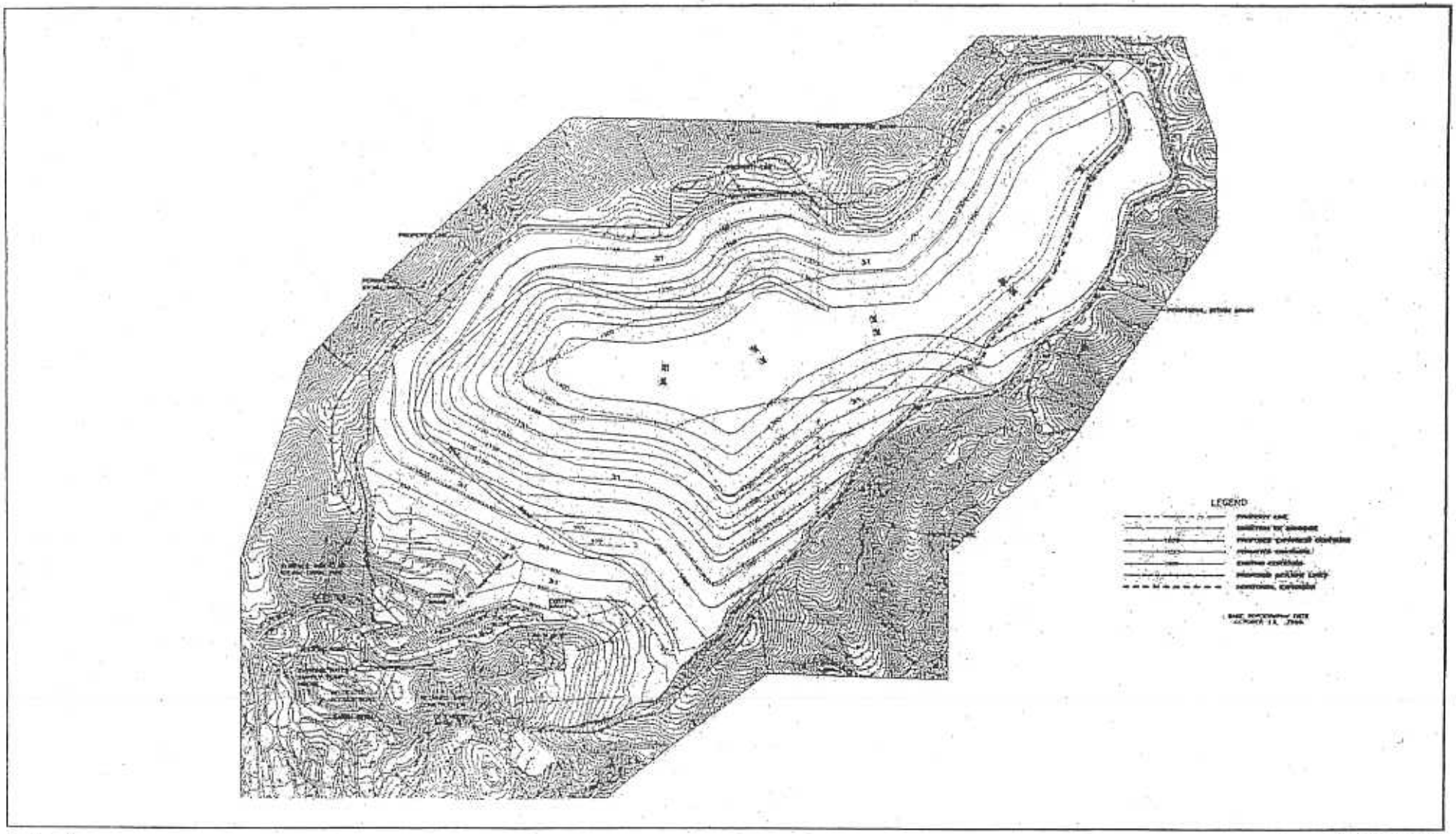

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FIGURE 3

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SOURCE: Bryan A. Stirrat & Associates

Relooc Strategic Plan

Proposed Expansion Plan Map

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Phasing. The expansion of the Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill site at once.

On-site soil to be utilized for daily cover, road construction, and other related uses is available at the Olinda Alpha Landfill through 2015. The site currently accepts dirt and continues to stockpile it on-site for future cover use. When on-site soil for cover is depleted at the Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015. Fill and cover techniques at the landfill would be similar to the methods currently employed. Waste would be deposited, compacted, and covered daily using appropriate landfilling methods.

Waste Composition. The waste composition at the Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Non-hazardous MSW would comprise the waste stream, and existing screening safety mechanisms would continue to be employed to ensure that hazardous materials are not accepted. Access to Olinda Alpha Landfill would remain unchanged, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions. The additional traffic associated with soil import for cover use at Olinda Alpha Landfill by the year 2015 would be offset by the cessation of refuse importation.

Other Project Features. The project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional gas control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Employees would continue to perform landfill operations, including administration, landfill cover operations, and other landfill-related operations. The number and types of equipment utilized at the Olinda Alpha Landfill, and the operating schedule, would remain unchanged after implementation of the proposed project.

Surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate expansion of the Olinda Alpha Landfill.

Alternative 1: No Project (No Action) Alternative

The No Project Alternative would include no action by the County of Orange. Under this Alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. The landfill would continue to operate at its existing permitted capacity with no increase in long term physical capacity or daily tonnage received. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 TPD of MSW under an MOU between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative, importation of waste into the Orange County disposal system will end in 2013 when landfilling at the Olinda Alpha Landfill terminates. Upon its closure, approximately 1,000 TPD of MSW, which is in excess of what could be accommodated at the Frank R. Bowerman (FRB) and Prima Deshecha Landfills, would have to be accommodated at landfills outside of Orange County.

The projected excess TPD of MSW to be exported out of County is based on population projections for the system demand by 2021 (the horizon year for this EIR).

Out-of-County landfills would have to be permitted to accept the excess tonnage from Orange County and may include El Sobrante Landfill in Riverside County, the Mid-Valley Landfill in San Bernardino County and/or a rail haul facility.

Alternative 2: Two-Landfill System in 2013 (Prima Deschecha Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at Prima Deshecha Landfill from 4,000 TPD to 5,000 TPD when Olinda Alpha Landfill closes in 2013.
- Permitted TPD at FRB Landfill will remain at 8,500 TPD when Olinda Alpha Landfill closes in 2013.
- Olinda Alpha Landfill continues to accept an annual average of 7,000 TPD until its closure date in 2013.
- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.
- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1-R5).

Alternative 2 proposes increasing the current permitted TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth and factors in the lower total tonnage with importation ceasing in 2013. At FRB Landfill, the permitted TPD received would remain unchanged at 8,500 TPD. Based on the RELOOC Demand model approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 2.

Under Alternative 2, no expansion or extension of the Olinda Alpha Landfill closure date would occur. All importation of out-of-County MSW would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. The Prima Deshecha Landfill 2001 General Development Plan (GDP) remaining refuse capacity would remain unchanged at 77.6 million tons (MT) as of 2001 GDP. However, the incremental increase of the Prima Deshecha Landfill in-flow waste stream from 4,000 TPD to a permitted limit of 5,000 TPD would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years in the life of Prima Deshecha Landfill under Alternative 2.

Under Alternative 2, the number of truck trips to Prima Deshecha Landfill would increase although the period over which those would occur would be reduced by 11 years because the life of the landfill would be shortened under this Alternative.

Under Alternative 2, the existing County MOU with the City of San Juan Capistrano would need to be amended prior to 2013 to provide for the increase in permitted daily tonnage. Similarly, permits currently in-place with the California Integrated Waste Management Board (CIWMB) and other regulatory agencies with jurisdictional oversight for Prima Deshecha Landfill would need to be amended.

Alternative 3: Two-Landfill System In 2013 (FRB Daily Tonnage Increase)

Assumptions

- Increase permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes in 2013.
- Permitted TPD at Prima Deshecha Landfill remains at 4,000 TPD when Olinda Alpha Landfill closes in 2013.
- Olinda Alpha Landfill continues to accept up to 7,000 TPD until its closure date in 2013.
- No expansion at Olinda Alpha Landfill, present capacity unchanged through remaining life.
- County importation at all three Orange County landfills ceases in 2013, with a net reduction of approximately 2,075 TPD imported to Olinda Alpha Landfill; approximately 830 TPD imported into FRB Landfill and approximately 920 TPD imported into Prima Deshecha Landfill (projected amount for 2013 according to County of Orange - RELOOC Demand Model Runs R1-R5).

Alternative 3 proposes increasing the current permitted TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in 2021 based on forecasted population growth and factors in the lower total tonnage with importation ceasing in 2013. The permitted TPD at Prima Deshecha Landfill would remain unchanged at 4,000 TPD. Based on the RELOOC Demand model, approximately 4,900 TPD of Olinda Alpha Landfill MSW would be diverted to the FRB and Prima Deshecha landfills under Alternative 3.

Under Alternative 3, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All out-of-County importation of MSW would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of FRB Landfill is 2022. Alternative 3 would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill results in a net reduction of one year of life at this landfill which just meets the horizon year goal of 2021 for this EIR. After 2021, the County would have one remaining landfill in their system. Under Alternative 3, the number of truck trips to the FRB Landfill would increase although the duration of the trips would be reduced because the life of the landfill would be shortened by one year.

Under Alternative 3, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased permitted daily tonnage. Similarly, existing permits with the CIWMB and other regulatory agencies with jurisdictional oversight for these landfills would need to be amended.

Methodology Related to Noise and Vibration Impact Assessment

Evaluation of noise impacts associated with a proposed commercial project typically includes the following:

- Determine the short-term construction noise and vibration impacts on off-site noise-sensitive uses. This was based on published noise emission data of construction equipment and use of calculations to account for distance attenuation between the source of the noise and the receiver. Vibration impacts were assessed based on methodologies developed by the Federal Transit Administration.
- Determine the long-term noise and vibration impacts, including refuse truck traffic and on-site operational noise impacts, on off-site uses. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions in proximity to the project site. Vibration impacts were assessed based on methodologies developed by the Federal Transit Administration.
- Determine the required mitigation measures to reduce long-term noise and vibration impacts from all sources if necessary.

Characteristics of Sound

Sound is increasing to such disagreeable levels in the environment that it can threaten quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high

frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 decibels (dB) are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. Thirty dB represent 1,000 times as much acoustic energy as one decibel. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source, noise in a relatively flat environment with absorptive vegetation, decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first is audible impacts that refer to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dB or greater because this level has been found to be barely perceptible in exterior environments.

The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 190 dBA will rupture the eardrum and permanently damage the inner ear. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

Table A lists Definitions of Acoustical Terms. Table B shows Common Sound Levels and Their Sources. Table C shows Land Use Compatibility for Exterior Community Noise recommended by the California Department of Health, Office of Noise Control.

Groundborne Vibration

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Vibration-induced structural damage is not a factor for normal transportation projects, including highways, but may be an issue if blasting and pile driving occur during construction. The proposed project would not involve the need for blasting or pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 decibels or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of groundborne vibration are construction activities (e.g., blasting, pile driving, and operating heavy duty earth-moving equipment), steel-wheeled trains, and occasional traffic on rough roads. When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that groundborne vibration from street traffic will not exceed the impact criteria; however, heavy truck traffic associated with the project could result in ground-borne vibration that could be perceptible and annoying. Groundborne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than groundborne noise.

Groundborne vibration has the potential to disturb people as well as to damage buildings. Although it is very rare for train or roadway traffic-induced groundborne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA, 1995). Groundborne vibration is usually measured in terms of vibration velocity, either the root-mean-square (rms) velocity or peak particle velocity (PPV). Rms is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as:

$L_V = 20 \log_{10} [V/V_{ref}]$

where L_V is the velocity in decibels (VdB), "V" is the rms velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or $1x10^{-6}$ inches/second used in the USA. Table D illustrates human response to various vibration levels as described in the Federal Transit Administration Transit Noise and Vibration Impact Assessment (FTA, April 1995).

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control 1991.

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc. 2002.

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50-55	55-70	70+
Auditoriums, concert halls, amphitheaters	45-50	50-65	65-70	70+
Residential: low-density single-family, duplex, mobile homes	50-55	55-70	70-75	75+
Residential: multifamily	50-60	60-70	70-75	75+
Transient lodging: motels, hotels	50-60	60-70	70-80	80+
Schools, libraries, churches, hospitals, nursing homes	50-60	60-70	70-80	80+
Actively used open spaces: playgrounds, neighborhood parks	50-67	C	67-73	73+
Golf courses, riding stables, water recreation, cemeteries	50-70	C	70-80	80+
Office buildings, business commercial and professional	50-67	67-75	75+	C
Industrial, manufacturing, utilities, agriculture	50-70	70-75	75+	C

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: Office of Noise Control, California Department of Health 1976.

Table D: Human Response to Different Levels of Groundborne Noise and Vibration

Vibration Velocity Level	Noise Level		Human Response
	Low Freq[1]	Mid Freq[2]	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level unacceptable. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there is an infrequent number of events per day. Low-frequency noise unacceptable for sleeping areas, mid-frequency noise unacceptable even for infrequent events with institutional land uses such as schools and churches.

Source: Federal Transit Administration, 1995, and Federal Railroad Administration, 1998.

Factors that influence groundborne vibration and noise include the following:

- Vibration Source: Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source
- Vibration Path: soil type, rock layers, soil layering, depth to water table, and frost depth
- Vibration Receiver: foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to when it is at ground surface. In addition, soil conditions are known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience with groundborne vibration is that vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in groundborne vibration problems at far distances from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

[1] Approximate noise level when vibration spectrum peak is near 30 Hz.

[2] Approximate noise level when vibration spectrum peak is near 60 Hz.

EXISTING CONDITIONS

Sensitive Land Uses in the Project Vicinity

The access roads leading to the Olinda Alpha landfill site include Imperial Highway and Valencia Avenue. The closest noise-sensitive uses, such as residential homes, are located more than 1,590 feet from all areas with noise-producing activities on the project site.

Overview of the Existing Noise Environment

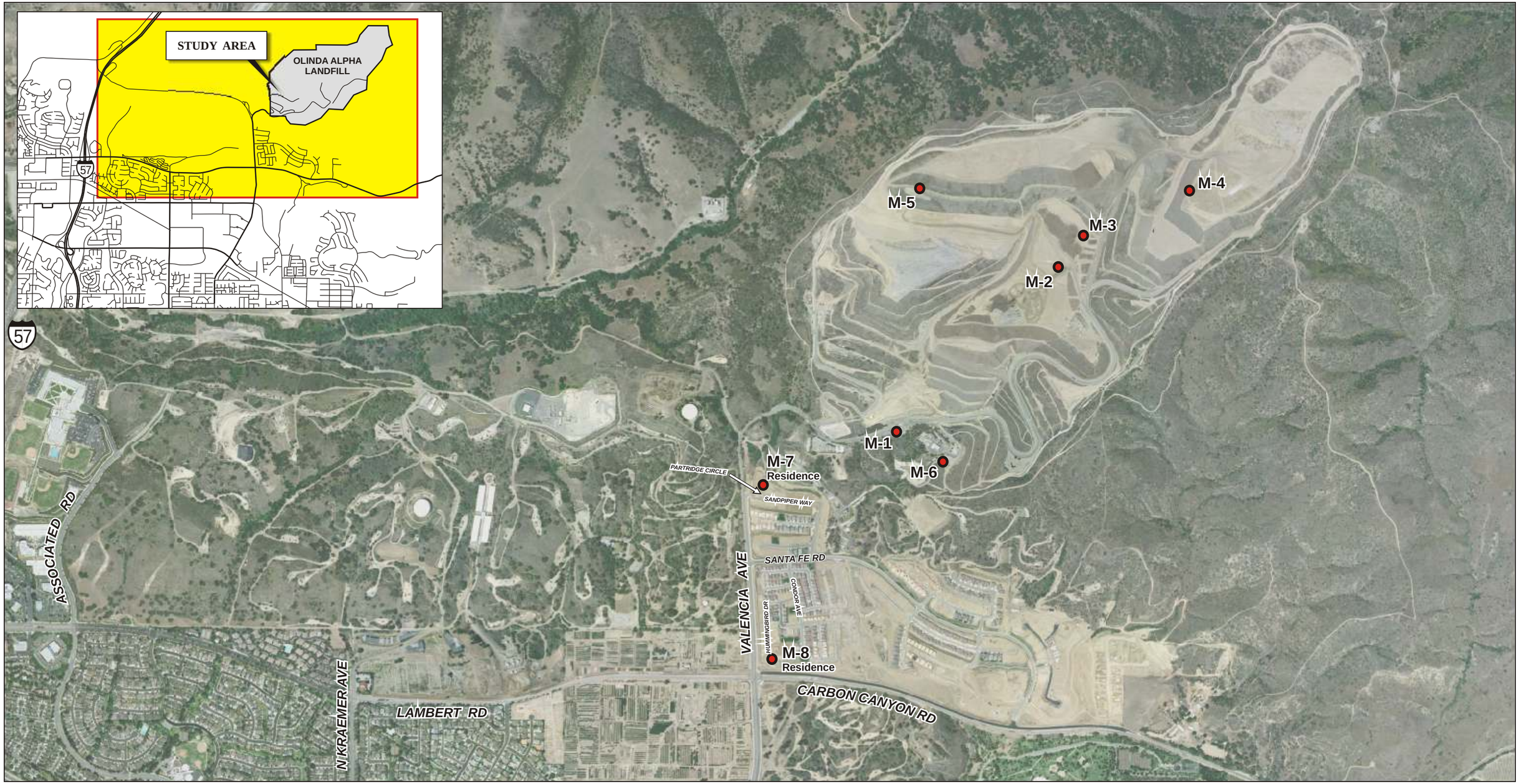
Ambient Noise Survey. An ambient noise survey at 11 locations on and adjacent to the project site was conducted on February 5, 10, and 27, 2004, by an LSA staff member. The survey included noise measurements at the project site and adjacent to nearby existing and planned future noise-sensitive receptors. On-site noise measurements (M-1 through M-6) were conducted to quantify noise levels from existing landfill operations, while the off-site measurements (M-7 through M-10) focused upon ambient noise conditions at nearby existing and planned residential areas. Table E lists the measured ambient noise levels on the project site that were dominated by the landfill-related operations, and off-site areas that were dominated by vehicular traffic. Light aircraft noise was found to be an occasional contributor to the noise environment, both on-site and off-site. Noise from on-site landfill activities was not audible at nearby existing and planned future residences during the noise survey. Figure 4 depicts these noise-monitoring locations.

Noise monitoring was performed using a Larson-Davis Model 820 Type 1 Sound Level Meter. The L_{eq}, L_{min}, and L_{max} values were recorded. The L_{eq} value is representative of the equivalent noise level or logarithmic average noise level obtained over the measurement period. The L_{min} and L_{max} represent the minimum and maximum root-mean-square noise levels obtained over a period of one second. The readings were all taken approximately 5 feet above ground and no closer than 20 feet to any reflective surfaces (e.g., walls). The readings are included in Table E and summarized below.

Table E: Ambient Noise Levels On and Adjacent to Olinda Alpha Landfill, dBA

Receptor/Date	L_{eq}	L_{max}	L_2	L_8	L_{25}	L_{50}
M-1/2-5-04	69.8	87.3	77.3	73.5	70.2	66.0
M-2/2-5-04	71.9	84.0	78.4	76.5	72.5	69.6
M-3/2-5-04	76.6	88.6	82.6	79.6	76.9	75.3
M-4/2-5-04	59.8	71.4	65.8	64.0	61.8	57.1
M-5/2-5-04	52.3	66.2	61.0	57.8	50.6	47.3
M-6/2-5-04	67.8	69.7	69.1	68.7	68.2	67.7
M-7/2-10-04	50.6	62.2	58.9	54.5	50.5	47.0
M-8/2-10-04	55.0	68.2	59.8	57.5	55.5	53.7
M-9/2-10-04	59.1	69.0	64.8	62.8	59.8	57.5
M-10/2-10-04	58.4	71.0	63.8	62.2	59.9	55.9
M-11/2-27-04	65.0	76.3	72.4	69.9	64.9	62.3

Source: LSA Associates, Inc., February 5, 10, and 27, 2004.



LSA

NOISE MONITORING STATION

FIGURE 4A

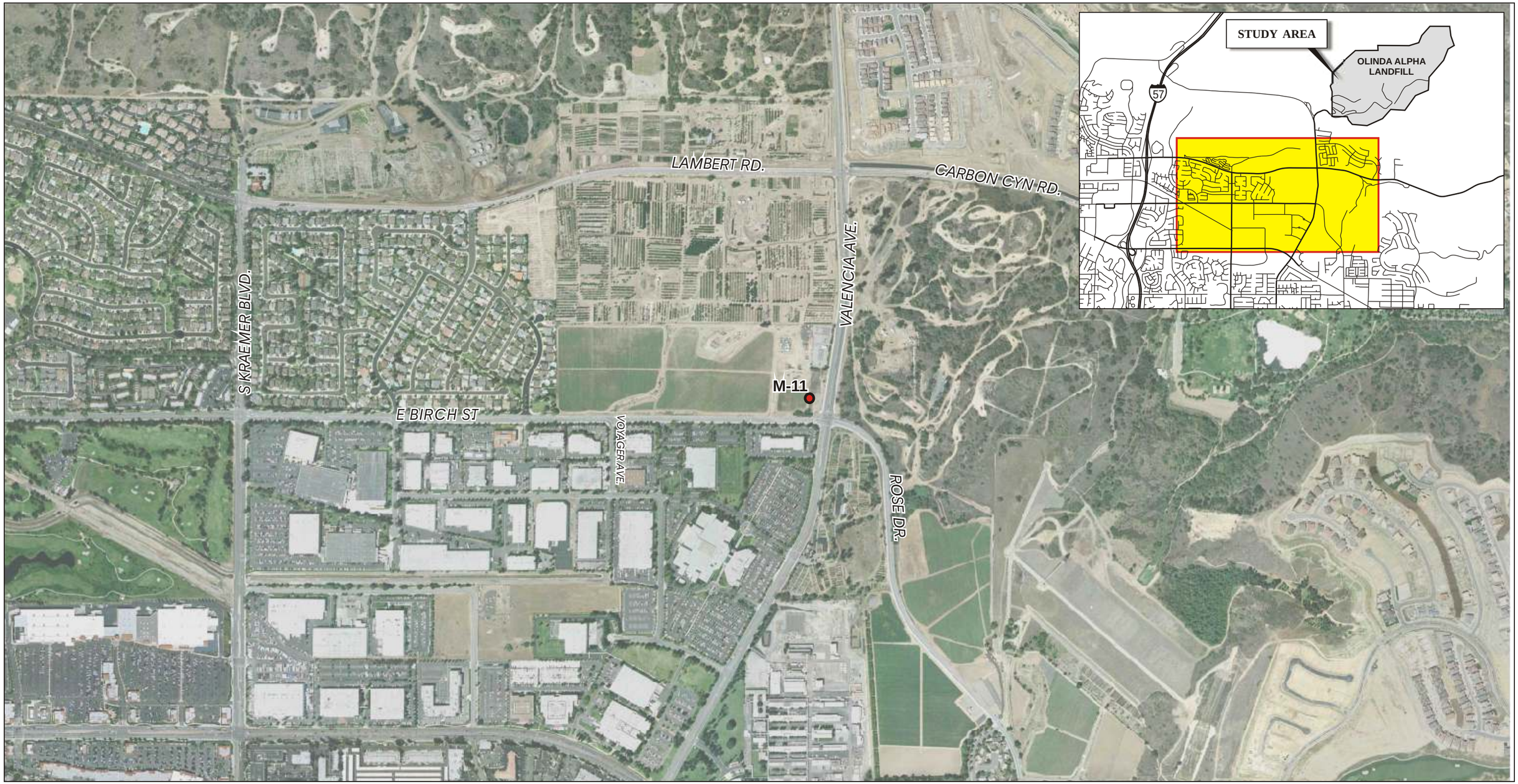
NO SCALE

SOURCE: EAGLE AERIAL

I:\PND830\G\Monitoring_N.cdr (2/19/04)

Relooc Strategic Plan

Noise Monitoring Locations



LSA

NOISE MONITORING STATION

FIGURE 4B

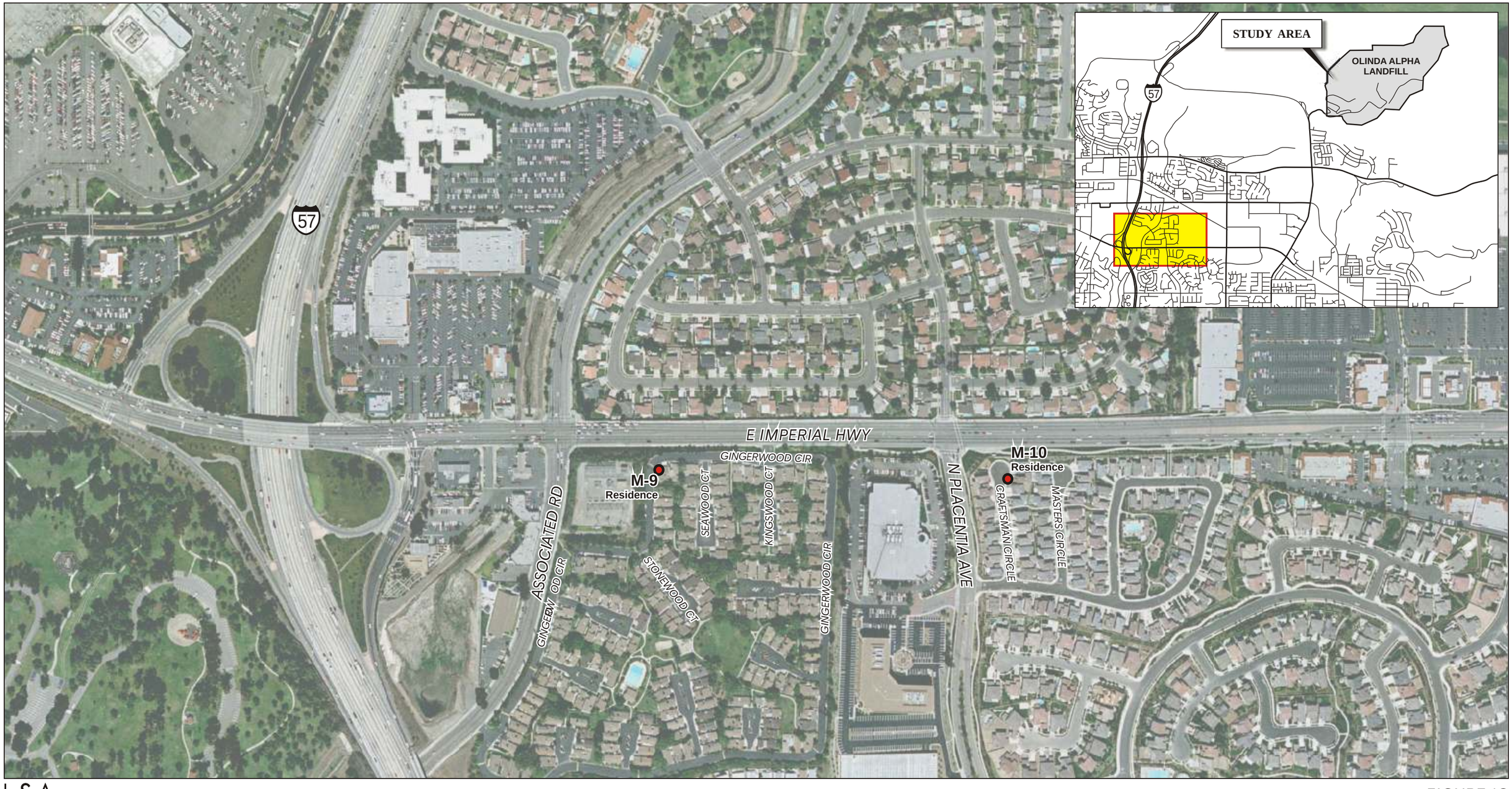
NO SCALE

SOURCE: EAGLE AERIAL

Relooc Strategic Plan

Noise Monitoring Locations

I:\PND830\G\Monitoring_Centrl.cdr (3/5/04)



LSA

NOISE MONITORING STATION

FIGURE 4C

NO SCALE

SOURCE: EAGLE AERIAL

Relooc Strategic Plan

Noise Monitoring Locations

I:\PND830\G\Monitoring_S.cdr (2/19/04)

M-1: Noise measurements at Site M-1 were conducted approximately 30 feet from the nearest traveling lane at the weigh station at the landfill entrance. The weigh station has four roadway lanes, two for entering trucks and two for exiting trucks. Noise sources included heavy trucks idling, brakes squeaking and releasing compressed air, people talking approximately 20 feet from the sound level meter, and light autos starting their engines. Noise levels from the weigh station ranged from 60 to 72.6 dBA.

M-2: Noise measurements at Site M-2 were conducted approximately 100 feet from scraping and bulldozing activity and approximately 350 feet from the main tipping/filling area. Noise sources in this area included scraping and bulldozing activity from two scrapers and one dozer; tipping/filling area operations from three dozers, two compactors, and one loader; two scrapers driving by approximately 50 feet from the sound level meter; three heavy trucks traveling near the main tipping/filling area; truck reverse signals from the scraping/bulldozing area and the tipping/filling area; and "cracker shell" (i.e., gun shot) noise (used by the landfill operators as a bird deterrent) in the tipping/filling area. Noise levels from the scraping activity ranged from 73.4 to 80 dBA. Noise levels from scrapers driving by approximately 50 feet from the sound level meter ranged from 62.6 to 77.3 dBA. Noise levels from scrapers gathering dirt approximately 100 feet away ranged from 66.3 to 73.7 dBA. Scraping activity was the dominant noise source at this measurement location. Noise associated with tipping/filling operations was barely noticeable (faint background noise).

M-3: Noise measurements at Site M-3 were conducted approximately 50 feet from the tipping/filling area. Noise sources included three dozers, two compactors, eight to ten refuse trucks, truck reverse signal, and "cracker shell" noise. Noise levels from the tipping/filling activity ranged from 71.2 to 80 dBA at this location. Tipping/filling activity was the dominant noise source. Cracker shell noise was used to scare seagulls away from the trash ready to be covered.

M-4: Noise measurements at Site M-4 were conducted near the southern end of the landfill approximately 270 feet from bulldozing activity and 1,440 feet from the tipping/filling area. Noise sources included bulldozing activity by one dozer and one truck; tipping/filling activity by two dozers and two compactors; idling from two scrapers approximately 200 feet away; and aircraft overflight noise. Noise levels from the bulldozing activity ranged from 57.6 to 65.7 dBA. Noise levels from the tipping/filling activity ranged from 49.6 to 52.9 dBA at this location. Bulldozing activity was the dominant noise source, but it stopped approximately 11 minutes into the noise measurement period.

M-5: Noise measurements at Site M-5 were conducted near the western end of the landfill approximately 800 feet from the scraping activity and 1,580 feet from the tipping/filling area. Noise sources included scraping, tipping/filling, truck reverse signal, aircraft overflight, and crows flying nearby. Noise levels from the scraping activity ranged from 50.1 to 56.7 dBA at this location. Noise levels from the tipping/filling activity ranged from 45.3 to 51.2 dBA.

M-6: Noise measurements at Site M-6 were conducted approximately 50 feet from the GSF Gas to Electric Power Plant. The only noise source was the power plant operations. Noise levels from the power plant operations ranged from 67.0 to 68.0 dBA.

M-7: Noise measurements at Site M-7 were conducted at the center of the cul-de-sac of Partridge Drive near Sandpiper Way. Noise sources included traffic on Valencia Avenue, aircraft overflight, and cars passing by on Partridge Drive. The centerline of Valencia Avenue was approximately 270

feet away from the sound level meter. Homes along Valencia Avenue in this neighborhood have an existing six-foot sound wall along Valencia Avenue.

M-8: Noise measurements at Site M-8 were conducted at 401 Hummingbird Drive, behind an existing six-foot sound wall at the residence and near a playground area. Noise sources included vehicular traffic on Valencia Avenue and Carbon Canyon Road and lawn mower noise in the neighborhood. The centerline of Valencia Avenue was approximately 186 feet away from the sound level meter. The centerline of Carbon Canyon Road was approximately 210 feet away from the sound level meter.

M-9: Noise measurements at Site M-9 were conducted behind an existing eight-foot sound wall in front of a residence. Noise sources included traffic on Imperial Highway and some traffic on Gingerwood Circle. The centerline of Imperial Highway was approximately 105 feet away from the sound level meter.

M-10: Noise measurements at Site M-10 were conducted at the cul-de-sac of Craftsman Circle near 523 Gingerwood Circle. Noise sources included traffic on Imperial Highway and some traffic on Gingerwood Circle. There is an existing 12-foot sound wall (6 feet of plexi-glass on top of 6 feet of concrete block wall) along Imperial Highway. The centerline of Imperial Highway was approximately 130 feet away from the sound level meter.

M-11: The proposed Birch Intermediate School is located directly adjacent to Birch Street but is approximately 1,645 feet from the edge of Valencia Avenue, separated by a sports park. The proposed intermediate school will have classroom buildings and an outdoor sports activity area adjacent to Birch Street. Ambient noise monitoring was conducted by LSA staff on February 27, 2004. The noise monitoring was conducted from 8:26 a.m. to 8:41 a.m. at a location on the northwest corner of the intersection of Birch Street and Valencia Avenue, approximately 45 feet from the centerline of both streets. The monitored results are as follows: 65 dBA L_{eq}, 76.3 dBA L_{max}, 49.3 dBA L_{min}, 72.4 dBA L_2, 69.9 dBA L_8, 64.9 dBA L_{25}, and 62.3 dBA L_{50}. Vehicular traffic on Valencia Avenue, including heavy trucks, contributed to most of the ambient noise, with a minor contribution from traffic on Birch Street.

It is found that on-site noise levels are relatively high in areas close to where active landfill activities occur (M-1, M-2, M-3, and M-6) and moderate in areas at a distance to these activities (M-4 and M-5). Off-site noise levels are low in areas away from major arterials (R-7) and moderate in areas adjacent to major roads (M-8, M-9 and M-10). It should be noted that the homes are shielded acoustically from the landfill by several local ridgelines. Noise that may be discernible from the landfill by residents may include distant “cracker shell” noise, as well as noise from flares and the gas-to-energy plant.

The County IWMD commissioned a noise impact study for the Olinda Alpha Landfill in 2000 (URS Greiner Woodward-Clyde, May 2000), in which six short-term and two long-term noise measurements were conducted. The short-term noise monitoring results were consistent with LSA’s findings for both on-site and off-site noise measurements. The long-term noise data from the May 2000 noise study showed that ambient noise levels at the nearest residential area are not correlated with landfill hours of operation. Ambient noise appeared to result from local activity only.

Modeled Existing Vehicular Traffic Noise. Table F lists the calculated traffic noise levels along roadway segments in the project vicinity. The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic related noise conditions along Valencia Avenue, Carbon Canyon Road, Imperial Highway, Lambert Road, Birch Street, Rose Drive, and State Route 57 (SR-57). Table F shows that noise levels along most roadway segments in the project vicinity are high. The noise contour for the specified CNEL is expressed as distance from the centerline in each direction of the road segment.

Thresholds of Significance

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community in which it is located. The applicable noise standards governing the project site are the criteria in the County's General Plan Noise Element and its Noise Ordinance. Because the project site is adjacent to residences in the City of Brea, the City's noise standards are also discussed in this analysis.

County of Orange

General Plan Noise Element. The Noise Element of the County of Orange (County) General Plan has developed noise standards for mobile noise sources. These standards address the impacts of noise from adjacent roadways and airports, including John Wayne Airport (JWA). The County specifies outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, and commercial and other land uses. The noise standard for exterior living areas is 65 dBA CNEL. The County prohibits new residential land uses within the 65 dBA CNEL contour from any airport or air station. Non-residential noise-sensitive land uses, such as hospitals, rest homes, convalescent hospitals, places of worship, and schools will not be permitted within the 65 dBA CNEL area from any source unless appropriate mitigation measures are included such that the standards contained in the Noise Element and in appropriate State and federal codes are met. The indoor noise standard is 45 dBA CNEL, which is consistent with the standard in the California Noise Insulation Standard. The County also enforces building sound transmission and indoor air ventilation requirements specified in Chapter 35 of the Uniform Building Code. However, for commercial uses the County only specifies interior noise standards in terms of the hourly L_{eq}. The noise level for the interior spaces of retail stores and restaurants shall not exceed 55 dBA L_{eq}.

Table F: Existing Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane
Valencia Avenue					
North of Santa Fe Avenue	3,940	51	110	236	69.4
Carbon Canyon Road to Santa Fe Avenue	5,340	53	113	244	69.6
Between Birch Street and Carbon Canyon Road	18,370	75	158	338	70.7
Between Imperial Highway and Birch Street	11,800	57	118	252	68.8
Imperial Highway					
Between SR-57 and Associated Road	58,800	186	397	854	75.9
Between Associated Road and Kraemer Boulevard	45,030	157	333	715	74.8
Between Kraemer Boulevard and Valencia Avenue	44,550	154	330	710	75.5
East of Valencia Avenue	38,580	140	300	645	74.9
Carbon Canyon Road					
East of Valencia Avenue	18,180	54	112	239	68.4
Lambert Road					
West of Valencia Avenue	17,900	54	111	236	68.3
Between SR-57 and Associated Road	45,100	96	203	437	72.4
Birch Street					
West of Valencia Avenue	12,450	< 50[1]	88	186	66.8
Between SR-57 and Associated Road	21,060	59	123	263	69.0
Rose Drive					
East of Valencia Avenue	17,010	50	107	229	68.1
SR-57					
North of Lambert Road	214,000	793	1,707	3,675	84.8
Imperial Highway to Lambert Road	222,000	808	1,738	3,743	84.9
South of Imperial Highway	246,000	870	1,873	4,033	85.4

Source: LSA Associates, Inc., February 2004.

[1] Traffic noise within 50 feet of roadway centerline requires site-specific analysis.

"Outdoor living area" is a term used by the County to define spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio, barbecue, and jacuzzi areas, etc., associated with residential uses; outdoor patient recovery or resting areas, etc., associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship that have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes that may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas; driveways; greenbelts; maintenance areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas). The County does not specify outdoor noise standards for non-outdoor living areas.

The standard County Conditions of Approval require that all residential and non-residential noise-sensitive structures be sound-attenuated against the combined impact of all present and projected noise from exterior noise sources (including aircraft and highway noise) to meet the interior noise criteria as specified in the Noise Element and Land Use/Noise Compatibility Manual (which is 45 dBA CNEL interior).

Noise Control Ordinance. The County's Conditions of Approval require that all construction vehicles or equipment, fixed or mobile, operated within 1,000' of a dwelling unit shall be equipped with properly operating and maintained mufflers. All operations shall comply with Orange County Codified Ordinance Division 6 (Noise Control). Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings. As specified in the Orange County Codified Ordinance Division 6 (Noise Control), construction activities are generally restricted to between 7:00 a.m. and 8:00 p.m. from Monday through Saturday. No construction activity is permitted on Sundays and federal holidays. Construction noise during the allowed construction time periods are exempted from the noise level provisions in the noise control ordinance.

It is stated in the County's Noise Control Ordinance that exterior noise levels for residential properties shall not exceed the basic noise standard of 55 dBA between the hours of 7:00 a.m. and 10:00 p.m. and shall not exceed 50 dBA between the hours of 10:00 p.m. and 7:00 a.m., plus the following limits:

- Basic noise level for a cumulative period of not more than 30 minutes in any 1 hour; or
- Basic noise level plus 5 dBA for a cumulative period of not more than 15 minutes in any 1 hour; or
- Basic noise level plus 10 dBA for a cumulative period of not more than 5 minutes in any 1 hour; or
- Basic noise level plus 15 dBA for a cumulative period of not more than 1 minutes in any 1 hour; or
- Basic noise level plus 20 dBA for any period of time.

The basic interior noise standard for residential uses are set as 45 dBA between 10:00 p.m. and 7:00 a.m., and 55 dBA between 7:00 a.m. and 10:00 p.m., plus the following limits:

- Basic noise level for a cumulative period of not more than five minutes in any one hour; or
- Basic noise level plus five dBA for a cumulative period of not more than one minute in any one hour; or
- Basic noise level plus 10 dBA for any period of time.

In the event that ambient noise levels exceed any of the above noise limits, the cumulative period applicable to said category shall be increased to reflect said ambient noise level.

It shall be unlawful for any person at any location within the unincorporated area of the County to create any noise, or to allow the creation of any noise, that causes the noise level to exceed the residential noise standards stated above. Each of the noise limits above shall be reduced by 5 dBA for noise consisting of impact noise, simple tone noise, speech, music, or any combination thereof.

City of Brea

Noise Element of the General Plan. The City's General Plan Noise Element states that "The City will use land use compatibility standards when planning and making development decisions in order to ensure that noise producers do not adversely affect sensitive receptors." The Noise Element also indicates that "Contours of 60 dBA (CNEL) or greater define noise impact areas." Based on the Noise/Land Use Compatibility chart included in the Noise Element, residential uses are normally acceptable in areas up to 60 dBA CNEL, conditionally acceptable in areas between 60 and 65 dBA CNEL, normally unacceptable in areas from 65 to 75 dBA CNEL, and clearly unacceptable in areas above 75 dBA CNEL.

Noise Control Ordinance. The City's Municipal Code, Chapter 8.20, Noise Control, adopted exterior and interior noise standards similar to those adopted by the County of Orange. Noise sources associated with construction, repair, remodeling, or grading of any real property are exempt from the provisions of the City's Noise Control Ordinance if the activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

Vibration Impact Criteria

The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event. Because there are no adopted vibration thresholds for areas adjacent to highways, vibration criteria recommended for areas adjacent to railroad tracks by the Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) are listed below as guidelines.

Federal Transit Administration and Federal Railroad Administration. Both the FTA in its *Transit Noise and Vibration Impact Assessment* (FTA, April, 1995) and the FRA in its *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (FRA, December, 1998) included ground-borne vibration and noise impact criteria guidance, as shown in Table G. The criteria presented in Table G account for variation in project types as well as the frequency of events, which

differ widely among projects. This is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, where the term "frequent events" is defined as more than 70 events per day.

There are some buildings, such as concert halls, TV and recording studios, and theaters, that can be very sensitive to vibration and noise but do not fit into any of the three categories described in Table G. Because of the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a transit project. Table H gives criteria for acceptable levels of ground-borne vibrations and noise for various types of special buildings. The criteria in Table H are related to ground-borne vibration causing human annoyance or interfering with use of vibration-sensitive equipment. It is extremely rare for vibration from train operations or highway traffic to cause any sort of building damage, even minor cosmetic damage. However, there is sometimes concern about damage to fragile historic buildings located near railroad track rights-of-way. Even in these cases, damage is unlikely except when the tracks will be very close to the structure.

Table G: Ground-Borne Vibration and Noise Impact Criteria

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent[1] Events	Infrequent[2] Events	Frequent[1] Events	Infrequent[2] Events
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[3]	65 VdB[3]	B[4]	B[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Source: Federal Transit Administration 1995.

1 "Frequent Events" is defined as more than 70 events per day.
2 "Infrequent Events" is defined as fewer than 70 events per day.
3 This criterion limit is based on levels that are acceptable for most moderately-sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
4 Vibration-sensitive equipment is not sensitive to ground-borne noise.

IMPACTS AND MITIGATION MEASURES

Short-Term Construction-Related Impacts

The project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional gas control facilities. Surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, and a liner system for the lateral expansion will accommodate expansion of the landfill operations. Because the proposed horizontal expansion area is located in the northeast portion of the project site, it is farther away from the existing and planned off-site residences in the project vicinity than the existing landfilling area. Any construction activity required for the proposed project would be conducted away from these residences. Noise levels from construction activities on the project site would be below 50 dBA L_{max} at the nearest off-site residences for very limited times. Construction-related noise impacts from the proposed project would comply with the County's Noise Control Ordinance and would be less than significant.

Short-term noise impacts would be associated with excavation, grading, and backfilling to construct the liner system, surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems during construction of the proposed project. Construction-related short-term noise levels would be higher than existing ambient noise levels in the project area but would no longer occur once construction was completed.

Because the proposed project is not proposing an increase in daily tonnage rates, the equipment used for daily landfill operations will also be used during the expansion operation. Therefore, there is no need to transport additional construction equipment to the project site for daily operations. Landfill operations occur in discrete areas that move from day to day, and consequently, create their own noise characteristics. These various sequential phases would change the character of the noise generated on site and therefore the noise levels surrounding the site as operations progress. Despite the changing location of landfill equipment, similarities in the dominant noise sources and patterns of operation allow operations-related noise ranges to be categorized by work phase. Table I lists typical construction equipment noise levels recommended for noise impact assessments based on a distance of 50 feet between the equipment and a noise receptor. Typical noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full-power operation followed by three or four minutes at lower power settings.

Construction of the proposed project improvements is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. This equipment would be used on the project site. Based on the information in Table I, the maximum noise level generated by each earthmover on the proposed project site is assumed to be 88 dBA L_{max} at 50 feet from the earthmover. Each bulldozer would also generate 88 dBA L_{max} at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound source with

Table H: Ground-Borne Vibration and Noise Impact Criteria for Special Buildings

Type of Building or Room	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent[1] Events	Infrequent[2] Events	Frequent[1] Events	Infrequent[2] Events
Concert Halls	65 VdB	65 VdB	25 dBA	25 dBA
TV Studios	65 VdB	65 VdB	25 dBA	25 dBA
Recording Studios	65 VdB	65 VdB	25 dBA	25 dBA
Auditoriums	72 VdB	80 VdB	30 dBA	38 dBA
Theaters	72 VdB	80 VdB	35 dBA	43 dBA

Source: Federal Transit Administration 1995.

1 "Frequent Events" is defined as more than 70 events per day.
2 "Infrequent Events" is defined as fewer than 70 events per day.

Table I: Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	74 to 84	80
Dozers	77 to 90	85
Scrapers	83 to 91	87
Haul Trucks	83 to 94	88
Cranes	79 to 86	82
Portable Generators	71 to 87	80
Rollers	75 to 82	80
Tractors	77 to 82	80
Front-End Loaders	77 to 90	86
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 89	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman 1987.

equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst-case combined noise level during this phase of construction would be 91 dBA L_{max} at a distance of 50 feet from the active construction area.

The nearest noise-sensitive uses are those to the southwest of the project site approximately 4,500 feet from the proposed expansion area, which would provide a 39 dBA noise reduction by distance divergence alone. In addition, the intervening ridgeline between the expansion area and the off-site residences acts as a barrier and provides a minimum 5 dBA reduction. Therefore, these nearest off-site residences may be subject to short-term intermittent maximum noise reaching 47 dBA L_{max}, generated by construction activities on the project site. This range of construction noise levels would be below the County's 75 dBA L_{max} for daytime hours and 70 dBA L_{max} for nighttime hours. They would also be lower than the 55 dBA L_{50} for daytime hours and 50 dBA L_{50} for nighttime hours in the nearest residential areas. In addition, on-site construction activity would comply with the County's Noise Control Ordinance requirements. Therefore, project-related construction noise impacts would be less than significant.

Long-Term On-Site Stationary Noise Impacts

The proposed project expansion area is located in the northeast portion of the landfill site. Tipping/filling activities generate approximately 88.6 dBA L_{max} at a distance of 50 feet. Scraping and bulldozing activities generate approximately 84 dBA L_{max} at a distance of 100 feet (or approximately 90 dBA L_{max} at a distance of 50 feet). Power plant-related operations generate approximately 69.7 dBA L_{max} at a distance of 50 feet. The nearest off-site residences are more than 1,590 feet from the power plant and 4,500 feet from the tipping/filling area (in the expansion area). Distance divergence alone would provide the off-site residences a minimum of 30 and 39 dBA, respectively, in noise attenuation. The intervening terrain (i.e., the local ridgelines) would provide an additional noise reduction of 5 dBA or more. Therefore, noise associated with power plant operations on the project site would be reduced to 35 dBA L_{max} or lower. Noise associated with landfill activities (including the "cracker shell" noise) in the expansion area of the project site would be reduced to 46 dBA L_{max} or lower. This range of noise levels would be lower than the County's (and the City of Brea's) noise ordinance maximum noise levels for daytime and nighttime periods. This range of noise levels is also lower than the County's (and the City of Brea's) noise ordinance medium (L_{50}) noise levels for daytime and nighttime periods. In addition, in the neighborhood of these off-site residences this range of noise would be below the traffic noise and other community noises combined. No significant stationary noise impact from the proposed project would occur. No mitigation measures would be required.

Long-Term Traffic Noise Impacts

The proposed project would result in the continuation of landfill-related vehicular trips to and from the Olinda Alpha Landfill. Along roadway segments with existing and/or projected heavy volumes of traffic, project-related traffic would not contribute significant changes to the traffic noise. Along roadway segments with relatively low traffic volumes, there would be a higher percentage of traffic from project-related vehicle trips. Although traffic noise along these less traveled roadway segments

would be much lower than those heavily traveled, project-related traffic noise impacts would be potentially significant due to the high percentage of truck traffic.

Based on the traffic study prepared for this project, the proposed project would generate 2,168 daily vehicle trips. These daily traffic trips would be distributed through Valencia Avenue, Imperial Highway, Lambert Road, and SR-57.

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along Valencia Avenue, Imperial Highway, Lambert Road, Birch Street, Rose Drive, and Carbon Canyon Road in the project vicinity. Standard vehicle mix for Orange County roadways was used for traffic on Carbon Canyon Road, Birch Street, and Rose Drive. Traffic mix along Imperial Highway (SR-90) in the project area included in Caltrans Annual Average Daily Truck Traffic on the California State Highway System was used for Imperial Highway and Lambert Road in the project area. Truck percentages on Valencia Avenue were increased based on the daily vehicular trips related to landfill operations. The modeled 24-hour CNEL levels are shown in Tables J and K. These noise levels represent the worst-case scenario, which assumes no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix A.

Table J shows that traffic noise along roadway segments in the project vicinity under the future no project scenario would continue to be relatively high, except along Valencia Avenue and Birch Street. Table K shows that project-related traffic noise level increases would be small (3 dBA or less) and would not be perceptible to the human ear along most of the roadway segments in the project vicinity, except along Valencia Avenue north of Carbon Canyon Road leading to the landfill. Along this segment of Valencia Avenue, landfill-related traffic accounts for approximately half of the daily traffic volume. Without the truck-dominated landfill traffic, noise along this segment of Valencia Avenue would be approximately 11 to 12 dBA lower compared to the levels with landfill traffic included. Although homes are protected by a six-foot sound wall and therefore not be exposed to outdoor noise levels exceeding the 65 dBA CNEL standard, the 12 dBA increase in traffic noise between the with project and no project scenarios is considered substantial. In an outdoor environment a noise increase of 3 dBA or more can be discerned by the human ear. Without the landfill traffic, homes along Valencia Avenue north of Carbon Canyon Road would be exposed to noise levels lower than the 53 dBA CNEL. With the landfill traffic, these frontline homes would be exposed to traffic noise lower than 65 dBA CNEL (with a 6-foot sound wall). Though the project will not increase noise above existing conditions because it would not change the volume of traffic as it is occurring in 2004, the continuation of landfill activities due to the project at 2013 would result in a 12 dBA increase above the no project scenario. As such, the 12 dBA increase in noise is considered substantial and is a potentially significant impact for long-term transportation-related noise.

The project will not increase the rate of daily traffic and thus will not increase noise levels on the roads leading to the project site beyond those currently experienced. The nearest existing and planned residential development is located adjacent to Valencia Avenue and Carbon Canyon Road. Valencia Avenue serves as the access road to and from the Olinda Alpha Landfill. The City of Brea, as the Lead Agency of this nearest residential development project, has placed noise standards upon the developer of the residential project as a condition of approval. Noise abatement measures such as landscaped berms or sound walls has been or will be constructed as necessary to ensure that noise

Table J: Future Baseline (No Project) Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane
Valencia Avenue					
North of Santa Fe Avenue	2,675	< 50[1]	< 50	< 50	58.5
Carbon Canyon Road to Santa Fe Avenue	2,675	< 50	< 50	< 50	58.5
Between Birch Street and Carbon Canyon Road	20,026	58	119	255	68.8
Between Imperial Highway and Birch Street	10,078	< 50	77	162	65.8
Imperial Highway					
Between SR-57 and Associated Road	59,496	188	400	861	76.0
Between Associated Road and Kraemer Boulevard	48,496	165	350	751	75.1
Between Kraemer Boulevard and Valencia Avenue	48,389	163	349	751	75.9
East of Valencia Avenue	44,764	155	331	713	75.5
Carbon Canyon Road					
East of Valencia Avenue	38,965	87	185	396	71.7
Lambert Road					
West of Valencia Avenue	35,684	82	174	374	71.3
Between SR-57 and Associated Road	47,684	99	211	453	72.6
Birch Street					
West of Valencia Avenue	17,000	< 50	107	229	68.1
Between SR-57 and Associated Road	28,000	71	149	318	70.3
Rose Drive					
East of Valencia Avenue	21,949	61	127	271	69.2
SR-57					
North of Lambert Road	330,557	1,059	2,280	4,911	86.7
Imperial Highway to Lambert Road	317,473	1,031	2,220	4,780	86.5
South of Imperial Highway	316,827	1,030	2,217	4,774	86.5

Source: LSA Associates, Inc., February 2004.

[1] Traffic noise within 50 feet of roadway centerline requires site-specific analysis.

Table K: Future with Project Traffic Noise Levels

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Outermost Lane	Increase from Baseline Level, dBA
Valencia Avenue						
North of Santa Fe Avenue	5,000	60	129	277	70.5	12.0
Carbon Canyon Road to Santa Fe Avenue	5,000	51	108	233	69.3	10.8
Between Birch Street and Carbon Canyon Road	22,000	84	177	381	71.5	2.7
Between Imperial Highway and Birch Street	12,000	58	119	254	68.8	3.0
Imperial Highway						
Between SR-57 and Associated Road	61,000	191	407	875	76.1	0.1
Between Associated Road and Kraemer Boulevard	50,000	168	357	767	75.2	0.1
Between Kraemer Boulevard and Valencia Avenue	50,000	166	357	767	76.0	0.1
East of Valencia Avenue	45,000	155	332	715	75.6	0.1
Carbon Canyon Road						
East of Valencia Avenue	39,000	87	185	397	71.7	0.0
Lambert Road						
West of Valencia Avenue	36,000	83	175	376	71.4	0.1
Between SR-57 and Associated Road	48,000	100	212	455	72.6	0.0
Birch Street						
West of Valencia Avenue	17,000	< 50	107	229	68.1	0.0
Between SR-57 and Associated Road	28,000	71	149	318	70.3	0.0
Rose Drive						
East of Valencia Avenue	22,000	61	127	271	69.2	0.0
SR-57						
North of Lambert Road	331,000	1,060	2,282	4,915	86.7	0.0
Imperial Highway to Lambert Road	318,000	1,032	2,222	4,786	86.5	0.0
South of Imperial Highway	318,000	1,032	2,222	4,786	86.5	0.0

Source: LSA Associates, Inc., February 2004.

levels for all low- and medium-density residential property will not exceed 65 dBA CNEL. There is an existing six-foot tall sound wall along Valencia Avenue for existing homes in this area. In addition, future residential development that will be built before year 2013 near the project site will be mitigated for noise from traffic along the local roads. For future homes along Valencia Avenue that will be built between 2013 and 2021 and have outdoor active use areas within the 65 dBA CNEL impact area (see Table K), a six-foot sound wall is required along the property line. The County of Orange IWMD should contribute to a roadway noise reduction program if the City of Brea has instituted a program for traffic noise reduction along Valencia Avenue north of Carbon Canyon Road.

However, trucks passing by would result in relatively high single event noise exposure levels at residences along the access roads leading to the project site, including Imperial Highway, Lambert Road, and Valencia Avenue. Although the single event noise exposures would cause annoyance to residences along these access roads, the noise impacts would not be considered significant based on the County's (and City of Brea's) long-term noise standards from transportation related noise.

Potential Noise Impacts from Vehicular Traffic on the Proposed Birch Street Intermediate School . Based on Table K, Future with Project Traffic Noise Levels, the 70, 65, and 60 dBA CNEL noise contours would extend to 84, 177, and 381 feet, respectively, from the centerline of Valencia Avenue. Taking into account the greater distance of the school location, the proposed school site would be exposed to traffic noise up to 50 dBA CNEL from Valencia Avenue, when no man-made or natural intervening barrier exists. This range of traffic noise levels is much lower than the 65 dBA CNEL normally acceptable exterior noise standard for school uses. Standard building attenuation in Southern California would reduce the exterior noise by 12 dBA with windows open and by 24 dBA with windows closed. Therefore, with windows closed, traffic noise on Valencia Avenue would be reduced to 26 dBA CNEL. With windows open, this noise is reduced to 38 dBA CNEL. This range of noise levels is lower than the 24-hour averaged daily 45 dBA CNEL noise level normally acceptable inside classrooms.

Heavy-duty refuse/waste trucks would result in approximately 89 dBA L_{max} when passing by at 50 feet. At 1,645 feet, this maximum noise level associated with refuse/waste trucks would be reduced to 59 dBA Lmax from distance attenuation alone. (Point sources receive 6 dBA noise reduction per doubling of the distance from the source.) This maximum noise level is lower than traffic noise on Birch Street and would be further reduced inside the classrooms or other noise-sensitive buildings on the school site. Therefore, with windows closed, refuse/waste truck noise on Valencia Avenue would be reduced to 35 dBA L_{max}. With windows open, this noise is reduced to 47 dBA L_{max}. This range of maximum noise levels is lower than the 70 dBA L_{max} maximum noise level or the Caltrans 52 dBA L_{eq} noise level normally acceptable inside classrooms.

Based on Table K, Future with Project Traffic Noise Levels, the 65 and 60 dBA CNEL noise contours would extend to 107 and 229 feet, respectively, from the centerline of Birch Street. Therefore, the proposed school site would be exposed to traffic noise up to 65 dBA CNEL from Birch Street when no man-made or natural intervening barrier exists. The proposed intermediate school would place staff and visitor parking along the southern perimeter of the site along Birch Street. This layout would minimize traffic noise impacts from Birch Street on classrooms. Noise impacts from Birch Street traffic would need to be evaluated for the proposed intermediate school outdoor activity areas when

the school site plan is available. However, because no landfill-related truck traffic is permitted to use Birch Street, no landfill-related off-site noise impacts would occur on the proposed intermediate school site.

Potential Noise Impacts from On-Site Landfill Operations on the Proposed Birch Street Intermediate School. The proposed intermediate school is approximately 4,300 feet from the residences near Sandpiper Way, the residences nearest the landfill site. These residences are more than 4,250 feet from the landfill expansion area in the northeastern portion of the landfill. Therefore, noise associated with daily landfill operations would be attenuated by more than 40 dBA at these residences. The Birch Intermediate School is located much farther away than these residences. Intervening terrain (local ridgelines) and man-made structures between the school site and the landfill expansion area would provide additional noise attenuation. Due to the large distance between the proposed school and landfill activities in the expansion area, no landfill noise would be perceived at the school site. No significant noise impacts would occur due to the landfill expansion project.

Vibration Impacts

On-Site Construction and Landfill Related Activities. The proposed project would result in the continued landfill operations in the expansion area in the northeast portion of the project site. Groundborne vibration from on-site construction and landfill related activities would be mostly low to moderate, and would not be perceptible at any off-site sensitive receptor locations.

Bulldozers and other heavy-tracked construction/landfill equipment generate approximately 92 VdB of groundborne vibration when measured at 50 feet, based on the Transit Noise and Vibration Impact Assessment (FTA, April 1995). This level of groundborne vibration exceeds the threshold of human perception, which is around 65 VdB. Based on the California Department of Transportation's *Transportation Related Earthborne Vibration, Technical Advisory* (Rudy Hendricks, July 24, 1992), vibration level at 100 feet is approximately 6 VdB lower than the vibration level at 50 feet. Vibration at 200 feet from the source is more than 6 VdB lower than the vibration level at 100 feet, or more than 12 VdB lower than the vibration level at 50 feet. Therefore, at the nearest residences to the landfill located 1,590 feet from the construction activity may be exposed to groundborne vibration up to 62 VdB. This level of vibration is lower than the human perception threshold of 65 VdB for buildings where low ambient vibration is essential for interior operations (Category 1 in Table G). No annoyance at the nearest off-site residences or any damage to the buildings would occur from on-site construction and landfill-related activities.

On-Road Truck Vibration. The proposed project would result in the continuation of truck traffic to and from the Olinda Alpha Landfill on access roads leading to the landfill from 2013 to 2021. Because the rubber tires and suspension systems of refuse trucks and other on-road vehicles provide vibration isolation, it is unusual for on-road vehicles to cause groundborne noise or vibration problems. When on-road vehicles cause effects such as rattling of windows, the source is almost always airborne noise. Most problems with on-road vehicle-related vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. Based on Caltrans Technical Advisory (Rudy Hendriks, July 24, 1992), maximum highway truck traffic vibration levels would be approximately

0.06 inches per second at 25 feet, or 60 VdB. This is lower than the 65 VdB threshold of human perception (see Table D) and would not have any impact on the buildings. Within the project area there are no homes within 25 feet of a roadway centerline along the travel routes for trucks to the project site. Therefore, levels of vibration are below the threshold of human perception and no vibration impacts would occur.

Mitigation Measures

Construction Impacts. Construction of the proposed project in later phases would potentially result in relatively high noise levels. However, due to the distance to the nearest residence, no construction noise impacts are anticipated. No mitigation is required.

Traffic Noise Impacts. For residential units on Valencia Avenue north of Carbon Canyon Road which are approved prior to any approval of an expansion at Olinda Alpha Landfill, which are constructed and occupied before 2013 and which would be impacted by 65 dBA CNEL or higher traffic noise, the County of Orange IWMD will contribute a fair share to a road noise reduction program for these residences, if such a program is implemented by the City of Brea. This program could potentially implement a variety of road noise reduction measures which may include reduction in road speeds on the segment of Valencia Avenue north of Carbon Canyon Road, construction of sound walls adjacent to the affected residences and/or installation of rubberized asphalt concrete on Valencia Avenue north of Carbon Canyon Road.

Vibration Impacts. No mitigation measures would be required for the proposed project.

Level of Significance after Mitigation

With implementation of the identified mitigation measures, potential long-term noise impacts would be reduced to below the level of significance.

ALTERNATIVES

Alternative 1: No Project Alternative (No Action)

Since neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur under this project alternative, approximately 1,000 tons per day (TPD) of MSW, which is in excess of what could be accommodated at the FRB and Prima Deschecha Landfills, would have to be accommodated at landfills outside of Orange County, since no increases in daily tonnage at FRB or Prima Deschecha landfills are assumed. Out-of-County landfills would have to be permitted to accept the excess tonnage from Orange County and may include El Sobrante Landfill in Riverside County and/or the Mid-Valley Landfill in San Bernardino County.

Because no expansion would occur at Olinda Alpha Landfill after 2013, no additional construction and landfill activities would occur. The landfill activities would be winding down for closure of the landfill. Noise associated with on-site construction and landfill operations would cease to occur.

Under this project alternative, no refuse or waste trucks would come to the Olinda Alpha Landfill after year 2013. Therefore, landfill-related traffic would be reduced to only those employees to process and maintain the landfill closure. Traffic noise along access roads would be reduced to those similar to levels shown in Table J for the future no project scenarios. In addition, although no significant impacts have been identified, traffic-related vibration would also be reduced due to lower traffic volumes without the proposed project.

Regionally, noise and vibration associated with vehicles carrying municipal solid waste would be relocated along routes to other landfills accepting municipal solid waste that was previously destined for Olinda Alpha Landfill.

Alternative 2: Two Landfill System in 2013 (Prima Deschecha Daily Tonnage Increase)

Under this project alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. Under this project alternative, the number of truck trips to Prima Deschecha Landfill would increase, although the duration of the trips would be reduced since the life of the landfill would be shortened.

Since no expansion would occur at Olinda Alpha Landfill after 2013, no additional construction and landfill activities would occur. The landfill activities would be winding down for closure of the landfill. Noise associated with on-site construction and landfill operations would cease to occur.

Under this project alternative, no refuse or waste trucks would come to the Olinda Alpha Landfill after year 2013. Therefore, landfill-related traffic would be reduced to only those employees to process and maintain the landfill closure. Traffic noise along access roads would be reduced to those similar to levels shown in Table J for the future no project scenario. In addition, although no significant impacts have been identified, traffic-related vibration would also be reduced due to lower traffic volumes without the proposed project.

Because truck trips to Prima Deschecha Landfill would increase as a result of this project alternative, traffic noise and vibration along access roads leading to Prima Deschecha Landfill would increase.

Regionally, noise and vibration associated with vehicles carrying municipal solid waste would be relocated along routes to other landfills accepting municipal solid waste that was previously destined for Olinda Alpha Landfill.

Alternative 3: Two Landfill System in 2013 (FRB Daily Tonnage Increase)

Under this project alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. Under this project alternative, the number of truck trips to FRB Landfill would increase, although the duration of the trips would be reduced since the life of the landfill would be shortened.

Because no expansion would occur at Olinda Alpha Landfill after 2013, no additional construction and landfill activities would occur. The landfill activities would be winding down for closure of the landfill. Noise associated with on-site construction and landfill operations would cease to occur.

Under this project alternative, no refuse or waste trucks would come to the Olinda Alpha Landfill after year 2013. Therefore, landfill-related traffic would be reduced to only those employees to process and maintain the landfill closure. Traffic noise along access roads would be reduced. In addition, traffic-related vibration would also be reduced.

Because truck trips to FRB Landfill would increase as a result of this project alternative, traffic noise and vibration along access roads leading to FRB Landfill would increase.

Regionally, noise and vibration associated with vehicles carrying municipal solid waste would be relocated along routes to other landfills accepting municipal solid waste that was previously destined for Olinda Alpha Landfill.

CUMULATIVE IMPACTS

Because the project expansion area is at least 4,250 feet from the nearest off-site sensitive uses, noise associated with construction and daily operations on the project site would have little or no cumulative noise impacts on off-site uses.

Off-site landfill-related traffic, including heavy-duty waste/refuse trucks, would contribute to potentially significant noise impacts due to the 10 to 12 dBA difference with project traffic over the no project scenario. However, existing and proposed homes along the access roads, including Valencia Avenue north of Carbon Canyon Road, have or would be required (by the City of Brea) to have a six-foot sound wall along their property line for their outdoor living area so that the 65 dBA CNEL standard is not exceeded. In addition, traffic noise at homes or other sensitive uses along Imperial Highway leading to the project site are or will have been mitigated through sound wall implementation associated with the Imperial Highway Smart Street project. Therefore, no significant cumulative noise impacts are anticipated from the proposed project.

In addition, because no significant vibration impacts were identified for both on-site operations and off-site truck traffic, no significant cumulative vibration impacts would occur.

REFERENCES

Bolt, Beranek, & Newman, 1987, Noise Control for Buildings and Manufacturing Plants.

California Department of Transportation, July 24, 1992. Transportation Related Earthborne Vibration, Technical Advisory (Rudy Hendricks).

County of Orange, Noise Element and Noise Ordinances.

Federal Highway Administration, 1977, Highway Traffic Noise Prediction Model, FHWA RD-77-108.

Federal Transit Administration, April 1995. Transit Noise and Vibration Impact Assessment.

APPENDIX A

FHWA TRAFFIC NOISE MODEL PRINTOUTS

OLINDA ALPHA LANDFILL EXPANSION

FHWA TRAFFIC NOISE MODEL PRINTOUTS

EXISTING (YEAR 2004) CONDITIONS

TABLE PND830AVA4
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: VALENCIA AVE NORTH OF SANTA FE AVE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3940 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	37.51	6.37	4.47
M-TRUCKS	5.79	0.41	0.08
H-TRUCKS	43.41	1.93	0.03

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.42

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
51.2	109.8	236.2	508.6

TABLE PND830AVA3
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: VALENCIA AVE BTWN LAMBERT RD AND SANTA FE AVE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5340 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	47.47	8.00	5.73
M-TRUCKS	4.66	0.32	0.11
H-TRUCKS	32.21	1.44	0.06

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
52.8	113.2	243.5	524.5

TABLE PND830AVA2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: VALENCIA AVE BIRCH ST TO LAMBERT RD
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18370 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
74.8	157.5	337.5	726.2

TABLE PND830AVA1
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: VALENCIA AVE NORTH OF IMPERIAL HWY
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.75

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.0	117.9	251.6	540.8

TABLE PND830AIH4
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: IMPERIAL HWY BTWN SR-57 AND ASSOCIATED ROAD
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 58800 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.92

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
186.4	397.3	853.9	1838.4

TABLE PND830AIH3
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: IMPERIAL HWY WEST OF KRAEMER BLVD
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 45030 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 74.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
156.9	333.0	715.0	1539.0

TABLE PND830AIH2
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: IMPERIAL HWY WEST OF VALENCIA AVENUE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 44550 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
154.1	330.1	710.3	1529.5

TABLE PND830AIH1
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: IMPERIAL HWY EAST OF VALENCIA AVENUE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38580 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 74.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
140.2	300.0	645.4	1389.7

TABLE PND830ACCR
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: CARBON CANYON ROAD EAST OF VALENCIA AVENUE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18180 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
54.4	112.0	238.8	513.3

TABLE LR1EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD W/O VALENCIA AVE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.34

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
53.9	110.9	236.4	508.0

TABLE LR2EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD SR-57 TO ASSOCIATED RD
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 45100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
95.8	203.4	436.8	940.2

TABLE PND830ABSW
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: BIRCH STREET WEST OF VALENCIA AVENUE
NOTES: EXISTING TRAFFIC

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12450 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	87.8	185.9	399.0

TABLE BS2EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: BIRCH ST SR-57 TO ASSOCIATED RD
NOTES: EXISTING TRAFFIC

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21060 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.4	123.3	263.3	566.1

TABLE PND830ARD
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/17/04
ROADWAY SEGMENT: ROSE DRIVE EAST OF VALENCIA AVENUE
NOTES: EXISTING TRAFFIC

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17010 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.12

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.3	228.6	491.1

TABLE SR571EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 NORTH OF LAMBERT ROAD
NOTES: EXISTING TRAFFIC

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 214000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 84.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
793.1	1706.6	3675.1	7915.7

TABLE SR572EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 IMPERIAL HWY TO LAMBERT ROAD
NOTES: EXISTING TRAFFIC

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 220000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 84.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
807.9	1738.3	3743.4	8062.9

TABLE SR57EX
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 SOUTH OF IMPERIAL HWY
NOTES: EXISTING TRAFFIC

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 246000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 85.39

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
870.2	1872.6	4032.8	8686.3

OLINDA ALPHA LANDFILL EXPANSION

FHWA TRAFFIC NOISE MODEL PRINTOUTS

FUTURE BASELINE CONDITIONS

TABLE VA1FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE N/O SANTA FE RD
NOTES: FUTURE NO PROJECT

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2675 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	95.0

TABLE VA2FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE LAMBERT RD TO SANTA FE ROAD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2675 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 58.47

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	95.0

TABLE VA3FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE BIRCH ST TO LAMBERT RD
NOTES: FUTURE ~~WITH~~ NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20026 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.6	119.3	254.6	547.4

TABLE VA4FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE IMPERIAL HWY TO BIRCH ST
NOTES: FUTURE ~~WITH~~ NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10078 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	76.8	161.7	346.7

TABLE IH1FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY SR-57 TO ASSOCIATED RD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 59496 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
187.8	400.4	860.6	1852.9

TABLE IH2FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY W/O KRAEMER BLVD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48496 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
164.5	349.7	751.1	1616.9

TABLE IH3FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY W/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48389 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.88

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
162.7	348.8	750.5	1616.2

TABLE IH4FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY E/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 44764 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.54

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
154.6	331.2	712.5	1534.4

TABLE CCRFB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: CARBON CANYONRD E/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 38965 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.2	184.7	396.3	852.9

TABLE LR1FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD W/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35684 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.4	174.2	373.8	804.3

TABLE LR2FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD SR-57 TO ASSOCIATED RD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 47684 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
99.3	211.0	453.3	975.7

TABLE BS1FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: BIRCH ST W/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.3	228.5	490.9

TABLE BS2FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: BIRCH ST SR-57 TO ASSOCIATED RD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
70.8	148.5	318.1	684.3

TABLE RDFB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: ROSE DR E/O VALENCIA AVE
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21949 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
60.9	126.6	270.6	581.9

TABLE SR571FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 NORTH OF LAMBERT ROAD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 330557 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1059.2	2280.1	4910.6	10577.2

TABLE SR572FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 IMPERIAL HWY TO LAMBERT ROAD
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 317473 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1031.1	2219.5	4780.2	10296.2

TABLE SR573FB
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 SOUTH OF IMPERIAL HWY
NOTES: FUTURE NO PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 316827 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.49

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1029.7	2216.5	4773.7	10282.2

OLINDA ALPHA LANDFILL EXPANSION

FHWA TRAFFIC NOISE MODEL PRINTOUTS

FUTURE WITH PROJECT CONDITIONS

TABLE VA1FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE FUTURE WITH PROJECT
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	37.51	6.37	4.47
M-TRUCKS	5.79	0.41	0.08
H-TRUCKS	43.41	1.93	0.03

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.9	128.6	276.8	596.1

TABLE VA2FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE LAMBERT RD TO SANTA FE RD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5000 SPEED (MPH): 35 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	47.47	8.00	5.73
M-TRUCKS	4.66	0.32	0.11
H-TRUCKS	32.21	1.44	0.06

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
50.6	108.3	233.1	502.0

TABLE VA3FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVE BIRCH ST TO LAMBERT RD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
83.9	177.4	380.5	818.9

TABLE VA4FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: VALENCIA AVENUE IMPERIAL HWY TO BIRCH ST
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.82

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.6	119.2	254.4	546.8

TABLE IH1FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY SR-57 TO ASSOCIATED RD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 61000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
190.9	407.1	875.1	1884.0

TABLE IH2FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY W/O KRAEMER BLVD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 50000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 30 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
167.8	356.9	766.6	1650.2

TABLE IH3FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY W/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 50000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 76.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
166.3	356.5	767.0	1651.8

TABLE IH4FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: IMPERIAL HWY E/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 45000 SPEED (MPH): 50 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	71.93	11.97	8.90
M-TRUCKS	3.83	0.22	0.47
H-TRUCKS	2.32	0.07	0.29

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 75.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
155.1	332.3	715.0	1539.8

TABLE CCRFP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: CARBON CANYONRD E/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 39000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.72

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
87.2	184.8	396.5	853.4

TABLE LR1FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD W/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 36000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 71.37

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.9	175.3	375.9	809.1

TABLE LR2FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: LAMBERT RD SR-57 TO ASSOCIATED RD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 48000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 72.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
99.7	212.0	455.3	980.0

TABLE BS1FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: BIRCH ST W/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.3	228.5	490.9

TABLE BS2FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: BIRCH ST SR-57 TO ASSOCIATED RD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
70.8	148.5	318.1	684.3

TABLE RDFP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: ROSE DR E/O VALENCIA AVE
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22000 SPEED (MPH): 45 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.0	126.8	271.0	582.8

TABLE SR571FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 NORTH OF LAMBERT ROAD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 331000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.68

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1060.1	2282.1	4915.0	10586.6

TABLE SR572FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 IMPERIAL HWY TO LAMBERT ROAD
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 318000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1032.2	2222.0	4785.5	10307.6

TABLE SR573FP
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 2/20/04
ROADWAY SEGMENT: SR-57 SOUTH OF IMPERIAL HWY
NOTES: FUTURE WITH PROJECT

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 318000 SPEED (MPH): 65 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	69.53	11.57	8.60
M-TRUCKS	3.38	0.20	0.41
H-TRUCKS	5.46	0.17	0.68

ACTIVE HALF-WIDTH (FT): 42 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 86.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
1032.2	2222.0	4785.5	10307.6

APPENDIX I
CULTURAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

CULTURAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

ORANGE COUNTY, CALIFORNIA

LSA

February 27, 2004

CULTURAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

ORANGE COUNTY, CALIFORNIA

Submitted to:

County of Orange
Resources and Development Management Department
300 North Flower Street
Santa Ana, California 92702-4048

Prepared by:

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LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA Project No. PND830

National Archaeological Data Base Information:
Type of Study: Records Search, Survey
Sites Recorded: None
USGS Quadrangle: *Yorba Linda 7.5*N
Survey Area: 33 Acres
Key Words: Negative survey report

LSA

February 27, 2004

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FIGURES

ABSTRACT

LSA Associates, Inc. (LSA) completed an archaeological assessment of the Olinda Alpha Landfill in Orange County, California, for a proposed expansion of the landfill footprints. This work is part of the Regional Landfill Options for Orange County (RELOOC) Strategic Plan, initiated by the County of Orange Integrated Waste Management Department (IWMD). The purpose of the assessment was to determine whether cultural resources are present in the project area. A records search and field survey were conducted for the project area in February 2004.

No cultural material was observed during the field survey. The project area is located on a steep slope that exhibits several large disturbed (terraced) areas. Due to the low potential for buried or otherwise unknown cultural resources, monitoring of project-related ground-disturbing construction activities by a qualified archaeological monitor is unnecessary.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

INTRODUCTION

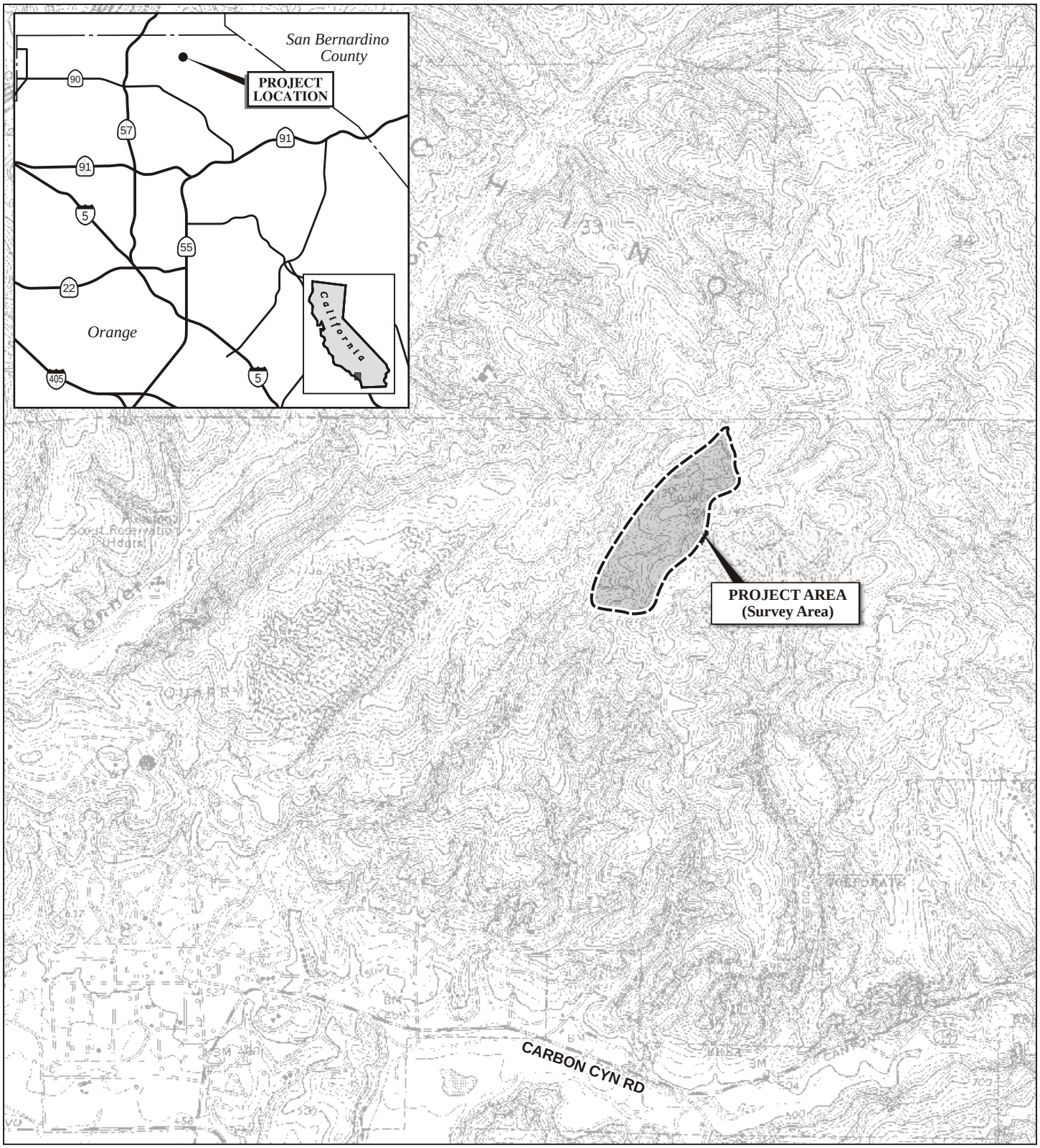
LSA has been contracted by P&D Consultants to conduct an archaeological assessment of an area east of the Olinda Alpha Landfill in Orange County, California. The purpose of the study was to determine whether cultural resources are present in the project area and if so, to assess their importance under the California Environmental Quality Act (CEQA). Sites determined important under CEQA are eligible for listing on the California Register.

The records search indicates that no surveys have been conducted within the project area. Approximately 11 sites have been documented within 1 mile of the project. No previously recorded sites are located within the project area.

As part of RELOOC initiated by IWMD, the County is proposing short-term improvements to the existing Olinda Alpha Landfill, including vertical and horizontal expansion. The current landfill covers 565 acres, with 420 acres permitted for refuse disposal. The height of the landfill will be increased from its current permitted level of 1,300 feet above mean sea level (AMSL) to 1,415 feet AMSL, or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill.

The proposed project is within the boundary of the Olinda Alpha Landfill located at 1942 North Valencia Avenue in unincorporated Orange County adjacent to and within the sphere of influence of the City of Brea. The Olinda Alpha Landfill is generally bounded by Lambert Road to the south and Valencia Avenue to the southwest (Figure 1).

The field survey was conducted on February 13, 2004, by LSA archeologist Roderic McLean. Mr. McLean also prepared the report under the supervision of County Certified Archaeologist Deborah K.B. McLean.



LSA

FIGURE 1

N

0 1000 2000

FEET

SOURCE: USGS 7.5' QUAD - YORBA LINDA, CA

Relooc Strategic Plan

Project Location

I:\PND830\G\Proj Loc.cdr (2/23/04)

CULTURAL SETTING

PREHISTORIC

The development of a regional chronology marking the major stages of cultural evolution in the Southern California area has been an important topic of archaeological research. In general, cultural developments in Southern California have occurred gradually and have shown long-term stability; thus, developing chronologies and applying them to specific locales have often been problematic. Southern California researchers have used changing artifact assemblages and evolving ecological adaptations to divide regional prehistory into four stages. Wallace (1955; 1978) and Warren (1968) have developed the two chronologies most commonly cited. Wallace (1955) uses major cultural developments to divide area prehistory into four time periods, or "cultural horizons": the Early Period, the Milling Stone Period, the Intermediate Period, and the Late Period. The following overview is based primarily on Wallace's chronology, which has been revised slightly by Koerper (1981) and Koerper and Drover (1983).

The Early Period (Prior to 6000 BC)

The Early Period covers the interval from the first presence of humans in Southern California until postglacial times (5500 to 6000 BC). Artifacts and cultural activities from this period represent a predominantly hunting culture; diagnostic artifacts include extremely large, often fluted bifaces associated with use of the spear and the atlatl. In Southern California, important Early Period sites have been found near prehistoric Lake Mohave and along the San Dieguito River (Wallace 1955, 1978:27; Moratto 1984:81, 93–99).

The Milling Stone Period (6000 BC–3000 BC)

The transition from the Early Period to the Milling Stone Period is marked by an increased emphasis on the processing of seeds and edible plants and is estimated to have occurred between 6000 BC and 3000 BC. According to Wallace (1978:28), wild seeds and edible plants formed the primary food source during this period, with only limited use of shellfish and faunal resources; plant resources were processed using deep-basined mills and handstones, hence the term Milling Stone Period. Milling Stone Period settlements were larger and were occupied for longer periods of time than those of the Early Period, and mortuary practices included both flexed and extended burials, as well as reburials. Grave offerings were few, although rock cairns were sometimes placed over the bodies (Wallace 1955:192, Table 1; 1978:28).

Diagnostic artifacts recovered from Milling Stone Period archaeological sites include metates and manos, and large projectile points indicating the continued use of darts and atlatls. Among the more enigmatic artifacts from this period are discoidals and cogged stones. Discoidals are round to ovoid ground stones with flat or slightly convex faces and edges, while cogged stones are discoidals with serrated edges resembling the teeth on gears. Both types of artifacts appear sometime around 4000

BC, and are dated to the Milling Stone Period; their use remains unclear, and they may have had a ceremonial function (Moratto 1984:149–150).

Wallace (1978:28) offers two possible scenarios to explain the cultural changes that occurred during the Milling Stone Period: quite possibly, both processes occurred simultaneously in different geographical areas. In some regions (such as western San Diego County), Milling Stone cultures may have evolved gradually as the earlier hunting peoples learned to exploit a wider variety of food resources; in other areas, people migrating from interior regions may have introduced to coastal areas the technology for processing seeds and plant foods. Evidence for such migrations may be found in climatic data. The onset of the Milling Stone Period corresponds to an interval of warm, dry weather known as the Altithermal; during the Altithermal, many of the inland lakes disappeared, and the region became less habitable, perhaps triggering the coastal migrations believed to have occurred at this time (Wallace 1978:28).

The Intermediate Period (3000 BC–AD 500)

By approximately 3000 BC, the inhabitants of Southern California were exploiting a diverse array of food resources including seeds and edible plants, shellfish, fish, and mammals. Along the coast, a greater reliance was placed on marine food resources as evidenced by the recovery of near-shore and pelagic (deep-water) fish remains from archaeological sites. In the interior regions such as the Mojave Desert, the return of cooler, moister conditions led to increased populations along streams and lakes. Hunting appears to have been the primary food gathering activity in these interior areas; the best-known sites in this region are located at Pinto Basin in northeastern Riverside County (Moratto 1984:153; Wallace 1978:30–31).

Intermediate Period sites are characterized by the appearance of the mortar and pestle (although the mano and metate continued in use) and small projectile points. The use of the mortar and pestle may indicate an increased reliance on acorns as a food source, while the small projectile points suggest that the bow and arrow was in limited use (Elsasser 1978:55; Wallace 1978:30–31). The circular shell fishhook also makes its appearance in coastal sites during this period; the circular fishhook is found most abundantly in areas adjacent to a rocky coastline and may have been less subject to fouling than gorges and other types of hooks (Strudwick 1986:283–284). Intermediate Period burials were generally by interment in a flexed position, face down, although a site at Big Tujunga Wash in the San Fernando Valley contained both reburials under stone cairns and cremations (Elsasser 1978:55; Wallace 1955:193–195).

Researchers have had difficulty distinguishing Intermediate Period sites, since many of the tool types appear in earlier and later periods; the few known sites have often been identified using radiocarbon or obsidian hydration methods.

The Late Period (AD 500–1769)

The Late Period, which began in approximately AD 500, witnessed a number of important cultural developments in Southern California, including the concentration of larger populations in settlements and communities, greater utilization of the available food resources, and the development of regional subcultures. Cremation was the preferred method of burial during the Late Period, and elaborate

mortuary customs with abundant grave goods were common. Other cultural traits diagnostic of the Late Period include increased use of the bow and arrow, steatite containers, circular shell fishhooks, asphaltum (as an adhesive), bone tools and personal ornaments of bone, shell and stone (Bean and Smith 1978; Elsasser 1978:56; Moratto 1984:159; Wallace 1955:195). Because many of these artifacts are also recovered from earlier periods, other indicators must sometimes be used to distinguish Late Period sites. Among the most useful of these indicators are lithic artifacts manufactured from obsidian and fused shale. Obsidian from Obsidian Buttes near the Salton Sea was used sporadically in the manufacture of lithic artifacts until sometime after AD 1000; in Orange County, Grimes Canyon fused shale obtained from Ventura County was also used in tool manufacture (Demcak 1981; Hall 1988).

A number of the cultural elements found in Southern California during the Late Period have been linked to the migration of Uto-Aztecan speaking peoples from the Great Basin; these traits include the manufacture of ceramics, the use of small triangular arrow points, and interment by cremation. The date of the Uto-Aztecan migration (which probably occurred in several successive waves over an extended period of time) remains uncertain; it has been dated as early as 2000 BC and as late as AD 700. Linguistic evidence suggests a date of AD 1 to 500 (Koerper 1979; Kroeber 1925:574–580; Moratto 1984:161). The Los Angeles-Orange county region was home to one Uto-Aztecan speaking group known as the Gabrielino, the name derived from the incorporation of these Indian peoples into Mission San Gabriel. The current project is located within the traditional territory of the Gabrielino.

ETHNOGRAPHY

The Gabrielino Indians

The Gabrielino practiced a hunter-gatherer lifestyle and lived in permanent communities located near the intersection of two or more environmental zones (habitats); commonly chosen sites included: rivers, streams and inland watercourses; sheltered coastal bays and estuaries; and the transition zone marking the interface between prairies and foothills. The most important factors in choosing a community site were the presence of a stable food supply and some measure of protection from flooding. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. Gabrielino communities located in the interior regions maintained permanent geographical territories or usage areas that may have averaged 30 square miles; however, it is unclear whether this pattern also held for the coastal settlements, where food resources may have been more plentiful (White 1963:117; Oxendine 1983:44). In addition to these permanent settlements, the Gabrielino occupied temporary campsites that were used on a seasonal basis for hunting, fishing, and gathering wild plant foods and shellfish (McCawley 1996:25).

Three distinctive settlement-subsistence patterns have been identified for the Gabrielino communities. The first pattern was found in the interior mountains, where primary settlements were located in the lower reaches of canyons that offered protection against cold weather during the winter. During spring and summer, individual families traveled to seasonal camps to gather bulbs, seeds, and plant foods; in the fall they moved to oak groves to gather acorns. A second pattern prevailed on the inland prairies; each winter, the populations of these communities divided into family units and migrated to coastal shellfish-gathering camps. The third settlement and subsistence pattern was found among the coastal settlements located in the region north of San Pedro; during the winter season (when the seas

were too rough for fishing), the inhabitants of these communities dispersed to inland camps to hunt and gather acorns and plant foods (Hudson 1971).

Politically, each Gabrielino community comprised one or more kinship groups (known as lineages), which were united under the leadership of a *tomyaar,* or chief. Each lineage comprised several related nuclear families; membership in a lineage was traced through the father, and allowed an individual to claim use rights over the territory owned by that group. The *tomyaar* was the focus of the religious and secular life of the community and served as chief administrator, fiscal officer, war leader, legal arbitrator and religious leader (Bean and Smith 1978; Harrington 1942:32, item 1263; 1986:R102 F642). The *tomyaar* was aided in his duties by a Council of Elders, which consisted of the leaders of the lineages residing in the community as well as other wealthy and influential individuals. Council positions were hereditary, and descended from father to son. Shamans also played an important role in Gabrielino society, serving as the principal doctors, psychotherapists, philosophers and intellectuals; often, the *tomyaar* himself was an important and influential shaman (Bean 1974:25–26).

The Gabrielino culture was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies, and participation in the widespread *Chengiichngech* cult. The cult of the culture hero, *Chengiichngech*, was observed and recorded by Franciscan Friar Gerónimo Boscana during his residences at Missions San Juan Capistrano and San Luis Rey (Harrington 1933; Boscana 1933).

The Franciscans' goal was to convert the Indians to Christianity and incorporate them into Spanish society. The Gabrielino and other Indian groups learned metallurgy, plant and animal domestication, and Spanish building construction methods. In turn, the Spanish learned how and where indigenous peoples lived, and gathered information about native life ways as well as ceremonial and ritual practices. Occasionally this information was recorded. Father Gerónimo Boscana prepared an account of Gabrielino and neighboring Juaneño life ways and beliefs (Harrington 1933; Hanna 1978). Boscana's account, *Chinigchinich*, was written during his residency at both San Juan Capistrano (1814–1826) and San Luis Rey (1811–1814) missions, and describes the native cosmology and ritual practiced at the time of Spanish contact (Bean and Smith 1978:548). By the early 1800s, Spanish army officers and veterans living in California began receiving grants of land and establishing large, private grazing areas.

Ultimately, Spanish colonization resulted in the disappearance of Gabrielino society and culture. Two important factors that contributed to this decline included the removal of the youngest, healthiest, and most productive Gabrielino from their traditional communities and their incorporation into the Mission System; and the contamination of the native population with highly infectious diseases to which they were not adapted. This led to epidemics and reduced birth rates. As a result, the traditional Gabrielino communities were depopulated and the survivors integrated into local *Californio* and, later, Mexican-American communities. When anthropologist A. L. Kroeber sought Gabrielino descendants during the 1920s, he was unable to locate a group claiming Gabrielino heritage. Today, the federal government does not recognize a local tribe or band, although there are individual spokespeople who have Gabrielino ancestors (Rosenthal et al. 1991).

HISTORY

Spanish Mission Period (1769–1821)

The first recorded contact between the Gabrielino and Europeans occurred in 1542 when the Juan Rodriguez Cabrillo Expedition arrived at Santa Catalina Island (Wagner 1941). In the Orange County area, the first recorded contact occurred when Gaspar de Portolá's expedition crossed the region in July 1769. According to Spanish records, Portolá camped near the mouth of Brea Canyon approximately two miles west of the project area. A large village of Indians was encountered. The name of the village was not recorded. The period between 1769 and 1821, when Mexico gained independence from Spain (McGroarty 1911:117, 148; Avina 1932:29; Robinson 1979:13), is often referred to as the Spanish Mission Period (Robinson 1979:51–52). In 1771, Father Junipero Serra established a Franciscan mission at San Gabriel.

In 1819, an *asistencia* was established in San Bernardino, and those inhabitants not directly affected by Mission San Gabriel became a part of the Mission system through the San Bernardino *Asistencia*. Spanish records indicate that the primary Native American villages included within this *Asistencia* were *Guachama*, located near the present town of Loma Linda, and *Hurungna*, known as *Jurupa* to the Spanish, located near the present city of Riverside (URS 1988:VIII:79). Farming and cattle ranching were introduced to the inhabitants of *Guachama* by the padres of the San Bernardino *Asistencia* as early as 1819 (Hoover et al. 1962:39).

Mexican Period (1821–1848)

In 1821, Mexico was formed after gaining its independence from Spain, and in 1848 the United States formally obtained California in the Treaty of Guadalupe Hidalgo (Cleland 1962:xiii). The period from 1821 to 1848 is here referred to as the Mexican Period.

In 1833, 11 years after gaining independence from Spain, the Mexican government=s Secularization Act changed missions into civil parishes, and those natives who had inhabited regions adjacent to a Spanish Period mission were to obtain half of all mission possessions, including land. However, this did not occur in most instances, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals rather than to local natives.

American Period (Post-1848)

Following the end of hostilities between Don Pio Pico, the last Mexican Governor of California, and the United States in January of 1847, the United States officially obtained California from Mexico through the Treaty of Guadalupe Hidalgo on February 2, 1848 (Cleland 1962:xiii). Thus, the American Period begins in 1848. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849.

The cattle industry in California reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large, pastoral estates in California, and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849 to 1855. In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri valleys, and the development of stock

breeding farms. When the beef market collapsed, California ranchers were unprepared. Many had borrowed heavily during the boom, mortgaging their land at interest rates as high as ten percent per month. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes (Cleland 1941:108–114).

Nature, too, conspired to force economic change. During the winter of 1861–1862, a disastrous series of floods struck California. According to rainfall statistics, more than 45 inches of rain fell in parts of California between November 1861, and February 1862 (Brewer 1930:253). It has been estimated that the 1862 flood was the largest flood in the recorded history of the Santa Ana River. At Agua Mansa, the high water line marked on the front steps of the church was used to estimate a flow rate of 320,000 cubic feet per second, more than three times the estimated high water maximum recorded in 1938 (Sidler 1973:19 in URS 1988:VIII–81). Lesser flooding episodes along the Santa Ana River also occurred in 1867 and 1891. This unprecedented deluge was then followed by two years of drought (Cleland 1941:130–131). The drought of the 1860s was a turning point in the economic history of Southern California. The era of the great cattle ranchos ended and many of the landowners who survived the collapse of the cattle industry were forced to sell their property due to the drought. This was not the fate of all rancheros; some, such as the Cota and Yorba families, survived (Foster 1996).

Local History

Brea was established in 1894 when landowner Abel Stearns sold 1,200 acres to the Union Oil Company, west of the village of Olinda (founded circa 1896). In 1908, a new town called Randolph was constructed for the oil workers. In 1911, the name was changed to Brea (Spanish for tar). The town of Olinda has since disappeared and is now the location of a park.

METHODS

RECORDS SEARCH

On February 11, 2004, LSA conducted a records search through the South Central Coastal Information Center of the Historical Resource Information System at California State University, Fullerton. Documents and literature regarding known cultural resources and previous archaeological studies within one mile of the project area were reviewed. This included an examination of the National Register of Historic Places; the California Register of Historic Resources; Office of Historic Preservation; Archaeological Determinations of Eligibility and Directory of Properties in the Historic Property Data File; and historic maps.

FIELD METHODS

On February 13, 2004, the project area was surveyed by LSA archaeologist Roderic McLean. The purpose of the survey was to identify any cultural resources present within the project area. Steep slopes and recent terracing characterize the project area. At minimum, 30 percent of the project area is disturbed. Ground visibility within the project area was dependent on vegetation density. Areas where native soils were exposed were scrutinized carefully, as were rodent burrows and their associated back dirt piles. Soil profiles were examined for evidence of cultural stratigraphy.

RESULTS

RECORDS SEARCH

The results of the records search indicate that no archaeological surveys have been conducted within the project area. The original landfill area was surveyed by the Archaeological Planning Collaborative (1979). A second survey was performed east of the project area (Brown et al. 1990). A historic site, CA-ORA-1291H, is recorded approximately one-quarter mile east of the project area. The site is described on the site record as a historic rock retaining wall along with a trash pit. Pieces of a wood stove and amethyst glass were observed. Additionally, 11 prehistoric sites are recorded within 1 mile of the project area. All are located at the base of the mountain to the south and southwest.

FIELD SURVEY

No cultural resources were identified within the project area. At minimum, 30 percent of the project area is disturbed. Additionally, the project area involves a very steep landform. Other than rock shelters, rock art, and rock mines, steep landforms are considered to have a very low sensitivity for cultural resources. The project area is devoid of rock outcrops that would be used for prehistoric activities, and no mining has taken place.

DISCUSSION

Human activity often leaves behind evidence of its existence in the form of buried deposits (archaeological sites). In addition, evidence of human activity can be preserved by elements of the built environment. In other words, buildings, structures, parking lots, and other man-made features may cap buried cultural deposits. Broadly, this evidence can be characterized as being either prehistoric or historic. Historic resources are considered to be those deposited or constructed after European contact in an area. In Southern California, this contact is typically considered to be in 1769 when the Portolá expedition crossed Orange County. Historic resources can be either part of the built environment (standing buildings, structures, or objects), or can be buried, with little surface expression. These buried historic resources, along with prehistoric archaeological sites, are typically called archaeological resources. All of these resource types (prehistoric and historic archaeological deposits and the historic built environment) are called cultural resources. Prehistoric archaeological sites can exist in many disparate and seemingly odd locations. These deposits can be as varied as village sites; temporary camps; isolated activity areas such as mining, food processing, or resource gathering; or even isolated artifacts such as a solitary projectile point that may have been lost as someone traveled from one place to another.

There are many factors that influence the location of prehistoric cultural resources including proximity to water and useful resources (e.g., oak trees that provided edible acorns), hunting areas, coastal resources areas, and sources of other natural resources. Another important factor in the location of prehistoric sites is the land form that was contemporary with the site. Level areas atop hills, ridges, and knolls were usually preferred over steep topography such as mountains or hillsides. Often, sites were chosen simply because of the view they afforded.

Probably the single most important factor influencing the location of sites is proximity to potable water. Long-term habitation sites such as villages, as well as smaller temporary camps, were often located along watercourses or near springs. The location of a dependable spring almost always marks the location of some type of archaeological deposit. Stable, level areas in proximity to both marine resources and fresh water are zones of even greater preference. When several of these factors are found in association, the likelihood that a site will be found increases dramatically.

Camp sites, or more permanent habitation sites such as villages and towns, are often situated on level to semilevel ground near water. Often, archeologists focus their research on level areas near fresh water given the high potential for cultural resources. Habitation sites often exhibit important information regarding subsistence strategies, changes in diet and technology over time, and social organization. The presence of important information may indicate that the cultural resource is significant under federal and state laws. Cemeteries are also often associated with habitation sites.

While proximity to fresh water is still paramount, habitation areas are not limited to relatively level land forms. Based on the type of resource being exploited at a location, habitation can occur on gentle sloping land forms, atop mesas, and atop mountains. Valley bottoms with perennial drainages are common locations for habitation sites. Valleys also receive alluvial and colluvial deposition, increasing the likelihood that archaeological resources will be preserved, if present. Even without a surface expression, the potential for buried resources exists in these types of areas where active depositional processes can bury the archaeological site.

Steep sloping land forms, narrow ridges, and hilltops are often considered to have a low potential for containing cultural resources. Habitation will not normally be found in these locations, but other types of cultural resources can be found in these areas. Ridgelines may have been actively used as movement corridors and may retain evidence of this use. Rock outcrops may exhibit rock art, and rock shelters and caves may contain prehistoric deposits or rock art. Quarry activities, both prehistoric and historic, are found in hilly, mountainous land forms. Prehistoric people utilized stone tools, and the raw materials are often located in mountainous areas. Historic mining activities, as well as logging camps, are also found in these settings.

In order to characterize the likelihood of discovering a cultural resource in a specific area, the following three-tiered classification system will be used:

- HIGH POTENTIAL (SENSITIVITY): Level/semilevel land forms near potable water
- MODERATE: Water and other resources available within 0.5–2.0 miles
- LOW: Water unavailable/steep, rugged slopes

RECOMMENDATIONS

The proposed project is located on a steep anticline that is considered to have a low potential for cultural resources. Monitoring of ground disturbing activities by a qualified archeologist is not recommended due to the previous disturbance of the area and its steepness.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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APPENDIX J
PALEONTOLOGICAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

PALEONTOLOGICAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

ORANGE COUNTY, CALIFORNIA

LSA

February 27, 2004

PALEONTOLOGICAL RESOURCE ASSESSMENT FOR THE OLINDA ALPHA LANDFILL EXPANSION

ORANGE COUNTY, CALIFORNIA

Submitted to:

County of Orange
Resources and Development Management Department
300 North Flower Street
Santa Ana, California 92702-4048

Prepared by:

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LSA Project No. PND830

Data Base Information:

Type of Study: Records Search, Survey
Sites Recorded: None
USGS Quadrangle: *Yorba Linda 7.5*N
Survey Area: 33 Acres
Key Words: Negative survey report, Soquel member of the Puente Formation

LSA

February 27, 2004

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FIGURES

ABSTRACT

LSA Associates, Inc. (LSA) completed a paleontological assessment of the Olinda Alpha Landfill in Orange County, California, for a proposed expansion of the landfill footprints. This work is part of the Regional Landfill Options for Orange County (RELOOC) Strategic Plan, initiated by the County of Orange Integrated Waste Management Department (IWMD). The purpose of the assessment is to determine whether paleontological resources are present within the project area, and if so, to assess their importance and to recommend mitigation measures to reduce potential impacts to levels that are less than significant, as required by the California Environmental Quality Act (CEQA) Section 15064.5. Work was also conducted in compliance County of Orange Standard Conditions of Approval (SCA) ' A7 and in accordance with paleontological mitigation guidelines developed by the Society of Vertebrate Paleontology (SVP 1995). A locality search and field survey were conducted for the project area in February 2004.

No paleontological material was observed during the field survey. The project area is located on a steep slope that exhibits several large disturbed (terraced) areas. Review of geologic maps shows that sediments from the Miocene Puente Formation underlie the project area. Fossils have been recovered from the Puente Formation immediately adjacent to an expansion area in the existing landfill and from other Puente Formation outcrops in Orange County and surrounding counties. The potential exists to encounter fossils whenever these sediments are encountered. Therefore, LSA recommends that a Paleontological Resources Impact Mitigation Program (PRIMP) be implemented and followed. The PRIMP shall include, but not be limited to, the following: paleontological monitoring; preparation of any collected specimens to the point of identification; curation of specimens to a museum or similar institution; and preparation of a mitigation report documenting any findings.

INTRODUCTION

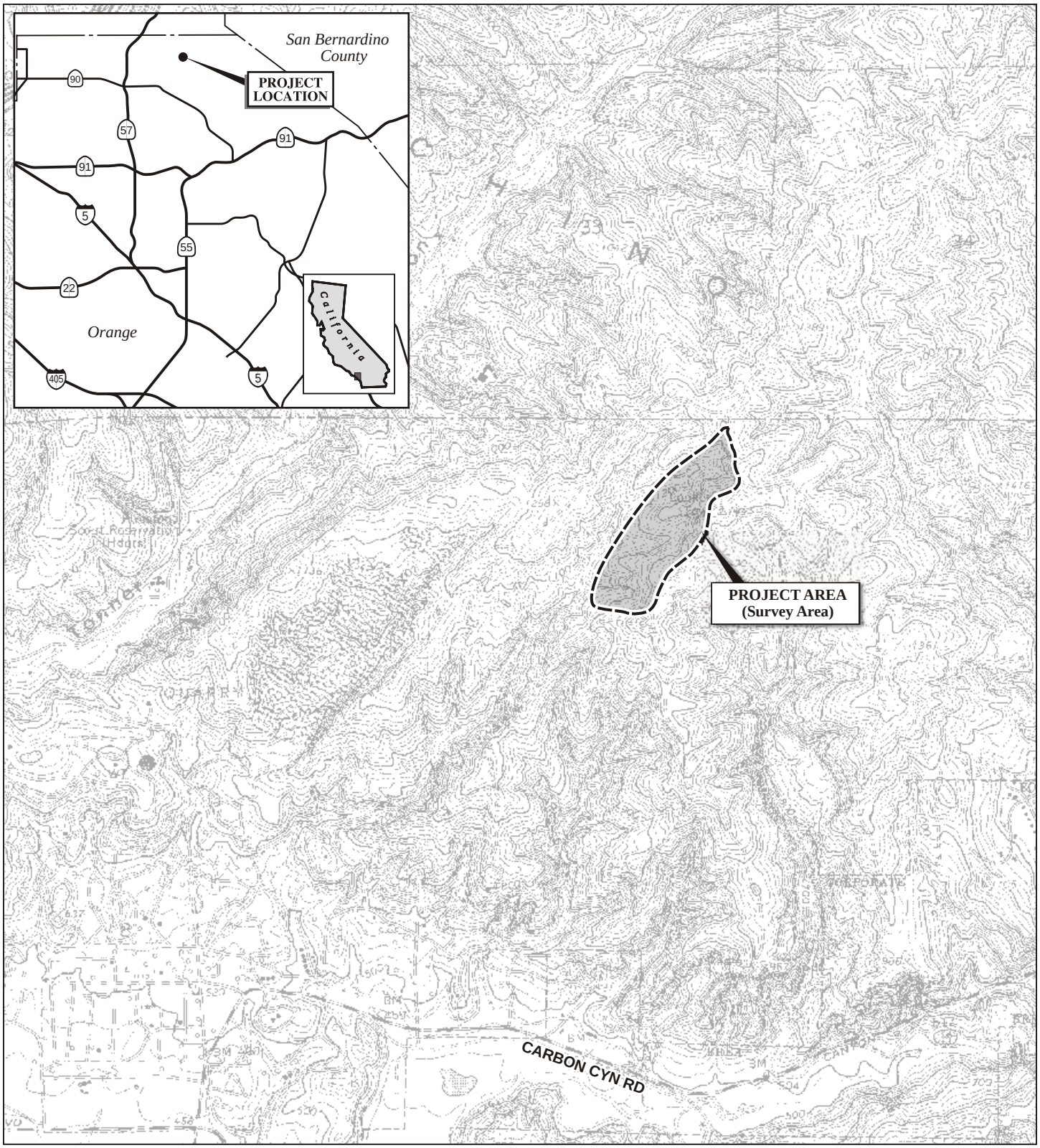
LSA has been contracted by P&D Consultants to conduct a paleontological assessment of an area east of the Olinda Alpha Landfill in Orange County, California. The purpose of the study is to determine whether paleontological resources are present, and if so, to assess their importance and to recommend mitigation measures to reduce potential impacts to levels that are less than significant, as required by CEQA Section 15064.5. CEQA Section 15064.5 states that a project may have a significant effect on the environment if the project may cause substantial adverse change to a historic, archaeological, or paleontological resource. An impact to paleontological resources is considered significant if it can be reasonably argued that the project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature..

As part of RELOOC initiated by IWMD, the County is proposing short-term improvements to the existing Olinda Alpha Landfill, including vertical and horizontal expansion. The current landfill covers 565 acres, with 420 acres permitted for refuse disposal. The height of the landfill will be increased from its current permitted level of 1,300 feet above mean sea level (AMSL) to 1,415 feet AMSL, or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill.

The proposed project is within the boundary of the Olinda Alpha Landfill located at 1942 North Valencia Avenue in unincorporated Orange County adjacent to and within the sphere of influence of the City of Brea. The Olinda Alpha Landfill is generally bounded by Lambert Road to the south and Valencia Avenue to the southwest. Specifically, the expansion area is located within an unsectioned portion of Township 3 South, Range 9 West, as found on the *Yorba Linda* 7.5N topographic quadrangle (Figure 1).

The field survey was conducted on February 13, 2004, by LSA archeologist Roderic McLean. Brooks Smith prepared the report under the supervision of County Certified Paleontologist Steven W. Conkling.

All work was completed in compliance with SCA 'A7 and in accordance with paleontological mitigation guidelines developed by the SVP (SVP 1995). Please note that this report serves only as documentation of the paleontological findings for the project area and in no way represents a geological assessment. Therefore, this report should not be used as such.



LSA

FIGURE 1

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FEET

SOURCE: USGS 7.5' QUAD - YORBA LINDA, CA

Relooc Strategic Plan

Project Location

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METHODS

LOCALITY SEARCH

A paleontological locality search was conducted through the Orange County paleontological records maintained at LSA. It included a review of the area geology and any known paleontological resources recovered from the surrounding area and the geologic formations that will likely be encountered during excavation activities.

The purpose of the locality search was to establish the status and extent of previously recorded paleontological resources within and adjacent to the project area. With this knowledge, LSA could make an informed assessment of the potential effects of the proposed project on paleontological resources and evaluate the kinds of fossils that might be uncovered during ground-disturbing activities.

FIELD METHODS

The survey consisted of a visual inspection of exposed soil, ground surface, and bedrock outcrops. Where possible, the surveyor walked the project area in transects spaced approximately five meters apart. Surface scrapes were conducted to better expose obscured areas. If any resources were located in situ, the surveyor was prepared to assess the find for significance and, if necessary, document them. If the find was deemed to be significant, the surveyor was instructed to note its location with a Garmin Global Positioning System (GPS) unit. The use of GPS units allows localities to be quickly and accurately plotted on a standard 7.5N topographical map. The surveyor was also instructed to fill out a Fossil Locality Sheet that contains important information such as field number of the locality; tentative identification of the find description of the sediments; formation name; location of the find within the project; GPS information; and elevation.

The purpose of this survey was to identify any paleontological resources that may be impacted by the proposed project. In this way LSA could document and collect paleontological remains prior to the beginning of ground disturbing activities and locate areas within the project that might contain abundant remains.

RESULTS

LOCALITY SEARCH

The results of the locality search indicate that the proposed landfill expansion area is located at the northern end of the Peninsular Range geomorphic province, a 900-mile (1,450 km) northwest-southeast trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin (Norris and Webb 1976). The total width of the province is approximately 225 miles (362 km), with a maximum landbound width of 65 miles (105 km) (Sharp 1976). It contains extensive pre-Cretaceous (> 65 million years ago) igneous and metamorphic rock covered by limited exposures of post-Cretaceous sedimentary deposits. Within Orange County, these post-Cretaceous sedimentary deposits are believed to be one of the most important Tertiary marine fossil producing areas in the world due to the completeness of the geologic record and general abundance of the fossils (Raschke 1984). Belyea and Minch (1989) report that the Santa Ana Mountains contain exposures of the most complete section of Late Mesozoic and Cenozoic (approximately 150 million years ago to the present) stratigraphy in the entire Peninsular Ranges.

Specifically, the project is located in the Puente Hills. These hills are located in the eastern Los Angeles Basin and in parts of San Bernardino, Riverside, Los Angeles, and Orange Counties. The hills are bounded on the northwest by the San Gabriel Valley, on the northeast by the San Bernardino Valley, and on the south by the Santa Ana River and the central portion of the Los Angeles plain. They are structurally and stratigraphically related to the Santa Ana Mountains to the south and the San Jose Hills to the northwest (Schoellhamer et al. 1981). The southeastern portion of the Puente Hills, south of Brea Canyon, is also known as the Chino Hills. The Chino Hills are a structural unit that had been uplifted and folded by movement along both the Whittier and the Chino Faults. This expansion project is located on the southern flank of the Chino Hills (Durham and Yerkes 1964; Rogers 1966) approximately one mile north of the Whittier Fault.

Within the project area, Morton and Miller (1981) and Morton et al. (1999) recorded one geologic unit, the late Miocene Soquel member of the Puente Formation. The late Miocene marine Puente Formation is divided into four members: the La Vida Member (Tplv), which consists of predominantly siltstones; the Soquel Member (Tps), which consists of predominantly sandstones; the Yorba Member (Tpy), which consists of predominantly siltstones; and the Sycamore Canyon Member (Tpsc), which consists of predominantly sandstones.

The Puente Formation is exposed in the Santa Ana Mountains and the Puente Hills and was deposited in a deep-water basin (Lyons et al. 1990). It ranges in thickness from 575 meters in the central Santa Ana Mountains near El Toro to over 4,100 meters in the Puente Hills (Yerkes et al. 1965, Schoellhamer et al. 1981). The Puente Formation was named by Eldridge and Arnold (1907) from exposures in the Puente Hills. Davies and Woodford (1949) divided the Puente Formation into three members, only one of which was named. Schoellhamer and others assigned the current four members and their names in 1954. The siltstone units of the Puente Formation generally produce more fossils than the sandstone units, with the Yorba member producing the most fossils of the four. However, the only member exposed within the project is the Soquel member.

The Soquel member of the Puente Formation consists of Late Miocene marine sediments. They are composed of pale yellow to yellow brown silty sandstone and pebbly sandstone with interbeds of light to dark gray and pale yellow brown siltstone and occasional conglomerate and breccia. Sand grains are subangular to subrounded quartzo-feldspathic and biotite rich. The conglomerate clasts are angular to subangular and are mainly derived from a plutonic source. Sandstones are massive to thickly bedded, while siltstones are thinly bedded to platy. Dolomatic concretions occur near the base.

Within the Puente Hills, the thickness of the Soquel member ranges from 2,000 to 2,800 feet. It has a gradational, and locally unconformable, contact with the underlying La Vida member and a gradational contact with the overlying Yorba member. It correlates with part of the Monterey Formation in Southern Orange County and part of the Modelo Formation in Los Angeles County. Lyons et al (1990) has interpreted the Soquel member in the Puente Hills to represent a series of coalescing depositional lobes deposited at the base of the continental slope. Sediments were derived from prograding fan deltas on the narrow continental shelf and transported to the base of the continental slope by gullies cut into the continental slope. Fossils are rare, but late Miocene forams and fossil fish have been found. During paleontological monitoring of the existing Olinda Alpha landfill in 1998, RMW Paleo Associates collected what they identified as the first Argonauts from Orange County.

FIELD SURVEY

On February 13, 2004, the project area was surveyed by LSA archaeologist Roderic McLean. Steep slopes and recent terracing characterize the project area. At a minimum, 30 percent of the project area is disturbed. Ground visibility within the project area was dependent on vegetation density. Areas where native soils were exposed were scrutinized carefully, as were rodent burrows and their associated back dirt piles. Bedrock outcrops were also examined for evidence of paleontological remains.

No paleontological resources were identified within the project area during the field survey. At a minimum, 30 percent of the project area is disturbed and/or obscured by vegetation. Additionally, the project area involves a very steep landform that limited access to many places within the project area. The potential still exists for paleontological remains to occur within the project area in areas that could not be accessed, or that are still buried beneath the ground surface.

DISCUSSION

Planners and paleontologists have worked together to help preserve Orange County's long fossil heritage. In response to CEQA, a system is used to determine the potential for the occurrence of fossils during the initial scoping phase of each project. When an earthmoving project begins, a standard Paleontological Resource Impact Mitigation Program (PRIMP) can be followed that will reduce the impacts to the fossils to a less than significant level.

During the initial scoping phase, a paleontologist can be retained to complete an assessment report to determine a level of sensitivity for the project. These sensitivity ratings are either High, Low, or Undetermined.

LOW POTENTIAL

Following a literature search, records check, and field survey, areas may be determined by a qualified vertebrate paleontologist as having Low potential for containing significant paleontological resources subject to adverse impacts. Low potential can not be determined simply by looking for rock unit qualifications on a geologic map. For instance, an area mapped as Alluvium may actually be a thin surficial layer of nonfossiliferous sediments that cover fossil-rich Pleistocene sediments. Also, an area mapped as granite may be covered by a Pleistocene soil horizon that contains fossils. The actual sensitivity must be determined by both a records search and a field inspection.

HIGH POTENTIAL

Sedimentary rock units with High potential for containing significant nonrenewable paleontological resources are rock units within which vertebrate or significant invertebrate fossils have been determined to be present or likely to be present. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. High sensitivity includes not only the potential for yielding abundant vertebrate fossils but also for production of a few significant fossils that may provide new and significant data (taxonomic, phylogenetic, ecologic, and/or stratigraphic data).

High sensitivity (High A) is based on geologic formations or mappable rock units that are rocks that contain fossilized body elements and trace fossils such as tracks, nests, and eggs.

High sensitivity (High B) is a sensitivity equivalent to High A but is based on the occurrence of fossils at a specified depth below the surface. High B indicates that fossils are likely to be encountered at depth and may be impacted during excavation by construction activities. A standard condition is attached to the environmental planning document for the project, specifying that during grading stage review, a PRIMP is a condition for any excavation that reaches or exceeds a specified depth.

UNDETERMINED POTENTIAL

Areas underlain by sedimentary rocks for which literature and unpublished studies are not available have undetermined potential for containing significant paleontological resources. These areas must be inspected by a field survey conducted by a qualified vertebrate paleontologist. A specific determination of High potential or Low potential for containing significant nonrenewable paleontological resources can then be made.

RECOMMENDATIONS

Although no paleontological resources were identified during the field survey, based on the results of the locality search, sensitive paleontological sediments that can contain fossil remains exist within the project area. Therefore, there is the potential to encounter paleontological resources during ground-disturbing activities. The sediments of the Puente Formation have a sensitivity of High for containing paleontological resources. In order to mitigate potential adverse impacts to nonrenewable paleontological resources, as required by CEQA Section 1564.5, LSA recommends that a paleontologist be retained and that a PRIMP be followed for the project. The PRIMP should be consistent with the guidelines of the SVP (SVP 1995) and should include, but not be limited to, the following:

- Attendance at the pregrade conference.
- Monitoring of excavation activities by a qualified paleontological monitor in areas identified as likely to contain paleontological resources. The monitor should be equipped to salvage fossils and/or matrix samples as they are unearthed in order to avoid construction delays. The monitor must be empowered to temporarily halt or divert equipment in the area of the find in order to allow removal of abundant or large specimens.
- Because the underlying sediments may contain abundant fossil remains that can only be recovered by a screening and picking matrix, it is recommended that these sediments occasionally be spot screened through one-eighth to one-twentieth-inch mesh screens to determine if microfossils exist. If microfossils are encountered, additional sediment samples (up to 6,000 pounds) shall be collected and processed through one-twentieth-inch mesh screens to recover additional fossils.
- Preparation of recovered specimens to a point of identification and permanent preservation. This includes the washing and picking of mass samples to recover small invertebrate and vertebrate fossils and the removal of surplus sediment from around larger specimens to reduce the volume of storage for the repository and the storage cost for the developer.
- Identification and curation of specimens into a museum repository with permanent retrievable storage.
- Preparation of a report of findings with an appended itemized inventory of specimens. When submitted to the Lead Agency, the report and inventory would signify completion of the program to mitigate impacts to paleontological resources.

By following the above guidelines, impacts to nonrenewable paleontological resources will be reduced to a level that is less than significant, as required by CEQA.

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APPENDIX K
HYDROLOGY STUDY OLINDA ALPHA LANDFILL
RELOOC 1415 MAXIMUM ELEVATION

HYDROLOGY STUDY
OLINDA ALPHA LANDFILL
RELOOC 1415 MAXIMUM ELEVATION

Orange County, California

April 2004

Prepared For:

County of Orange
Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Prepared By:

BRYAN A. STIRRAT & ASSOCIATES, INC.
1360 Valley Vista Drive
Diamond Bar, California 91765
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HYDROLOGY REPORT

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1.0 SURFACE HYDROLOGY & SOIL LOSS ANALYSIS

1.1 WATERSHED LOCATION AND HISTORIC OVERVIEW

According to the Watershed and Coastal Resources Division of the Public Facilities and Resources Department of Orange County the Olinda Alpha Landfill (OAL) is located in the Northeast portion of the Coyote Creek Watershed that drains to the San Gabriel River and then to the Pacific Ocean.

The OAL was originally two separately permitted landfills, Olinda Landfill (OL) and Olinda Alpha Landfill (*OAL*) and geologically separated by a ridge between two canyons. In the revised "Olinda / Olinda Alpha Landfill Vertical Expansion Project, Master Storm Drain Design" (MSDD) (Bryan A. Stirrat and Associates, April 11, 1994)) the calculated runoff for the landfill was divided into two main tributaries. The pre-landfill hydrology for the westerly portion of the OAL (or the OL) was 216 acres and had a 100-year peak discharge of 463 CFS. The easterly portion of the OAL (*OAL*) was 336 acres with a 100-year peak discharge of 681 CFS. The currently-permitted developed condition for the OAL has a top deck maximum vertical elevation of 1300 feet above mean sea level (MSL) and it is being proposed to expand the current vertical elevation to 1415 feet MSL. Currently, the OAL has two detention/desilting basins. These basins were designed to receive developed condition peak flows, but will release flows to pre-developed condition. The layout of the MSDD would conform to this design criteria and discharge flow according to its original design intent. By designing the grading to its original design intent, no modification is necessary to the existing basins.

The runoff flow path and tributary areas of the OAL Master Plan are consistent with the existing (pre-developed) conditions. OAL will collect the initial flows from the deck of northerly side of the landfill and then direct the runoff via a network of benches and down drains down the slopes to the perimeter (West and East) channels. Once the runoff has been routed to the perimeter channels it will then be directed in a southerly direction to the detention / desilting basins.

1.2 HYDROLOGY

The Orange County Public Facilities and Resources Department (PFRD), now called the Resources Development and Management Department, Hydrology Manual (1999) and the Advance Engineering Software (AES) computer program Rational Method was used to calculate the 100-year, 24-hour run-off peak for the entire OAL. The AES computer program was designed especially for Orange County and utilizes the latest rainfall data, nomographs, charts and equations for the Rational Method indicated in the manual. AES is also the accepted software used by PFRD which is the agency responsible for the major flood control facilities downstream of the landfill.

The Rational Method (Q=CIA) described in the hydrology manual relates rainfall intensity (I), runoff coefficient (C), and the drainage area (A) to the direct peak runoff (Q) from the drainage area. The values of C & I are based on drainage area characteristics such as land use, soil type, land surface, and the time of concentration. Time of concentration (TC) is defined as the interval of time required for the flow at any point to become maximum under uniform rainfall intensity.

According to the PFRD Hydrology Manual, Orange County has soil types A, B, C, and D. These soil types are categorized from highly-permeable, unsaturated soil type A (least producing runoff) to the least permeable saturated soil type D (highest producing runoff). Although the watershed area of the landfill has soil types A, B, C, and predominantly D, Soil type D was assumed for the entire site to give a more conservative result. In addition, lower soil permeability (lower than Soil Type D) values were used to model the existing waste area (0.05 inches per hour) and the exposed liner area (0.01 inches per hour). The rationale behind using lower permeability values for the waste and liner areas is to model the effects of compaction due to heavy equipment in the waste areas and the low-permeable HDPE membrane in the lined areas.

1.3 HYDRAULICS

Once the peak flows were calculated a unit hydrograph and basin analyses were prepared, using the AES software. The unit hydrograph studies do verify that both basins, A and B, are adequately sized for capacity and to maintain the discharge to the original design intent. Detention Basins A and B were designed for the purpose of limiting the runoff from the OAL to the pre-developed condition and provide desilting for the runoff. The basins will continue to serve that function with the proposed vertical and lateral expansion for the project.

The lower portion of the east channel (approximately 3000 linear feet up from the basin up) is to be reconstructed in the summer of 2004. The reconstructed channel alignment and material have been designed to accommodate a greater flow capacity and allow for differential settlement. As indicated in the design report for the reconstruction of the east channel, the capacity analysis for the channel is 476 CFS. However, the peak runoff for the east tributary is 705 CFS; therefore the balance of the peak runoff will require an alternate conveyance method (i.e. trapezoidal channel along the main access road or series of downdrains from the deck) to direct the remaining runoff prior to reaching final grades.

The proposed final grades will increase the peak flow in the west channel by 30 CFS. The west channel has been analyzed with the additional flow and it has been determined that the west channel has sufficient capacity to convey the increased flow.

At the point of peak confluence, the East Basin will have a peak inflow of 705 CFS which is 62 CFS less than the MSDD peak inflow calculation if 767 CFS for the basin. Although the West Basin (Basin B) will have a peak inflow of 645 CFS which is 30 CFS more than the MSDD peak inflow of 615 CFS to the basin, the West Basin has been analyzed at the critical reaches to verify that the channel will have enough capacity to handle the additional peak flow.

	East Tributary (CFS)		West Tributary (CFS)	
	Inflow	Basin A Discharge	Inflow	Basin B Discharge
Pre-developed	681	NA	463	NA
MSDD	767	618	615	457
Expansion	705	642	645	463

1.4 SOIL LOSS

The Universal Soil Loss Equation (USLE) is the method used to calculate the annual soil loss for the OAL due to erosion. Unlike the hydrology study which assumes an overall gross slope, it is necessary to assume a greater amount of detail with regard to the ultimate design of the slopes in order to calculate the average soil loss for the site using the USLE. The slopes have been assumed to be designed with benches at 40-foot intervals. It will be necessary to place fiber rolls and other erosion control devices in between the benches to reduce soil erosion. This will also reduce the slope length and slope factors (LS) to less than 10. If the LS factor exceeds 10 the potential of exceeding the maximum loss rate of 2 tons of soil per acre per year (standard practice threshold). The calculated soil loss for the site expansion is 1.3 tons per acre per year. The soil loss study and accompanying maps are included in Appendix A.

APPENDIX A

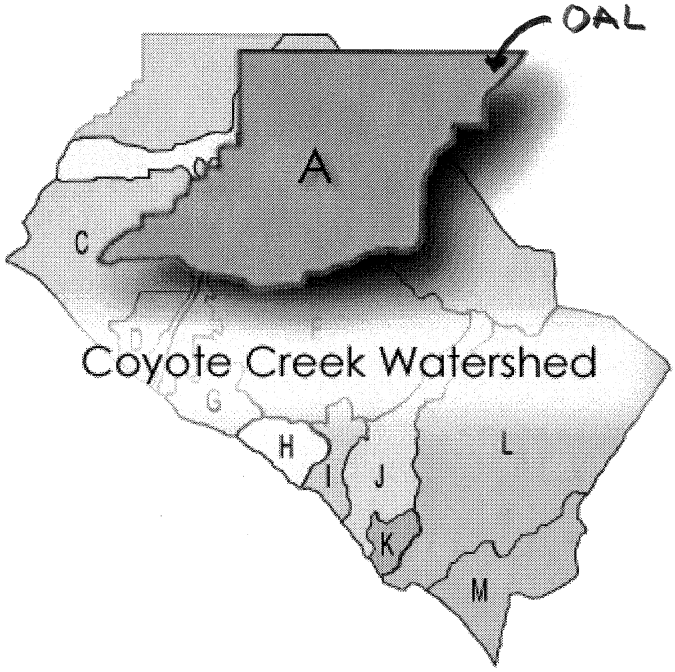
HYDROLOGY STUDY

Watershed Introduction
Supervisorial District Maps
Regional Board Boundary Map
City Boundary Maps
Detailed Maps
Aerial Maps
Wetlands Map
Coastal Maps
Description of Corps of Engineers Process
TMDLs
Resource Links

Select a Watershed: Watersheds & Coastal Resources

Coyote Creek Introduction Page
Meeting Calendar
Drainage & Elevation M
City/County Boundary
Land Use Map
Reports & Studies
Email Contact

Introduction to Coyote Creek Watershed



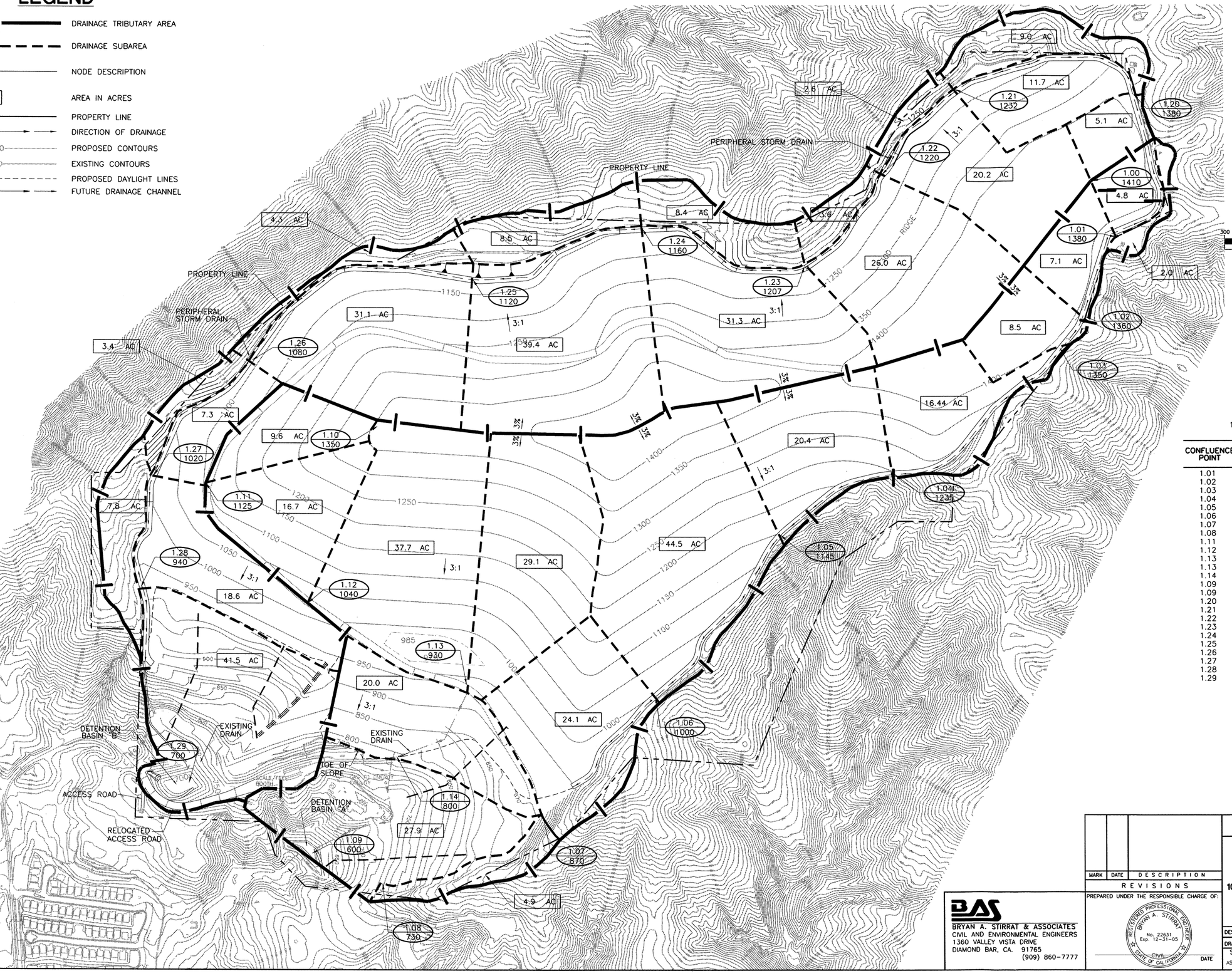
The Coyote Creek Watershed covers 41.3 square miles in the northwest corner of Orange County. It includes portions of the cities of Brea, Buena Park, Fullerton, La Habra, and La Palma. Coyote Creek, its main tributary, flows from Riverside County and empties into the San Gabriel River.

In 2001, the U.S. Army Corps of Engineers initiated a comprehensive watershed study. A Reconnaissance Study was completed in June 2001. Although it is titled the "Westminster Watershed Reconnaissance Study", it covers three Orange County watersheds: Coyote Creek, Carbon Creek, and Westminster. In fall 2002, the Corps of Engineers is scheduled to begin the Feasibility Phase of the watershed study. This phase will cover both the Coyote Creek and Carbon Creek watersheds in one effort.

Back to Top

LEGEND

- DRAINAGE TRIBUTARY AREA
- DRAINAGE SUBAREA
- 1.00 / 725 — NODE DESCRIPTION
- 4.3 AC — AREA IN ACRES
- PROPERTY LINE
- DIRECTION OF DRAINAGE
- 1020 — PROPOSED CONTOURS
- 1020 — EXISTING CONTOURS
- PROPOSED DAYLIGHT LINES
- FUTURE DRAINAGE CHANNEL



N

GRAPHIC SCALE

300 150 0 300 600

(IN FEET)

100 – YEAR RUNOFF SUMMARY TABLE

CONFLUENCE POINT	TOTAL AREA	TOTAL RUNOFF CFS
1.01	6.80	18.09
1.02	13.90	49.41
1.03	22.40	78.45
1.04	38.84	127.63
1.05	59.24	189.14
1.06	103.74	318.96
1.07	127.84	385.87
1.08	132.74	388.59
1.11	9.60	31.18
1.12	26.30	74.24
1.13	64.00	164.16
1.13	93.10	238.80
1.14	113.10	286.42
1.09	113.10	352.72
1.09	273.70	705.31
1.20	5.10	16.71
1.21	25.80	77.17
1.22	48.60	138.80
1.23	74.60	206.41
1.24	114.30	304.20
1.25	162.20	417.47
1.26	197.60	482.86
1.27	208.30	499.18
1.28	234.70	555.75
1.29	276.20	644.83

BASE TOPOGRAPHY DATE
OCTOBER 1, 2003

MARK	DATE	DESCRIPTION
REVISIONS		

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER — BRYAN A. STIRRAT — No. 22631 Exp. 12-31-05 — CIVIL — STATE OF CALIFORNIA

DATE

BAS
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RELOOC

OLINDA ALPHA LANDFILL

100-YEAR DEVELOPED CONDITION HYDROLOGY MAP

DESIGNED C.H.M.			SHEET
DRAWN J.P.J.		CHECKED A.C.R.	1
SCALE	DATE	DRAWING NO.	OF 1
AS-SHOWN	5-2004	24171DB.DWG	

```
**************************************************************************
          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
        (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
      (c) Copyright 1983-2002 Advanced Engineering Software (aes)
          Ver. 8.0  Release Date: 01/01/2002  License ID 1211

                          Analysis prepared by:

                        Bryan A. Stirrat & Associates
                            1360 Valley Vista Dr.
                            Diamond Bar, CA 91765


 ************************* DESCRIPTION OF STUDY *************************
* 100-Year 24-Hour Hydrology Study                                       *
* Olinda Alpha RELOOC 1400 Ultimate Elevation                            *
* CHM                                                                    *
 ************************************************************************

  FILE NAME: OLIN14.DAT
  TIME/DATE OF STUDY: 14:40 05/13/2004
========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  24.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  =====  ====  =====  =======
  1   30.0     20.0     0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      1.01 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   400.00
  ELEVATION DATA: UPSTREAM(FEET) =   1410.00  DOWNSTREAM(FEET) =   1380.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    9.682
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.237
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
```

```
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
NATURAL POOR COVER
"GRASS"                     -        4.80      0.05       1.00     0    9.68
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
SUBAREA RUNOFF(CFS) =     18.09
TOTAL AREA(ACRES) =      4.80   PEAK FLOW RATE(CFS) =     18.09

****************************************************************************
FLOW PROCESS FROM NODE      1.00 TO NODE      1.01 IS CODE =  81
----------------------------------------------------------------------------
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
MAINLINE Tc(MIN) =   9.68
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.254
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
NATURAL POOR COVER
"GRASS"                     D        2.00      0.20       1.00    98
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
SUBAREA AREA(ACRES) =     2.00      SUBAREA RUNOFF(CFS) =     7.30
EFFECTIVE AREA(ACRES) =     6.80    AREA-AVERAGED Fm(INCH/HR) =  0.09
AREA-AVERAGED Fp(INCH/HR) =  0.09   AREA-AVERAGED Ap =  1.00
TOTAL AREA(ACRES) =     6.80        PEAK FLOW RATE(CFS) =      25.46

****************************************************************************
FLOW PROCESS FROM NODE      1.01 TO NODE      1.02 IS CODE =  51
----------------------------------------------------------------------------
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   1380.00  DOWNSTREAM(FEET) =   1360.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   600.00   CHANNEL SLOPE =  0.0333
CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  4.021
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
USER-DEFINED                -        7.10      0.05       1.00     -
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     38.15
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.88
AVERAGE FLOW DEPTH(FEET) =   0.45   TRAVEL TIME(MIN.) =   1.01
Tc(MIN.) =  10.69
SUBAREA AREA(ACRES) =     7.10      SUBAREA RUNOFF(CFS) =   25.38
EFFECTIVE AREA(ACRES) =   13.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
TOTAL AREA(ACRES) =   13.90         PEAK FLOW RATE(CFS) =      49.41

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.52   FLOW VELOCITY(FEET/SEC.) =  10.78
LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.02 =  1000.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.02 TO NODE      1.03 IS CODE =  51
----------------------------------------------------------------------------
```

```
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   1360.00  DOWNSTREAM(FEET) =   1350.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.0400
CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.955
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
USER-DEFINED              -        8.50      0.05       1.00     -
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     64.35
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  12.58
AVERAGE FLOW DEPTH(FEET) =   0.58   TRAVEL TIME(MIN.) =   0.33
Tc(MIN.) =  11.03
SUBAREA AREA(ACRES) =    8.50       SUBAREA RUNOFF(CFS) =   29.87
EFFECTIVE AREA(ACRES) =   22.40     AREA-AVERAGED Fm(INCH/HR) =   0.06
AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
TOTAL AREA(ACRES) =   22.40         PEAK FLOW RATE(CFS) =      78.45

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.65   FLOW VELOCITY(FEET/SEC.) =  13.55
LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.03 =  1250.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.03 TO NODE      1.04 IS CODE =  51
----------------------------------------------------------------------------
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   1350.00  DOWNSTREAM(FEET) =   1235.00
CHANNEL LENGTH THRU SUBAREA(FEET) =  1400.00   CHANNEL SLOPE =  0.0821
CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
* 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.709
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
USER-DEFINED              -       16.44      0.05       1.00     -
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    105.52
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  18.97
AVERAGE FLOW DEPTH(FEET) =   0.62   TRAVEL TIME(MIN.) =   1.23
Tc(MIN.) =  12.26
SUBAREA AREA(ACRES) =   16.44       SUBAREA RUNOFF(CFS) =   54.14
EFFECTIVE AREA(ACRES) =   38.84     AREA-AVERAGED Fm(INCH/HR) =   0.06
AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
TOTAL AREA(ACRES) =   38.84         PEAK FLOW RATE(CFS) =     127.63

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.70   FLOW VELOCITY(FEET/SEC.) =  20.24
LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.04 =  2650.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.04 TO NODE      1.05 IS CODE =  51
----------------------------------------------------------------------------
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
```

```
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1235.00  DOWNSTREAM(FEET) =   1145.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.1000
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.603
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       20.40      0.05        1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    160.24
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  23.33
 AVERAGE FLOW DEPTH(FEET) =   0.75   TRAVEL TIME(MIN.) =   0.64
 Tc(MIN.) =  12.90
 SUBAREA AREA(ACRES) =   20.40       SUBAREA RUNOFF(CFS) =   65.22
 EFFECTIVE AREA(ACRES) =   59.24     AREA-AVERAGED Fm(INCH/HR) =   0.06
 AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   59.24         PEAK FLOW RATE(CFS) =     189.14

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.83   FLOW VELOCITY(FEET/SEC.) =  24.69
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.05 =  3550.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.05 TO NODE      1.06 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1145.00  DOWNSTREAM(FEET) =   1000.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1500.00   CHANNEL SLOPE =  0.0967
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.469
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       44.50      0.05        1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    257.61
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  26.99
 AVERAGE FLOW DEPTH(FEET) =   1.00   TRAVEL TIME(MIN.) =   0.93
 Tc(MIN.) =  13.83
 SUBAREA AREA(ACRES) =   44.50       SUBAREA RUNOFF(CFS) =  136.94
 EFFECTIVE AREA(ACRES) =  103.74     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  103.74         PEAK FLOW RATE(CFS) =     318.96

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.13   FLOW VELOCITY(FEET/SEC.) =  29.00
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.06 =  5050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.06 TO NODE      1.07 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
```

```
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1000.00  DOWNSTREAM(FEET) =    870.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.1444
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.406
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       24.10      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    355.36
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  34.29
 AVERAGE FLOW DEPTH(FEET) =   1.08   TRAVEL TIME(MIN.) =   0.44
 Tc(MIN.) =  14.26
 SUBAREA AREA(ACRES) =   24.10       SUBAREA RUNOFF(CFS) =   72.79
 EFFECTIVE AREA(ACRES) =  127.84     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  127.84         PEAK FLOW RATE(CFS) =     385.87

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.12   FLOW VELOCITY(FEET/SEC.) =  35.54
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.07 =  5950.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.07 TO NODE      1.08 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    870.00  DOWNSTREAM(FEET) =    730.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1100.00   CHANNEL SLOPE =  0.1273
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.022   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.305
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -        4.90      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    393.05
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  26.11
 AVERAGE FLOW DEPTH(FEET) =   1.47   TRAVEL TIME(MIN.) =   0.70
 Tc(MIN.) =  14.96
 SUBAREA AREA(ACRES) =    4.90       SUBAREA RUNOFF(CFS) =   14.35
 EFFECTIVE AREA(ACRES) =  132.74     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  132.74         PEAK FLOW RATE(CFS) =     388.59

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.46   FLOW VELOCITY(FEET/SEC.) =  26.08
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.08 =  7050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.08 TO NODE      1.09 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========================================================================
```

```
 ELEVATION DATA: UPSTREAM(FEET) =    730.00  DOWNSTREAM(FEET) =    600.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   600.00   CHANNEL SLOPE =  0.2167
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.276
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        0.00      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.00
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    388.59
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  40.44
 AVERAGE FLOW DEPTH(FEET) =   1.01   TRAVEL TIME(MIN.) =   0.25
 Tc(MIN.) =  15.21
 SUBAREA AREA(ACRES) =    0.00       SUBAREA RUNOFF(CFS) =    0.00
 EFFECTIVE AREA(ACRES) =  132.74     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  132.74         PEAK FLOW RATE(CFS) =     388.59
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.01   FLOW VELOCITY(FEET/SEC.) =  40.44
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.09 =  7650.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.08 TO NODE      1.09 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =  15.21
 RAINFALL INTENSITY(INCH/HR) =   3.28
 AREA-AVERAGED Fm(INCH/HR) =  0.05
 AREA-AVERAGED Fp(INCH/HR) =  0.05
 AREA-AVERAGED Ap =  1.00
 EFFECTIVE STREAM AREA(ACRES) =  132.74
 TOTAL STREAM AREA(ACRES) =  132.74
 PEAK FLOW RATE(CFS) AT CONFLUENCE =    388.59

****************************************************************************
 FLOW PROCESS FROM NODE      1.10 TO NODE      1.11 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  1200.00
 ELEVATION DATA: UPSTREAM(FEET) =   1350.00  DOWNSTREAM(FEET) =   1125.00

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.509
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.659
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS   Tc
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 NATURAL POOR COVER
 "GRASS"                    -        9.60      0.05       1.00     98   12.51
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA RUNOFF(CFS) =     31.18
```

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 TOTAL AREA(ACRES) =      9.60   PEAK FLOW RATE(CFS) =     31.18

****************************************************************************
 FLOW PROCESS FROM NODE      1.11 TO NODE      1.12 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1125.00  DOWNSTREAM(FEET) =   1040.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1200.00   CHANNEL SLOPE =  0.0708
 CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  10.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =   2.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.187
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       16.70      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     54.79
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   5.71
 AVERAGE FLOW DEPTH(FEET) =   0.60   TRAVEL TIME(MIN.) =   3.50
 Tc(MIN.) =  16.01
 SUBAREA AREA(ACRES) =   16.70       SUBAREA RUNOFF(CFS) =   47.14
 EFFECTIVE AREA(ACRES) =   26.30     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   26.30         PEAK FLOW RATE(CFS) =      74.24

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.70   FLOW VELOCITY(FEET/SEC.) =   6.18
 LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.12 =  2400.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.12 TO NODE      1.13 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    930.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1300.00   CHANNEL SLOPE =  0.0846
 CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  10.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =   2.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.900
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       37.70      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    122.63
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.60
 AVERAGE FLOW DEPTH(FEET) =   0.86   TRAVEL TIME(MIN.) =   2.85
 Tc(MIN.) =  18.86
 SUBAREA AREA(ACRES) =   37.70       SUBAREA RUNOFF(CFS) =   96.70
 EFFECTIVE AREA(ACRES) =   64.00     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   64.00         PEAK FLOW RATE(CFS) =     164.16

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.00   FLOW VELOCITY(FEET/SEC.) =   8.25
 LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.13 =  3700.00 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE      1.12 TO NODE      1.13 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  18.86
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.900
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       29.10      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =   29.10      SUBAREA RUNOFF(CFS) =   74.64
 EFFECTIVE AREA(ACRES) =    93.10   AREA-AVERAGED Fm(INCH/HR) =  0.05
 AREA-AVERAGED Fp(INCH/HR) =  0.05  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =    93.10       PEAK FLOW RATE(CFS) =     238.80

****************************************************************************
 FLOW PROCESS FROM NODE      1.13 TO NODE      1.14 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    930.00  DOWNSTREAM(FEET) =    800.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.1625
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.864
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       20.00      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    264.13
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  32.44
 AVERAGE FLOW DEPTH(FEET) =   0.87   TRAVEL TIME(MIN.) =   0.41
 Tc(MIN.) =  19.27
 SUBAREA AREA(ACRES) =   20.00      SUBAREA RUNOFF(CFS) =   50.65
 EFFECTIVE AREA(ACRES) =  113.10    AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05 AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  113.10        PEAK FLOW RATE(CFS) =     286.42

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.92   FLOW VELOCITY(FEET/SEC.) =  33.26
 LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.14 =  4500.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.14 TO NODE      1.09 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    800.00  DOWNSTREAM(FEET) =    600.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.2222
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.830
 SUBAREA LOSS RATE DATA(AMC III):
```

```
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
USER-DEFINED                -       27.90      0.05       1.00     -
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    321.32
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  38.40
AVERAGE FLOW DEPTH(FEET) =   0.90   TRAVEL TIME(MIN.) =   0.39
Tc(MIN.) =  19.66
SUBAREA AREA(ACRES) =   27.90       SUBAREA RUNOFF(CFS) =   69.79
EFFECTIVE AREA(ACRES) =  141.00     AREA-AVERAGED Fm(INCH/HR) =   0.05
AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
TOTAL AREA(ACRES) =  141.00         PEAK FLOW RATE(CFS) =     352.72

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.94   FLOW VELOCITY(FEET/SEC.) =  39.95
LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.09 =  5400.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.14 TO NODE      1.09 IS CODE =   1
----------------------------------------------------------------------------
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
TOTAL NUMBER OF STREAMS.=  2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
TIME OF CONCENTRATION(MIN.) =  19.66
RAINFALL INTENSITY(INCH/HR) =   2.83
AREA-AVERAGED Fm(INCH/HR) =  0.05
AREA-AVERAGED Fp(INCH/HR) =  0.05
AREA-AVERAGED Ap =  1.00
EFFECTIVE STREAM AREA(ACRES) =  141.00
TOTAL STREAM AREA(ACRES) =  141.00
PEAK FLOW RATE(CFS) AT CONFLUENCE =    352.72

** CONFLUENCE DATA **
 STREAM      Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
 NUMBER    (CFS)  (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
    1     388.59  15.21    3.276  0.05( 0.05) 1.00   132.7       1.00
    2     352.72  19.66    2.830  0.05( 0.05) 1.00   141.0       1.10

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR  2 STREAMS.

** PEAK FLOW RATE TABLE **
 STREAM      Q      Tc   Intensity   Fp(Fm)      Ap   Ae      HEADWATER
 NUMBER    (CFS)  (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
    1     705.31  15.21    3.276  0.05( 0.05) 1.00   241.8       1.00
    2     687.47  19.66    2.830  0.05( 0.05) 1.00   273.7       1.10

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =    705.31    Tc(MIN.) =    15.21
EFFECTIVE AREA(ACRES) =   241.82   AREA-AVERAGED Fm(INCH/HR) =  0.05
AREA-AVERAGED Fp(INCH/HR) =  0.05  AREA-AVERAGED Ap =  1.00
TOTAL AREA(ACRES) =    273.74
LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.09 =  7650.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.00 TO NODE      1.20 IS CODE =  21
----------------------------------------------------------------------------
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
================================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   600.00
  ELEVATION DATA: UPSTREAM(FEET) =   1410.00  DOWNSTREAM(FEET) =   1380.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.349
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.690
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "GRASS"                      -        5.10      0.05       1.00    98   12.35
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  SUBAREA RUNOFF(CFS) =     16.71
  TOTAL AREA(ACRES) =      5.10   PEAK FLOW RATE(CFS) =     16.71

********************************************************************************
  FLOW PROCESS FROM NODE      1.20 TO NODE      1.21 IS CODE =  51
--------------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1380.00  DOWNSTREAM(FEET) =   1232.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1450.00   CHANNEL SLOPE =  0.1021
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.426
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED                 -       11.70      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     34.50
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.59
  AVERAGE FLOW DEPTH(FEET) =   0.30   TRAVEL TIME(MIN.) =   1.78
  Tc(MIN.) =  14.13
  SUBAREA AREA(ACRES) =   11.70       SUBAREA RUNOFF(CFS) =   35.55
  EFFECTIVE AREA(ACRES) =   16.80     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =   16.80         PEAK FLOW RATE(CFS) =      51.04

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.38   FLOW VELOCITY(FEET/SEC.) =  15.73
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.21 =  2050.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE      1.20 TO NODE      1.21 IS CODE =  81
--------------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
================================================================================
  MAINLINE Tc(MIN) =  14.13
  * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.426
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  NATURAL POOR COVER
  "GRASS"                      D        9.00      0.20       1.00    98
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
```

```
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    9.00      SUBAREA RUNOFF(CFS) =   26.13
 EFFECTIVE AREA(ACRES) =   25.80    AREA-AVERAGED Fm(INCH/HR) =  0.10
 AREA-AVERAGED Fp(INCH/HR) =  0.10  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   25.80        PEAK FLOW RATE(CFS) =      77.17

****************************************************************************
 FLOW PROCESS FROM NODE      1.21 TO NODE      1.22 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1232.00  DOWNSTREAM(FEET) =   1220.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0150
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =  1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.259
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       20.20      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    106.35
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.78
 AVERAGE FLOW DEPTH(FEET) =   1.03   TRAVEL TIME(MIN.) =   1.24
 Tc(MIN.) =  15.36
 SUBAREA AREA(ACRES) =   20.20       SUBAREA RUNOFF(CFS) =   58.34
 EFFECTIVE AREA(ACRES) =   46.00     AREA-AVERAGED Fm(INCH/HR) =   0.08
 AREA-AVERAGED Fp(INCH/HR) =   0.08  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   46.00         PEAK FLOW RATE(CFS) =     131.65

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.16   FLOW VELOCITY(FEET/SEC.) =  11.60
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.22 =  2850.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.21 TO NODE      1.22 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  15.36
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.259
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        2.60      0.20       1.00     98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    2.60       SUBAREA RUNOFF(CFS) =    7.16
 EFFECTIVE AREA(ACRES) =   48.60     AREA-AVERAGED Fm(INCH/HR) =  0.09
 AREA-AVERAGED Fp(INCH/HR) =  0.09   AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   48.60         PEAK FLOW RATE(CFS) =     138.80

****************************************************************************
 FLOW PROCESS FROM NODE      1.22 TO NODE      1.23 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
```

```
 ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1207.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0162
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.148
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       26.00      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    175.01
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.38
 AVERAGE FLOW DEPTH(FEET) =   1.31   TRAVEL TIME(MIN.) =   1.00
 Tc(MIN.) =  16.36
 SUBAREA AREA(ACRES) =   26.00       SUBAREA RUNOFF(CFS) =   72.48
 EFFECTIVE AREA(ACRES) =  74.60      AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   74.60         PEAK FLOW RATE(CFS) =     206.41

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.48   FLOW VELOCITY(FEET/SEC.) =  13.70
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.23 =  3650.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.23 TO NODE      1.24 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1207.00  DOWNSTREAM(FEET) =   1160.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1200.00   CHANNEL SLOPE =  0.0392
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.033
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       31.30      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    248.43
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  19.62
 AVERAGE FLOW DEPTH(FEET) =   1.28   TRAVEL TIME(MIN.) =   1.02
 Tc(MIN.) =  17.38
 SUBAREA AREA(ACRES) =   31.30       SUBAREA RUNOFF(CFS) =   84.04
 EFFECTIVE AREA(ACRES) =  105.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  105.90         PEAK FLOW RATE(CFS) =     282.78

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.38   FLOW VELOCITY(FEET/SEC.) =  20.33
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.24 =  4850.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.23 TO NODE      1.24 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  17.38
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  3.033
```

```
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                     D        8.40      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    8.40      SUBAREA RUNOFF(CFS) =   21.42
 EFFECTIVE AREA(ACRES) =   114.30   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   114.30       PEAK FLOW RATE(CFS) =     304.20

****************************************************************************
 FLOW PROCESS FROM NODE      1.24 TO NODE      1.25 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1160.00  DOWNSTREAM(FEET) =   1120.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1300.00   CHANNEL SLOPE =  0.0308
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.936
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       39.40      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    355.38
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  20.20
 AVERAGE FLOW DEPTH(FEET) =   1.67   TRAVEL TIME(MIN.) =   1.07
 Tc(MIN.) =  18.45
 SUBAREA AREA(ACRES) =   39.40       SUBAREA RUNOFF(CFS) =  102.34
 EFFECTIVE AREA(ACRES) =  153.70     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  153.70         PEAK FLOW RATE(CFS) =     396.54

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.78   FLOW VELOCITY(FEET/SEC.) =  20.87
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.25 =  6150.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.24 TO NODE      1.25 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  18.45
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.936
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                     D        8.50      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    8.50      SUBAREA RUNOFF(CFS) =   20.93
 EFFECTIVE AREA(ACRES) =   162.20   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   162.20       PEAK FLOW RATE(CFS) =     417.47
```

```
****************************************************************************
 FLOW PROCESS FROM NODE      1.25 TO NODE      1.26 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1120.00  DOWNSTREAM(FEET) =   1080.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1900.00   CHANNEL SLOPE =  0.0211
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.790
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)   (DECIMAL)  CN
 USER-DEFINED                -       31.10      0.05        1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    455.84
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  18.87
 AVERAGE FLOW DEPTH(FEET) =   2.15   TRAVEL TIME(MIN.) =   1.68
 Tc(MIN.) =  20.13
 SUBAREA AREA(ACRES) =   31.10       SUBAREA RUNOFF(CFS) =   76.69
 EFFECTIVE AREA(ACRES) =  193.30     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  193.30         PEAK FLOW RATE(CFS) =     472.84

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  2.18   FLOW VELOCITY(FEET/SEC.) =  19.26
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.26 =  8050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.25 TO NODE      1.26 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  20.13
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.790
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp          Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)   (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                     D        4.30      0.20        1.00     98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    4.30       SUBAREA RUNOFF(CFS) =   10.02
 EFFECTIVE AREA(ACRES) =   197.60    AREA-AVERAGED Fm(INCH/HR) =  0.07
 AREA-AVERAGED Fp(INCH/HR) =  0.07   AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   197.60        PEAK FLOW RATE(CFS) =     482.86

****************************************************************************
 FLOW PROCESS FROM NODE      1.26 TO NODE      1.27 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =   1020.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1100.00   CHANNEL SLOPE =  0.0545
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.739
 SUBAREA LOSS RATE DATA(AMC III):
```

```
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        7.30      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    491.69
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  27.18
 AVERAGE FLOW DEPTH(FEET) =   1.71   TRAVEL TIME(MIN.) =   0.67
 Tc(MIN.) =  20.80
 SUBAREA AREA(ACRES) =    7.30       SUBAREA RUNOFF(CFS) =   17.67
 EFFECTIVE AREA(ACRES) =  204.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  204.90         PEAK FLOW RATE(CFS) =     491.41

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.77   FLOW VELOCITY(FEET/SEC.) =  26.06
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.27 =  9150.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.26 TO NODE      1.27 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  20.80
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.739
 SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        3.40      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    3.40       SUBAREA RUNOFF(CFS) =    7.77
 EFFECTIVE AREA(ACRES) =   208.30    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08   AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   208.30        PEAK FLOW RATE(CFS) =     499.18

****************************************************************************
 FLOW PROCESS FROM NODE      1.27 TO NODE      1.28 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1020.00  DOWNSTREAM(FEET) =    940.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.1000
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.709
 SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       18.60      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    521.44
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  34.18
 AVERAGE FLOW DEPTH(FEET) =   1.49   TRAVEL TIME(MIN.) =   0.39
 Tc(MIN.) =  21.19
 SUBAREA AREA(ACRES) =   18.60       SUBAREA RUNOFF(CFS) =   44.51
 EFFECTIVE AREA(ACRES) =  226.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
```

```
 TOTAL AREA(ACRES) =  226.90          PEAK FLOW RATE(CFS) =     538.13

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.52   FLOW VELOCITY(FEET/SEC.) =  34.57
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.28 =  9950.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.27 TO NODE      1.28 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  21.19
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.709
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                     D        7.80      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    7.80      SUBAREA RUNOFF(CFS) =   17.61
 EFFECTIVE AREA(ACRES) =   234.70   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   234.70       PEAK FLOW RATE(CFS) =     555.75

****************************************************************************
 FLOW PROCESS FROM NODE      1.28 TO NODE      1.29 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    940.00  DOWNSTREAM(FEET) =    700.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1400.00   CHANNEL SLOPE =  0.1714
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 * 100 YEAR RAINFALL INTENSITY(INCH/HR) =  2.668
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       41.50      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    604.64
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  43.08
 AVERAGE FLOW DEPTH(FEET) =   1.39   TRAVEL TIME(MIN.) =   0.54
 Tc(MIN.) =  21.74
 SUBAREA AREA(ACRES) =   41.50       SUBAREA RUNOFF(CFS) =   97.78
 EFFECTIVE AREA(ACRES) =  276.20     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  276.20         PEAK FLOW RATE(CFS) =     644.83

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.44   FLOW VELOCITY(FEET/SEC.) =  43.93
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.29 = 11350.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =    276.20  TC(MIN.) =     21.74
 EFFECTIVE AREA(ACRES) =    276.20  AREA-AVERAGED Fm(INCH/HR)=  0.07
 AREA-AVERAGED Fp(INCH/HR) =  0.07  AREA-AVERAGED Ap =  1.00
 PEAK FLOW RATE(CFS)    =    644.83
============================================================================
```

END OF RATIONAL METHOD ANALYSIS

```
**************************************************************************

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                        Analysis prepared by:

                     Bryan A. Stirrat & Associates
                         1360 Valley Vista Dr.
                         Diamond Bar, CA 91765


 ************************* DESCRIPTION OF STUDY *************************
* Olinda Alpha Landfill Unit Hydrograph and Detention Basin A Analysis     *
* RELOOC Elevation 1410 Expansion                                          *
* CHM                                                                      *
 **************************************************************************

  FILE NAME: OL14DETA.DAT
  TIME/DATE OF STUDY: 11:02 05/14/2004


**************************************************************************
  FLOW PROCESS FROM NODE     1.00 TO NODE     1.09 IS CODE = 1.1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =     273.700 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.230 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         FOOTHILL S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.050
         LOW LOSS FRACTION = 0.050
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.52
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  1.10
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.50
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  2.50
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  3.40
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  5.70

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.988
          30-MINUTE FACTOR = 0.988
           1-HOUR FACTOR = 0.988
           3-HOUR FACTOR = 0.998
           6-HOUR FACTOR = 0.999
          24-HOUR FACTOR = 0.999

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  36.232
```

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 14.00
MODEL TIME(HOURS) FOR END OF RESULTS = 18.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	2.758	91.284
2	12.436	320.366
3	37.461	828.348
4	63.912	875.517
5	74.844	361.857
6	81.961	235.599
7	87.149	171.714
8	90.869	123.119
9	93.713	94.143
10	95.733	66.876
11	97.046	43.466
12	97.985	31.088
13	98.222	7.826
14	98.409	6.201
15	98.597	6.209
16	98.784	6.199
17	98.972	6.206
18	99.159	6.199
19	99.346	6.199
20	99.533	6.199
21	99.721	6.199
22	99.908	6.199
23	100.000	3.048

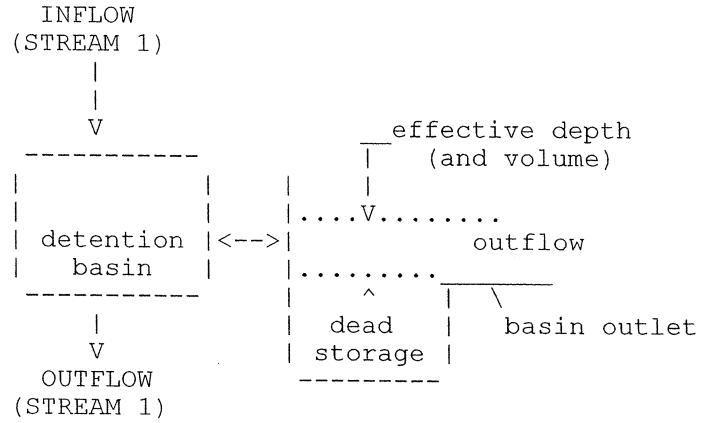
TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 5.8238
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 124.0481

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0. 200.0 400.0 600.0 800.0
14.000	43.7460	88.38	. Q . V . . .
14.083	44.3682	90.34	. Q . V . . .
14.167	45.0078	92.87	. Q . V . . .
14.250	45.6724	96.49	. Q . V . . .
14.333	46.3635	100.35	. Q . V . . .
14.417	47.0753	103.35	. Q . V . . .
14.500	47.8072	106.27	. Q . V . . .
14.583	48.5595	109.24	. Q . V . . .
14.667	49.3331	112.33	. Q . V . . .
14.750	50.1291	115.57	. Q . V . . .
14.833	50.9489	119.04	. Q . V . . .
14.917	51.7942	122.74	. Q . V . . .
15.000	52.6674	126.78	. Q . V . . .
15.083	53.5707	131.17	. Q . V . . .
15.167	54.5077	136.04	. Q . V . . .
15.250	55.4820	141.48	. Q . V . . .
15.333	56.4988	147.63	. Q . V . . .
15.417	57.5618	154.35	. Q . V . . .
15.500	58.6736	161.44	. Q . V . . .
15.583	59.8330	168.34	. Q . V. . .
15.667	61.0520	177.00	. Q . V. . .
15.750	62.3580	189.62	. Q. V . .
15.833	63.7730	205.46	. Q V . .
15.917	65.3338	226.63	. .Q .V . .
16.000	67.1386	262.06	. . Q .V . .
16.083	69.5704	353.10	. . Q . V . .
16.167	73.0353	503.10	. . . V Q . .
16.250	77.9304	710.77	. . . V . Q .
16.333	82.6778	689.32	. . . V . Q .
16.417	85.7586	447.33	. . . Q V . .
16.500	88.2188	357.23	. . Q . V . .
16.583	90.2947	301.42	. . Q . V. .
16.667	92.0743	258.40	. . Q . V. .
16.750	93.6280	225.60	. .Q . V .
16.833	94.9824	196.65	. Q. . V .
16.917	96.1665	171.94	. Q . . .V .
17.000	97.2245	153.61	. Q . . .V .
17.083	98.1481	134.11	. Q . . .V .
17.167	99.0065	124.63	. Q . . .V .
17.250	99.8083	116.43	. Q . . . V .
17.333	100.5605	109.21	. Q . . . V .
17.417	101.2746	103.70	. Q . . . V .
17.500	101.9564	98.99	. Q . . . V .
17.583	102.6095	94.84	. Q . . . V .
17.667	103.2370	91.11	. Q . . . V .
17.750	103.8404	87.61	. Q . . . V .
17.833	104.4201	84.17	. Q . . . V .
17.917	104.9696	79.78	. Q . . . V .
18.000	105.4921	75.86	. Q . . . V .

```
**************************************************************************
  FLOW PROCESS FROM NODE     1.09 TO NODE     1.09 IS CODE = 3.1
--------------------------------------------------------------------------
  >>>>>FLOW-THROUGH DETENTION BASIN ROUTING MODEL APPLIED TO STREAM #1<<<<<
==========================================================================
```



ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 1
THROUGH A FLOW-THROUGH DETENTION BASIN
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
  DEAD STORAGE(AF) = 0.000
  SPECIFIED DEAD STORAGE(AF) FILLED = 0.000
  SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = 0.000
  DETENTION BASIN CONSTANT LOSS RATE(CFS) = 0.00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	0.00	0.00	0.000
2	2.00	80.00	1.400
3	4.00	220.00	3.800
4	6.00	365.00	5.500
5	8.00	530.00	6.900
6	10.00	760.00	7.800

==========

MODIFIED-PULS BASIN ROUTING MODEL RESULTS(5-MINUTE COMPUTATION INTERVALS):
(Note: Computed EFFECTIVE DEPTH and VOLUME are estimated at the clock time;
MEAN OUTFLOW is the average value during the unit interval.)

CLOCK TIME (HRS)	DEAD-STORAGE FILLED(AF)	INFLOW (CFS)	LOSS (CFS)	EFFECTIVE DEPTH(FT)	MEAN OUTFLOW (CFS)	EFFECTIVE VOLUME(AF)
14.083	0.000	90.34	0.00	2.10	86.1	1.519
14.167	0.000	92.87	0.00	2.13	88.0	1.553
14.250	0.000	96.49	0.00	2.16	90.2	1.597
14.333	0.000	100.35	0.00	2.21	93.0	1.648
14.417	0.000	103.35	0.00	2.25	95.9	1.699

14.500	0.000	106.27	0.00	2.29	98.9	1.749
14.583	0.000	109.24	0.00	2.33	101.9	1.800
14.667	0.000	112.33	0.00	2.38	104.8	1.852
14.750	0.000	115.57	0.00	2.42	107.9	1.905
14.833	0.000	119.04	0.00	2.47	111.0	1.960
14.917	0.000	122.74	0.00	2.51	114.3	2.018
15.000	0.000	126.78	0.00	2.57	117.8	2.079
15.083	0.000	131.17	0.00	2.62	121.6	2.145
15.167	0.000	136.04	0.00	2.68	125.6	2.217
15.250	0.000	141.48	0.00	2.75	130.0	2.297
15.333	0.000	147.63	0.00	2.82	134.9	2.385
15.417	0.000	154.35	0.00	2.90	140.3	2.482
15.500	0.000	161.44	0.00	2.99	146.2	2.587
15.583	0.000	168.34	0.00	3.08	152.4	2.696
15.667	0.000	177.00	0.00	3.18	159.2	2.819
15.750	0.000	189.62	0.00	3.31	167.3	2.973
15.833	0.000	205.46	0.00	3.47	177.4	3.166
15.917	0.000	226.63	0.00	3.68	190.3	3.416
16.000	0.000	262.06	0.00	3.99	208.4	3.786
16.083	0.000	353.10	0.00	4.82	249.4	4.500
16.167	0.000	503.10	0.00	6.25	332.6	5.674
16.250	0.000	710.77	0.00	8.61	492.9	7.175
16.333	0.000	689.32	0.00	9.34	641.9	7.501
16.417	0.000	447.33	0.00	7.49	586.0	6.546
16.500	0.000	357.23	0.00	6.58	450.5	5.904
16.583	0.000	301.42	0.00	5.82	382.3	5.347
16.667	0.000	258.40	0.00	5.23	330.7	4.849
16.750	0.000	225.60	0.00	4.71	290.4	4.403
16.833	0.000	196.65	0.00	4.24	254.4	4.005
16.917	0.000	171.94	0.00	3.87	224.2	3.645
17.000	0.000	153.61	0.00	3.60	201.4	3.316
17.083	0.000	134.11	0.00	3.32	182.1	2.985
17.167	0.000	124.63	0.00	3.09	164.5	2.711
17.250	0.000	116.43	0.00	2.90	149.8	2.481
17.333	0.000	109.21	0.00	2.74	137.4	2.287
17.417	0.000	103.70	0.00	2.61	127.1	2.126
17.500	0.000	98.99	0.00	2.49	118.5	1.992
17.583	0.000	94.84	0.00	2.40	111.2	1.879
17.667	0.000	91.11	0.00	2.32	105.1	1.783
17.750	0.000	87.61	0.00	2.25	99.9	1.698
17.833	0.000	84.17	0.00	2.19	95.2	1.622
17.917	0.000	79.78	0.00	2.12	90.8	1.547
18.000	0.000	75.86	0.00	2.06	86.4	1.474

PROCESS SUMMARY OF STORAGE:

INFLOW VOLUME = 124.048 AF

BASIN STORAGE = 0.000 AF (WITH 0.000 AF INITIALLY FILLED)

OUTFLOW VOLUME = 124.048 AF

LOSS VOLUME = 0.000 AF

==========

END OF FLOODSCx ROUTING ANALYSIS

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**************************************************************************

          F L O O D   R O U T I N G   A N A L Y S I S
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                        Analysis prepared by:

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 ************************** DESCRIPTION OF STUDY **************************
* 100-YEAR DETENTION BASIN ANALYSIS                                       *
* OLINDA ALPHA LANDFILL - DETENTION BASIN B                               *
*                                                                         *
 *************************************************************************

  FILE NAME: OLINBASB.DAT
  TIME/DATE OF STUDY: 14:12   5/14/2004

**************************************************************************
  FLOW PROCESS FROM NODE     1.00 TO NODE     1.29 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>UNIT-HYDROGRAPH ANALYSIS<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =     276.200 ACRES
         BASEFLOW =     .000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =      .350 HOURS
          CAUTION: LAG TIME IS LESS THAN  .50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         FOOTHILL S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =    .050
         LOW LOSS FRACTION =   .050
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=    .52
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  1.09
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.45
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  2.43
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  3.36
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  5.63

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR =  .988
          30-MINUTE FACTOR =  .988
           1-HOUR FACTOR =  .988
           3-HOUR FACTOR =  .998
           6-HOUR FACTOR =  .999
          24-HOUR FACTOR =  .999

         UNIT HYDROGRAPH TIME UNIT =   5.000 MINUTES
         UNIT INTERVAL PERCENTAGE OF LAG-TIME =  23.810
```

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 14.00
MODEL TIME(HOURS) FOR END OF RESULTS = 18.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	1.611	53.817
2	6.381	159.326
3	14.227	262.076
4	28.973	492.551
5	54.224	843.460
6	65.769	385.663
7	72.966	240.384
8	78.381	180.889
9	82.667	143.143
10	86.085	114.183
11	88.929	94.983
12	91.247	77.444
13	93.179	64.532
14	94.748	52.411
15	95.963	40.575
16	96.953	33.073
17	97.692	24.699
18	98.100	13.616
19	98.385	9.536
20	98.643	8.596
21	98.881	7.957
22	99.071	6.357
23	99.262	6.357
24	99.452	6.357
25	99.642	6.357
26	99.833	6.357
27	100.000	5.594

TOTAL STORM RAINFALL(INCHES) = 5.63
TOTAL SOIL-LOSS(INCHES) = .25
TOTAL EFFECTIVE RAINFALL(INCHES) = 5.37

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 5.8060
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 123.6420

2 4 - H O U R S T O R M
R U N O F F H Y D R O G R A P H

HYDROGRAPH IN FIVE-MINUTE INTERVALS(CFS)

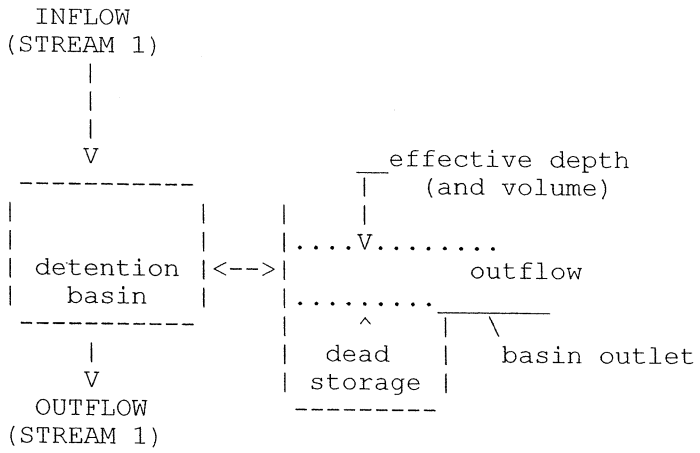
TIME(HRS)	VOLUME(AF)	Q(CFS)	0. 175.0 350.0 525.0 700.0
14.083	43.5824	90.55	
14.167	44.2184	92.36	
14.250	44.8688	94.43	
14.333	45.5344	96.64	
14.417	46.2184	99.33	
14.500	46.9189	101.71	
14.583	47.6370	104.27	
14.667	48.3727	106.82	
14.750	49.1281	109.67	
14.833	49.9033	112.56	
14.917	50.7011	115.85	
15.000	51.5222	119.21	
15.083	52.3699	123.09	
15.167	53.2453	127.11	
15.250	54.1531	131.81	
15.333	55.0950	136.76	
15.417	56.0746	142.24	
15.500	57.0894	147.35	
15.583	58.1436	153.07	
15.667	59.2308	157.87	
15.750	60.3486	162.31	
15.833	61.5353	172.31	
15.917	62.8353	188.75	
16.000	64.3051	213.42	
16.083	66.1541	268.47	
16.167	68.5447	347.12	
16.250	71.5231	432.45	
16.333	75.2920	547.25	
16.417	79.8051	655.31	
16.500	82.8570	443.13	
16.583	85.2670	349.92	
16.667	87.3386	300.80	
16.750	89.1912	268.99	
16.833	90.8517	241.11	
16.917	92.3577	218.68	
17.000	93.7258	198.64	
17.083	94.9770	181.67	
17.167	96.1209	166.10	
17.250	97.1660	151.74	
17.333	98.1282	139.71	
17.417	99.0095	127.97	
17.500	99.8134	116.73	
17.583	100.5671	109.43	
17.667	101.2854	104.30	
17.750	101.9732	99.88	
17.833	102.6313	95.56	
17.917	103.2665	92.23	
18.000	103.8807	89.18	

```
**************************************************************************
 FLOW PROCESS FROM NODE     1.29 TO NODE     1.29 IS CODE =   3
--------------------------------------------------------------------------
 >>>>>MODEL FLOW-THROUGH DETENTION BASIN ROUTING<<<<<
==========================================================================
```

ROUTE RUNOFF HYDROGRAPH FROM STREAM NUMBER 1
THROUGH A FLOW-THROUGH DETENTION BASIN
USING FIVE-MINUTE UNIT INTERVALS:
SPECIFIED BASIN CONDITIONS ARE AS FOLLOWS:
  DEAD STORAGE(AF) = .000
  SPECIFIED DEAD STORAGE(AF) FILLED = .000
  SPECIFIED EFFECTIVE VOLUME(AF) FILLED ABOVE OUTLET = .000
  DETENTION BASIN CONSTANT LOSS RATE(CFS) = .00

BASIN DEPTH VERSUS OUTFLOW AND STORAGE INFORMATION:

INTERVAL NUMBER	DEPTH (FT)	OUTFLOW (CFS)	STORAGE (AF)
1	.00	.00	.000
2	.20	115.00	.200
3	1.00	125.00	.600
4	2.50	130.00	1.300
5	4.00	220.00	3.300
6	6.00	415.00	5.500
7	8.00	470.00	7.400



==

BASIN ROUTING MODEL RESULTS(5-MINUTE INTERVALS):

TIME (HRS)	DEAD-STORAGE FILLED(AF)	INFLOW (CFS)	EFFECTIVE DEPTH(FT)	OUTFLOW (CFS)	EFFECTIVE VOLUME(AF)
14.083	.000	90.6	.16	90.1	.158
14.167	.000	92.4	.16	91.9	.161
14.250	.000	94.4	.17	93.9	.165
14.333	.000	96.6	.17	96.1	.169
14.417	.000	99.3	.17	98.6	.174

14.500	.000	101.7	.18	101.1	.178
14.583	.000	104.3	.18	103.6	.182
14.667	.000	106.8	.19	106.2	.187
14.750	.000	109.7	.19	108.9	.192
14.833	.000	112.6	.20	111.8	.197
14.917	.000	115.8	.22	114.2	.208
15.000	.000	119.2	.27	115.5	.234
15.083	.000	123.1	.36	116.4	.280
15.167	.000	127.1	.49	117.8	.344
15.250	.000	131.8	.65	119.6	.427
15.333	.000	136.8	.86	122.0	.529
15.417	.000	142.2	1.11	124.3	.653
15.500	.000	147.4	1.43	125.9	.801
15.583	.000	153.1	1.81	127.1	.980
15.667	.000	157.9	2.25	128.4	1.182
15.750	.000	162.3	2.57	131.7	1.393
15.833	.000	172.3	2.74	139.3	1.621
15.917	.000	188.8	2.94	150.4	1.885
16.000	.000	213.4	3.19	164.0	2.225
16.083	.000	268.5	3.63	184.6	2.803
16.167	.000	347.1	4.32	224.3	3.649
16.250	.000	432.5	5.19	293.4	4.607
16.333	.000	547.3	6.28	379.2	5.764
16.417	.000	655.3	7.81	443.7	7.221
16.500	.000	443.1	7.67	462.9	7.085
16.583	.000	349.9	6.94	450.8	6.390
16.667	.000	300.8	6.01	428.1	5.514
16.750	.000	269.0	5.31	381.5	4.739
16.833	.000	241.1	4.80	322.7	4.177
16.917	.000	218.7	4.42	279.3	3.760
17.000	.000	198.6	4.12	246.2	3.432
17.083	.000	181.7	3.89	222.5	3.151
17.167	.000	166.1	3.68	207.0	2.870
17.250	.000	151.7	3.46	194.1	2.578
17.333	.000	139.7	3.24	181.1	2.293
17.417	.000	128.0	3.04	168.4	2.014
17.500	.000	116.7	2.83	156.1	1.744
17.583	.000	109.4	2.65	144.5	1.502
17.667	.000	104.3	2.49	134.5	1.294
17.750	.000	99.9	2.05	129.2	1.092
17.833	.000	95.6	1.58	127.7	.870
17.917	.000	92.2	1.08	126.1	.637
18.000	.000	89.2	.61	122.7	.406

PROCESS SUMMARY OF STORAGE:

INFLOW VOLUME = 123.642 AF

BASIN STORAGE = .000 AF (WITH .000 AF INITIALLY FILLED)

OUTFLOW VOLUME = 123.642 AF

LOSS VOLUME = .000 AF

==========

END OF FLOOD ROUTING ANALYSIS

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**************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
           (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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                          Analysis prepared by:

                      Bryan A. Stirrat & Associates
                          1360 Valley Vista Dr.
                          Diamond Bar, CA 91765


 ************************* DESCRIPTION OF STUDY *************************
* 2-Year 24-Hour Hydrology Study                                         *
* Olinda Alpha RELOOC 1400 Ultimate Elevation                            *
* CHM                                                                    *
 **************************************************************************

  FILE NAME: OA14Y2.DAT
  TIME/DATE OF STUDY: 10:17 06/08/2004
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  24.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) III ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      1.01 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   400.00
  ELEVATION DATA: UPSTREAM(FEET) =   1410.00  DOWNSTREAM(FEET) =   1380.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    9.682
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.549
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
```

```
"GRASS"                    -       4.80      0.05      1.00     0    9.68
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
SUBAREA RUNOFF(CFS) =      6.48
TOTAL AREA(ACRES) =      4.80   PEAK FLOW RATE(CFS) =      6.48

****************************************************************************
FLOW PROCESS FROM NODE      1.00 TO NODE      1.01 IS CODE =  81
----------------------------------------------------------------------------
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
MAINLINE Tc(MIN) =   9.68
*   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.549
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
NATURAL POOR COVER
"GRASS"                    D       2.00      0.20      1.00     98
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
SUBAREA AREA(ACRES) =     2.00      SUBAREA RUNOFF(CFS) =     2.43
EFFECTIVE AREA(ACRES) =     6.80   AREA-AVERAGED Fm(INCH/HR) =  0.09
AREA-AVERAGED Fp(INCH/HR) =  0.09  AREA-AVERAGED Ap =  1.00
TOTAL AREA(ACRES) =     6.80       PEAK FLOW RATE(CFS) =       8.90

****************************************************************************
FLOW PROCESS FROM NODE      1.01 TO NODE      1.02 IS CODE =  51
----------------------------------------------------------------------------
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   1380.00  DOWNSTREAM(FEET) =   1360.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   600.00   CHANNEL SLOPE =  0.0333
CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
*   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.426
SUBAREA LOSS RATE DATA(AMC III):
 DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
USER-DEFINED               -       7.10      0.05      1.00      -
SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     13.30
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.65
AVERAGE FLOW DEPTH(FEET) =   0.24   TRAVEL TIME(MIN.) =   1.50
Tc(MIN.) =  11.19
SUBAREA AREA(ACRES) =    7.10       SUBAREA RUNOFF(CFS) =    8.79
EFFECTIVE AREA(ACRES) =   13.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
TOTAL AREA(ACRES) =   13.90         PEAK FLOW RATE(CFS) =      16.94

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.28   FLOW VELOCITY(FEET/SEC.) =   7.25
LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.02 =  1000.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE      1.02 TO NODE      1.03 IS CODE =  51
----------------------------------------------------------------------------
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   1360.00  DOWNSTREAM(FEET) =   1350.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   250.00   CHANNEL SLOPE =  0.0400
CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
```

```
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.393
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        8.50      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     22.07
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.03
 AVERAGE FLOW DEPTH(FEET) =   0.29   TRAVEL TIME(MIN.) =   0.46
 Tc(MIN.) =  11.65
 SUBAREA AREA(ACRES) =    8.50       SUBAREA RUNOFF(CFS) =   10.27
 EFFECTIVE AREA(ACRES) =   22.40     AREA-AVERAGED Fm(INCH/HR) =   0.06
 AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   22.40         PEAK FLOW RATE(CFS) =      26.81

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.34   FLOW VELOCITY(FEET/SEC.) =   9.25
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.03 =  1250.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.03 TO NODE      1.04 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1350.00  DOWNSTREAM(FEET) =   1235.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1400.00   CHANNEL SLOPE =  0.0821
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.281
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       16.44      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     35.93
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  12.78
 AVERAGE FLOW DEPTH(FEET) =   0.33   TRAVEL TIME(MIN.) =   1.83
 Tc(MIN.) =  13.47
 SUBAREA AREA(ACRES) =   16.44       SUBAREA RUNOFF(CFS) =   18.22
 EFFECTIVE AREA(ACRES) =   38.84     AREA-AVERAGED Fm(INCH/HR) =   0.06
 AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   38.84         PEAK FLOW RATE(CFS) =      42.77

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.36   FLOW VELOCITY(FEET/SEC.) =  13.78
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.04 =  2650.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.04 TO NODE      1.05 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1235.00  DOWNSTREAM(FEET) =   1145.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.1000
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.232
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
```

```
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED              -       20.40      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     53.63
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  15.85
  AVERAGE FLOW DEPTH(FEET) =   0.39   TRAVEL TIME(MIN.) =   0.95
  Tc(MIN.) =  14.42
  SUBAREA AREA(ACRES) =   20.40       SUBAREA RUNOFF(CFS) =   21.71
  EFFECTIVE AREA(ACRES) =   59.24     AREA-AVERAGED Fm(INCH/HR) =   0.06
  AREA-AVERAGED Fp(INCH/HR) =   0.06  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =   59.24         PEAK FLOW RATE(CFS) =      62.77

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.43   FLOW VELOCITY(FEET/SEC.) =  16.80
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.05 =  3550.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.05 TO NODE      1.06 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1145.00  DOWNSTREAM(FEET) =   1000.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1500.00   CHANNEL SLOPE =  0.0967
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.171
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED              -       44.50      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     85.21
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  18.53
  AVERAGE FLOW DEPTH(FEET) =   0.52   TRAVEL TIME(MIN.) =   1.35
  Tc(MIN.) =  15.77
  SUBAREA AREA(ACRES) =   44.50       SUBAREA RUNOFF(CFS) =   44.88
  EFFECTIVE AREA(ACRES) =  103.74     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  103.74         PEAK FLOW RATE(CFS) =     104.37

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.59   FLOW VELOCITY(FEET/SEC.) =  19.90
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.06 =  5050.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.06 TO NODE      1.07 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1000.00  DOWNSTREAM(FEET) =    870.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.1444
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.144
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
     LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED              -       24.10      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
```

```
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    116.24
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  23.49
 AVERAGE FLOW DEPTH(FEET) =   0.56   TRAVEL TIME(MIN.) =   0.64
 Tc(MIN.) =  16.41
 SUBAREA AREA(ACRES) =   24.10       SUBAREA RUNOFF(CFS) =   23.74
 EFFECTIVE AREA(ACRES) =  127.84     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  127.84         PEAK FLOW RATE(CFS) =     125.64

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.58   FLOW VELOCITY(FEET/SEC.) =  24.21
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.07 =  5950.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.07 TO NODE      1.08 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    870.00  DOWNSTREAM(FEET) =    730.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1100.00   CHANNEL SLOPE =  0.1273
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.022   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.106
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        4.90      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    127.97
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  18.21
 AVERAGE FLOW DEPTH(FEET) =   0.77   TRAVEL TIME(MIN.) =   1.01
 Tc(MIN.) =  17.41
 SUBAREA AREA(ACRES) =    4.90       SUBAREA RUNOFF(CFS) =    4.66
 EFFECTIVE AREA(ACRES) =  132.74     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  132.74         PEAK FLOW RATE(CFS) =     125.87

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.76   FLOW VELOCITY(FEET/SEC.) =  18.12
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.08 =  7050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.08 TO NODE      1.09 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    730.00  DOWNSTREAM(FEET) =    600.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   600.00   CHANNEL SLOPE =  0.2167
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.093
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        0.00      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.00
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    125.87
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  27.47
 AVERAGE FLOW DEPTH(FEET) =   0.52   TRAVEL TIME(MIN.) =   0.36
 Tc(MIN.) =  17.78
```

```
  SUBAREA AREA(ACRES) =     0.00       SUBAREA RUNOFF(CFS) =     0.00
  EFFECTIVE AREA(ACRES) =  132.74      AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05   AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  132.74          PEAK FLOW RATE(CFS) =     125.87
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.52   FLOW VELOCITY(FEET/SEC.) =  27.47
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.09 =  7650.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.08 TO NODE      1.09 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =  17.78
  RAINFALL INTENSITY(INCH/HR) =   1.09
  AREA-AVERAGED Fm(INCH/HR) =  0.05
  AREA-AVERAGED Fp(INCH/HR) =  0.05
  AREA-AVERAGED Ap =  1.00
  EFFECTIVE STREAM AREA(ACRES) =  132.74
  TOTAL STREAM AREA(ACRES) =  132.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =    125.87

****************************************************************************
  FLOW PROCESS FROM NODE      1.10 TO NODE      1.11 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =  1200.00
  ELEVATION DATA: UPSTREAM(FEET) =   1350.00  DOWNSTREAM(FEET) =   1125.00

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.509
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.337
  SUBAREA Tc AND LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  NATURAL POOR COVER
  "GRASS"                    -        9.60      0.05       1.00     98   12.51
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  SUBAREA RUNOFF(CFS) =     11.12
  TOTAL AREA(ACRES) =      9.60   PEAK FLOW RATE(CFS) =     11.12

****************************************************************************
  FLOW PROCESS FROM NODE      1.11 TO NODE      1.12 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1125.00  DOWNSTREAM(FEET) =   1040.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1200.00   CHANNEL SLOPE =  0.0708
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  10.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =   2.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.111
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       16.70      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
```

```
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     19.10
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.19
  AVERAGE FLOW DEPTH(FEET) =   0.34   TRAVEL TIME(MIN.) =   4.78
  Tc(MIN.) =  17.29
  SUBAREA AREA(ACRES) =   16.70       SUBAREA RUNOFF(CFS) =   15.94
  EFFECTIVE AREA(ACRES) =   26.30     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =   26.30         PEAK FLOW RATE(CFS) =      25.10

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.40   FLOW VELOCITY(FEET/SEC.) =   4.49
  LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.12 =  2400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.12 TO NODE      1.13 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1040.00  DOWNSTREAM(FEET) =    930.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1300.00   CHANNEL SLOPE =  0.0846
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  10.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =   2.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.989
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       37.70      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     41.05
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   5.58
  AVERAGE FLOW DEPTH(FEET) =   0.49   TRAVEL TIME(MIN.) =   3.89
  Tc(MIN.) =  21.17
  SUBAREA AREA(ACRES) =   37.70       SUBAREA RUNOFF(CFS) =   31.85
  EFFECTIVE AREA(ACRES) =   64.00     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =   64.00         PEAK FLOW RATE(CFS) =      54.06

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.57   FLOW VELOCITY(FEET/SEC.) =   6.05
  LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.13 =  3700.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.12 TO NODE      1.13 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN) =  21.17
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.989
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       29.10      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  SUBAREA AREA(ACRES) =   29.10       SUBAREA RUNOFF(CFS) =   24.58
  EFFECTIVE AREA(ACRES) =    93.10    AREA-AVERAGED Fm(INCH/HR) =  0.05
  AREA-AVERAGED Fp(INCH/HR) =  0.05   AREA-AVERAGED Ap =  1.00
  TOTAL AREA(ACRES) =    93.10        PEAK FLOW RATE(CFS) =      78.64

****************************************************************************
  FLOW PROCESS FROM NODE      1.13 TO NODE      1.14 IS CODE =  51
```

```
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    930.00  DOWNSTREAM(FEET) =    800.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.1625
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.973
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       20.00      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     86.95
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  22.01
  AVERAGE FLOW DEPTH(FEET) =   0.45   TRAVEL TIME(MIN.) =   0.61
  Tc(MIN.) =  21.78
  SUBAREA AREA(ACRES) =   20.00       SUBAREA RUNOFF(CFS) =   16.61
  EFFECTIVE AREA(ACRES) =  113.10     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  113.10         PEAK FLOW RATE(CFS) =      93.92

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.48   FLOW VELOCITY(FEET/SEC.) =  22.65
  LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.14 =  4500.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.14 TO NODE      1.09 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    800.00  DOWNSTREAM(FEET) =    600.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   900.00   CHANNEL SLOPE =  0.2222
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.958
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       27.90      0.05       1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    105.32
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  26.19
  AVERAGE FLOW DEPTH(FEET) =   0.46   TRAVEL TIME(MIN.) =   0.57
  Tc(MIN.) =  22.35
  SUBAREA AREA(ACRES) =   27.90       SUBAREA RUNOFF(CFS) =   22.81
  EFFECTIVE AREA(ACRES) =  141.00     AREA-AVERAGED Fm(INCH/HR) =   0.05
  AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  141.00         PEAK FLOW RATE(CFS) =     115.26

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.49   FLOW VELOCITY(FEET/SEC.) =  26.86
  LONGEST FLOWPATH FROM NODE      1.10 TO NODE      1.09 =  5400.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.14 TO NODE      1.09 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
```

```
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =  22.35
 RAINFALL INTENSITY(INCH/HR) =   0.96
 AREA-AVERAGED Fm(INCH/HR) =  0.05
 AREA-AVERAGED Fp(INCH/HR) =  0.05
 AREA-AVERAGED Ap =  1.00
 EFFECTIVE STREAM AREA(ACRES) =  141.00
 TOTAL STREAM AREA(ACRES) =  141.00
 PEAK FLOW RATE(CFS) AT CONFLUENCE =    115.26

 ** CONFLUENCE DATA **
  STREAM     Q      Tc    Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1    125.87  17.78    1.093  0.05( 0.05) 1.00   132.7        1.00
     2    115.26  22.35    0.958  0.05( 0.05) 1.00   141.0        1.10

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
  STREAM     Q      Tc    Intensity   Fp(Fm)      Ap   Ae      HEADWATER
  NUMBER   (CFS) (MIN.) (INCH/HR) (INCH/HR)        (ACRES)    NODE
     1    231.14  17.78    1.093  0.05( 0.05) 1.00   244.9        1.00
     2    224.86  22.35    0.958  0.05( 0.05) 1.00   273.7        1.10

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =    231.14    Tc(MIN.) =    17.78
 EFFECTIVE AREA(ACRES) =   244.90   AREA-AVERAGED Fm(INCH/HR) =  0.05
 AREA-AVERAGED Fp(INCH/HR) =  0.05  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =    273.74
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.09 =  7650.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.00 TO NODE      1.20 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
============================================================================
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   600.00
 ELEVATION DATA: UPSTREAM(FEET) =   1410.00  DOWNSTREAM(FEET) =   1380.00

 Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
 SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   12.349
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.347
 SUBAREA Tc AND LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp          Ap      SCS   Tc
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
 NATURAL POOR COVER
 "GRASS"                    -        5.10      0.05       1.00     98   12.35
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA RUNOFF(CFS) =      5.95
 TOTAL AREA(ACRES) =      5.10   PEAK FLOW RATE(CFS) =      5.95

****************************************************************************
 FLOW PROCESS FROM NODE      1.20 TO NODE      1.21 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1380.00  DOWNSTREAM(FEET) =   1232.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1450.00   CHANNEL SLOPE =  0.1021
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
```

```
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.203
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       11.70      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     12.05
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.96
 AVERAGE FLOW DEPTH(FEET) =   0.16   TRAVEL TIME(MIN.) =   2.70
 Tc(MIN.) =  15.04
 SUBAREA AREA(ACRES) =   11.70       SUBAREA RUNOFF(CFS) =   12.14
 EFFECTIVE AREA(ACRES) =   16.80     AREA-AVERAGED Fm(INCH/HR) =   0.05
 AREA-AVERAGED Fp(INCH/HR) =   0.05  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   16.80         PEAK FLOW RATE(CFS) =      17.43

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.20   FLOW VELOCITY(FEET/SEC.) =  10.43
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.21 =  2050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.20 TO NODE      1.21 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  15.04
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.203
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        9.00      0.20       1.00     98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    9.00       SUBAREA RUNOFF(CFS) =    8.12
 EFFECTIVE AREA(ACRES) =    25.80    AREA-AVERAGED Fm(INCH/HR) =  0.10
 AREA-AVERAGED Fp(INCH/HR) =  0.10   AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =    25.80        PEAK FLOW RATE(CFS) =      25.55

****************************************************************************
 FLOW PROCESS FROM NODE      1.21 TO NODE      1.22 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1232.00  DOWNSTREAM(FEET) =   1220.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0150
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.128
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       20.20      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     35.35
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.45
 AVERAGE FLOW DEPTH(FEET) =   0.54   TRAVEL TIME(MIN.) =   1.79
 Tc(MIN.) =  16.83
 SUBAREA AREA(ACRES) =   20.20       SUBAREA RUNOFF(CFS) =   19.59
 EFFECTIVE AREA(ACRES) =   46.00     AREA-AVERAGED Fm(INCH/HR) =   0.08
 AREA-AVERAGED Fp(INCH/HR) =   0.08  AREA-AVERAGED Ap =   1.00
```

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 TOTAL AREA(ACRES) =   46.00          PEAK FLOW RATE(CFS) =      43.40

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.58   FLOW VELOCITY(FEET/SEC.) =   8.44
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.22 =  2850.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.21 TO NODE      1.22 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  16.83
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.128
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        2.60      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    2.60      SUBAREA RUNOFF(CFS) =    2.17
 EFFECTIVE AREA(ACRES) =    48.60   AREA-AVERAGED Fm(INCH/HR) =  0.09
 AREA-AVERAGED Fp(INCH/HR) =  0.09  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =    48.60       PEAK FLOW RATE(CFS) =      45.57

****************************************************************************
 FLOW PROCESS FROM NODE      1.22 TO NODE      1.23 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1220.00  DOWNSTREAM(FEET) =   1207.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0162
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.074
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       26.00      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     57.56
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.02
 AVERAGE FLOW DEPTH(FEET) =   0.70   TRAVEL TIME(MIN.) =   1.48
 Tc(MIN.) =  18.31
 SUBAREA AREA(ACRES) =   26.00       SUBAREA RUNOFF(CFS) =   23.97
 EFFECTIVE AREA(ACRES) =   74.60     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =   74.60         PEAK FLOW RATE(CFS) =      67.21

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.77   FLOW VELOCITY(FEET/SEC.) =   9.50
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.23 =  3650.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.23 TO NODE      1.24 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1207.00  DOWNSTREAM(FEET) =   1160.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1200.00   CHANNEL SLOPE =  0.0392
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
```

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 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.028
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       31.30      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     80.98
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.50
 AVERAGE FLOW DEPTH(FEET) =   0.67   TRAVEL TIME(MIN.) =   1.48
 Tc(MIN.) =  19.80
 SUBAREA AREA(ACRES) =   31.30       SUBAREA RUNOFF(CFS) =   27.54
 EFFECTIVE AREA(ACRES) =  105.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  105.90         PEAK FLOW RATE(CFS) =      91.60

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.71   FLOW VELOCITY(FEET/SEC.) =  14.14
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.24 =  4850.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.23 TO NODE      1.24 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  19.80
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  1.028
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        8.40      0.20       1.00     98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    8.40       SUBAREA RUNOFF(CFS) =    6.26
 EFFECTIVE AREA(ACRES) =   114.30    AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08   AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   114.30        PEAK FLOW RATE(CFS) =      97.85

****************************************************************************
 FLOW PROCESS FROM NODE      1.24 TO NODE      1.25 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1160.00  DOWNSTREAM(FEET) =   1120.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1300.00   CHANNEL SLOPE =  0.0308
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.984
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       39.40      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    114.42
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  14.09
 AVERAGE FLOW DEPTH(FEET) =   0.87   TRAVEL TIME(MIN.) =   1.54
 Tc(MIN.) =  21.33
 SUBAREA AREA(ACRES) =   39.40       SUBAREA RUNOFF(CFS) =   33.13
 EFFECTIVE AREA(ACRES) =  153.70     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
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 TOTAL AREA(ACRES) =  153.70          PEAK FLOW RATE(CFS) =     126.54

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.93   FLOW VELOCITY(FEET/SEC.) =  14.55
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.25 =  6150.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.24 TO NODE      1.25 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  21.33
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.984
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        8.50      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    8.50      SUBAREA RUNOFF(CFS) =    6.00
 EFFECTIVE AREA(ACRES) =   162.20   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   162.20       PEAK FLOW RATE(CFS) =     132.54

****************************************************************************
 FLOW PROCESS FROM NODE      1.25 TO NODE      1.26 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1120.00  DOWNSTREAM(FEET) =   1080.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1900.00   CHANNEL SLOPE =  0.0211
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.927
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       31.10      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    144.81
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.40
 AVERAGE FLOW DEPTH(FEET) =   1.12   TRAVEL TIME(MIN.) =   2.36
 Tc(MIN.) =  23.70
 SUBAREA AREA(ACRES) =   31.10       SUBAREA RUNOFF(CFS) =   24.54
 EFFECTIVE AREA(ACRES) =  193.30     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  193.30         PEAK FLOW RATE(CFS) =     148.67

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  1.13   FLOW VELOCITY(FEET/SEC.) =  13.52
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.26 =  8050.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.25 TO NODE      1.26 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  23.70
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.927
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
```

```
     LAND USE              GROUP   (ACRES)   (INCH/HR)   (DECIMAL)   CN
  NATURAL POOR COVER
  "GRASS"                    D        4.30       0.20        1.00     98
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  SUBAREA AREA(ACRES) =     4.30      SUBAREA RUNOFF(CFS) =     2.81
  EFFECTIVE AREA(ACRES) =   197.60   AREA-AVERAGED Fm(INCH/HR) =  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.07  AREA-AVERAGED Ap =  1.00
  TOTAL AREA(ACRES) =   197.60       PEAK FLOW RATE(CFS) =     151.48

****************************************************************************
  FLOW PROCESS FROM NODE      1.26 TO NODE      1.27 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1080.00  DOWNSTREAM(FEET) =   1020.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1100.00   CHANNEL SLOPE =  0.0545
  CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.906
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        7.30      0.05        1.00     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    154.29
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  18.81
  AVERAGE FLOW DEPTH(FEET) =   0.88   TRAVEL TIME(MIN.) =   0.97
  Tc(MIN.) =  24.67
  SUBAREA AREA(ACRES) =     7.30      SUBAREA RUNOFF(CFS) =     5.62
  EFFECTIVE AREA(ACRES) =  204.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
  AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  204.90         PEAK FLOW RATE(CFS) =     153.33

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.87   FLOW VELOCITY(FEET/SEC.) =  18.83
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.27 =  9150.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE      1.26 TO NODE      1.27 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  MAINLINE Tc(MIN) =  24.67
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.906
  SUBAREA LOSS RATE DATA(AMC III):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  NATURAL POOR COVER
  "GRASS"                    D        3.40      0.20        1.00     98
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
  SUBAREA AREA(ACRES) =     3.40      SUBAREA RUNOFF(CFS) =     2.16
  EFFECTIVE AREA(ACRES) =   208.30   AREA-AVERAGED Fm(INCH/HR) =  0.08
  AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
  TOTAL AREA(ACRES) =   208.30       PEAK FLOW RATE(CFS) =     155.49

****************************************************************************
  FLOW PROCESS FROM NODE      1.27 TO NODE      1.28 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
```

```
==============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1020.00  DOWNSTREAM(FEET) =    940.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.1000
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.894
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       18.60      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    162.55
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  23.40
 AVERAGE FLOW DEPTH(FEET) =   0.76   TRAVEL TIME(MIN.) =   0.57
 Tc(MIN.) =  25.24
 SUBAREA AREA(ACRES) =   18.60       SUBAREA RUNOFF(CFS) =   14.12
 EFFECTIVE AREA(ACRES) =  226.90     AREA-AVERAGED Fm(INCH/HR) =   0.07
 AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
 TOTAL AREA(ACRES) =  226.90         PEAK FLOW RATE(CFS) =     167.40

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.77   FLOW VELOCITY(FEET/SEC.) =  23.63
 LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.28 =  9950.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE      1.27 TO NODE      1.28 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
 MAINLINE Tc(MIN) =  25.24
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.894
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 NATURAL POOR COVER
 "GRASS"                    D        7.80      0.20       1.00    98
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.20
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 SUBAREA AREA(ACRES) =    7.80      SUBAREA RUNOFF(CFS) =    4.87
 EFFECTIVE AREA(ACRES) =   234.70   AREA-AVERAGED Fm(INCH/HR) =  0.08
 AREA-AVERAGED Fp(INCH/HR) =  0.08  AREA-AVERAGED Ap =  1.00
 TOTAL AREA(ACRES) =   234.70       PEAK FLOW RATE(CFS) =     172.27

****************************************************************************
 FLOW PROCESS FROM NODE      1.28 TO NODE      1.29 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    940.00  DOWNSTREAM(FEET) =    700.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1400.00   CHANNEL SLOPE =  0.1714
 CHANNEL BASE(FEET) =    8.00   "Z" FACTOR =   1.500
 MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   3.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.878
 SUBAREA LOSS RATE DATA(AMC III):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       41.50      0.05       1.00     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.05
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.00
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    187.74
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  29.41
 AVERAGE FLOW DEPTH(FEET) =   0.70   TRAVEL TIME(MIN.) =   0.79
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  Tc(MIN.) =  26.03
  SUBAREA AREA(ACRES) =   41.50       SUBAREA RUNOFF(CFS) =   30.92
  EFFECTIVE AREA(ACRES) =  276.20     AREA-AVERAGED Fm(INCH/HR) =   0.07
  AREA-AVERAGED Fp(INCH/HR) =   0.07  AREA-AVERAGED Ap =   1.00
  TOTAL AREA(ACRES) =  276.20         PEAK FLOW RATE(CFS) =     199.87

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.73   FLOW VELOCITY(FEET/SEC.) =  30.12
  LONGEST FLOWPATH FROM NODE      1.00 TO NODE      1.29 = 11350.00 FEET.
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =    276.20  TC(MIN.) =     26.03
  EFFECTIVE AREA(ACRES) =     276.20  AREA-AVERAGED Fm(INCH/HR)=  0.07
  AREA-AVERAGED Fp(INCH/HR) =  0.07  AREA-AVERAGED Ap =  1.00
  PEAK FLOW RATE(CFS)    =    199.87
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

BAS
[909] 860-7777
BRYAN A. STIRRAT & ASSOCIATES
CIVIL AND ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE • DIAMOND BAR, CA 91765

JOB Olinda Alpha Landfill - Vehicle Expansion
SHEET NO. 1 OF 2
CALCULATED BY C.H.M DATE 01/08/2004
CHECKED BY _____ DATE _____
SCALE _____

Sediment Calculations

Criteria: $A_s = \frac{1.2\,Q_2}{V_s}$ (Erosion & Sediment Control Handbook)

Where: A_s - Area Of Water Surface Within The Basin

Q_2 - Peak Runnoff From 2-yr Storm

V_s - Settling Velocity Of A Particle

Basin A

Given: $Q_2 = 125.9$ cfs (Developed Condition)

$A_s = 30{,}250$ sf @ Elevation 610

$V_s = \frac{1.2\,(126)}{(30{,}250)} = 0.0050$ fps *

Per Table 8.1, The Basin Size Can Filter Out Particles Between Coarse Silt And Medium Silt

* The Sediment Basin Is Insufficient In Size To Remove The Target Particle Size, Medium Silt, By Itself. Therefore Erosion Control Devices, Such As Fiber Rolls, Will Be Installed During Construction To Prevent Sediment Loss.

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JOB OLINDA ALPHA LANDFILL - VERTICLE EXPANSION
SHEET NO. 2 OF 2
CALCULATED BY C.H.M. DATE 01/08/2004
CHECKED BY _____ DATE _____
SCALE _____

BASIN B

GIVEN: $Q_2 = 199.9$ (DEVELOPED CONDITION)

$A_s = 36,800$ SF

$V_s = \frac{1.2\,(200)}{36,800\ SF} = 0.0065$ FPS *

PER TABLE 8.1, BASIN B COULD SETTLE OUT COARSE SILT.

TABLE 8.1 Surface Area Requirements of Sediment Traps and Basins

Particle size, mm	Settling velocity, ft/sec (m/sec)	Surface area requirements, ft^2 per ft^3/sec discharge (m^2 per m^3/sec discharge)
0.5 (coarse sand)	0.19 (0.058)	6.3 (20.7)
0.2 (medium sand)	0.067 (0.020)	17.9 (58.7)
0.1 (fine sand)	0.023 (0.0070)	52.2 (171.0)
0.05 (coarse silt)	0.0062 (0.0019)	193.6 (635.0)
0.02 (medium silt)	0.00096 (0.00029)	1,250.0 (4,101.0)
0.01 (fine silt)	0.00024 (0.000073)	5,000.0 (16,404.0)
0.005 (clay)	0.00006 (0.000018)	20,000.0 (65,617.0)

LEGEND

- DRAINAGE TRIBUTARY AREA
- DRAINAGE SUBAREA
- 1.00 / 725 — NODE DESCRIPTION
- 4.3 AC — AREA IN ACRES
- PROPERTY LINE
- DIRECTION OF DRAINAGE
- 1020 — PROPOSED CONTOURS
- 1020 — EXISTING CONTOURS
- PROPOSED DAYLIGHT LINES
- FUTURE DRAINAGE CHANNEL

CALCULATIONS FOR CRITICAL REACHES

#1 TRAP CHAN
b=4'-5" D=37"
z=2 n=0.022
Q_{100} = 520 CFS
S=0.074
Q_{CAP} = 708 CFS
OK

#2 TRAP CHAN
b= 6' D=3'
Q_{100} = 100 CFS
S=0.05
Q_{CAP} = 694 CFS
OK

PROPERTY LINE
PERIPHERAL STORM DRAIN
RIDGE
EXISTING DRAIN
DETENTION BASIN "B"
DETENTION BASIN "A"
ACCESS ROAD
RELOCATED ACCESS ROAD
TOE OF SLOPE

4.3 AC; 8.5 AC; 8.4 AC; 3.6 AC; 2.6 AC; 9.0 AC; 11.7 AC; 5.1 AC; 20.2 AC; 4.8 AC; 2.0 AC; 7.1 AC; 26.0 AC; 8.5 AC; 16.44 AC; 20.4 AC; 44.5 AC; 29.1 AC; 24.1 AC; 4.9 AC; 27.9 AC; 20.0 AC; 41.5 AC; 18.6 AC; 37.7 AC; 16.7 AC; 7.8 AC; 9.6 AC; 7.3 AC; 3.4 AC; 31.1 AC; 39.4 AC; 31.3 AC

1.20/1380; 1.21/1232; 1.22/1220; 1.00/1410; 1.01/1380; 1.02/1360; 1.03/1350; 1.04/1235; 1.05/1145; 1.06/1000; 1.07/870; 1.08/730; 1.09/600; 1.10/1350; 1.11/1125; 1.12/1040; 1.13/930; 1.14/800; 1.23/1207; 1.24/1160; 1.25/1120; 1.26/1080; 1.27/1020; 1.28/940; 1.29/700

N

GRAPHIC SCALE
300 150 0 300 600
(IN FEET)

100 – YEAR RUNOFF SUMMARY TABLE

CONFLUENCE POINT	TOTAL AREA	TOTAL RUNOFF CFS
1.01	6.80	18.09
1.02	13.90	49.41
1.03	22.40	78.45
1.04	38.84	127.63
1.05	59.24	189.14
1.06	103.74	318.96
1.07	127.84	385.87
1.08	132.74	388.59
1.11	9.60	31.18
1.12	26.30	74.24
1.13	64.00	164.16
1.13	93.10	238.80
1.14	113.10	286.42
1.09	113.10	352.72
1.09	273.70	705.31
1.20	5.10	16.71
1.21	25.80	77.17
1.22	48.60	138.80
1.23	74.60	206.41
1.24	114.30	304.20 #1
1.25	162.20	417.47
1.26	197.60	482.86
1.27	208.30	499.18
1.28	234.70	555.75 #2
1.29	276.20	644.83

BASE TOPOGRAPHY DATE
OCTOBER 1, 2003

MARK	DATE	DESCRIPTION
		REVISIONS

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER — BRYAN A. STIRRAT — No. 22631 Exp. 12-31-05 — CIVIL — STATE OF CALIFORNIA

DATE

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CIVIL AND ENVIRONMENTAL ENGINEERS
1360 VALLEY VISTA DRIVE
DIAMOND BAR, CA. 91765
(909) 860-7777

RELOOC

OLINDA ALPHA LANDFILL

100-YEAR DEVELOPED CONDITION HYDROLOGY MAP

DESIGNED C.H.M.		SHEET
DRAWN J.P.J.	CHECKED A.C.R.	1
SCALE AS-SHOWN	DATE 5-2004	DRAWING NO. 24171DB.DWG	OF 1

Worksheet
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	5% Lower
Flow Element	Trapezoidal Cha
Method	Manning's Formı
Solve For	Discharge

Input Data		
Mannings Coeffic	0.026	
Slope	050000	ft/ft
Depth	3.00	ft
Left Side Slope	2.00	H : V
Right Side Slope	2.00	H : V
Bottom Width	6.00	ft

Results		
Discharge	694.33	cfs
Flow Area	36.0	ft²
Wetted Perim	19.42	ft
Top Width	18.00	ft
Critical Depth	4.68	ft
Critical Slope	0.007737	ft/ft
Velocity	19.29	ft/s
Velocity Head	5.78	ft
Specific Ener	8.78	ft
Froude Numb	2.40	
Flow Type	Supercritical	

BRYAN A. STIRRAT & ASSOCIATES
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Worksheet
Worksheet for Trapezoidal Channel

Project Description	
Worksheet	4.74% Lower
Flow Element	Trapezoidal Cha
Method	Manning's Formı
Solve For	Discharge

Input Data		
Mannings Coeffic	0.022	
Slope	047400	ft/ft
Depth	3.08	ft
Left Side Slope	2.00	H : V
Right Side Slope	2.00	H : V
Bottom Width	4.42	ft

Results		
Discharge	708.17	cfs
Flow Area	32.6	ft²
Wetted Perim	18.21	ft
Top Width	16.75	ft
Critical Depth	5.02	ft
Critical Slope	0.005554	ft/ft
Velocity	21.70	ft/s
Velocity Head	7.32	ft
Specific Energ	10.40	ft
Froude Numb	2.74	
Flow Type	Supercritical	

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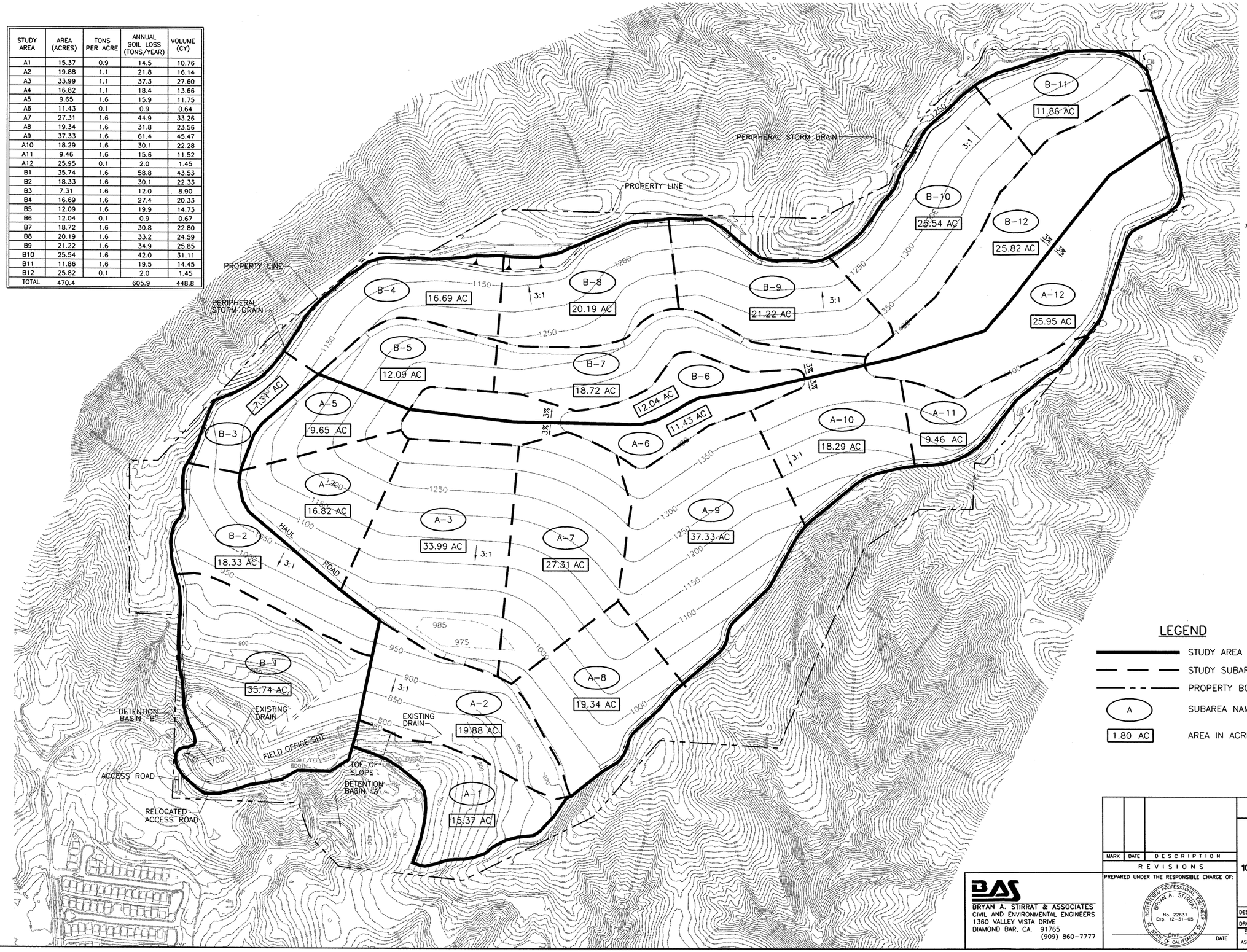
APPENDIX B

SOIL LOSS STUDY

STUDY AREA	AREA (ACRES)	TONS PER ACRE	ANNUAL SOIL LOSS (TONS/YEAR)	VOLUME (CY)
A1	15.37	0.9	14.5	10.76
A2	19.88	1.1	21.8	16.14
A3	33.99	1.1	37.3	27.60
A4	16.82	1.1	18.4	13.66
A5	9.65	1.6	15.9	11.75
A6	11.43	0.1	0.9	0.64
A7	27.31	1.6	44.9	33.26
A8	19.34	1.6	31.8	23.56
A9	37.33	1.6	61.4	45.47
A10	18.29	1.6	30.1	22.28
A11	9.46	1.6	15.6	11.52
A12	25.95	0.1	2.0	1.45
B1	35.74	1.6	58.8	43.53
B2	18.33	1.6	30.1	22.33
B3	7.31	1.6	12.0	8.90
B4	16.69	1.6	27.4	20.33
B5	12.09	1.6	19.9	14.73
B6	12.04	0.1	0.9	0.67
B7	18.72	1.6	30.8	22.80
B8	20.19	1.6	33.2	24.59
B9	21.22	1.6	34.9	25.85
B10	25.54	1.6	42.0	31.11
B11	11.86	1.6	19.5	14.45
B12	25.82	0.1	2.0	1.45
TOTAL	470.4		605.9	448.8



BASE TOPOGRAPHY DATE
OCTOBER 1, 2003

MARK	DATE	DESCRIPTION
REVISIONS		

PREPARED UNDER THE RESPONSIBLE CHARGE OF:

REGISTERED PROFESSIONAL ENGINEER BRYAN A. STIRRAT No. 22631 Exp. 12-31-05 CIVIL STATE OF CALIFORNIA

DATE

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RELOOC

OLINDA ALPHA LANDFILL

100-YEAR DEVELOPED CONDITION SOIL LOSS PLAN

DESIGNED C.H.M.			
DRAWN C.A.L.		CHECKED A.C.R.	
SCALE	DATE	DRAWING NO.	SHEET
AS-SHOWN	1-2004	440220B.DWG	1 OF 1

OLINDA ALPHA LANDFILL
SOIL LOSS ANALYSIS

AVERAGE DENSITY OF SOIL (PCF) = 100

STUDY AREA	AREA (ACRES)	R FACTOR	K FACTOR	SLOPE (%)	SLOPE LENGTH (FT)	LS FACTOR	C FACTOR	P FACTOR	TONS PER ACRE	ANNUAL SOIL LOSS (TONS/YEAR)	VOLUME (CY)
A1	15.37	50	0.28	0.25	160	7.5	0.03	0.30	0.9	14.5	10.76
A2	19.88	50	0.28	0.33	120	8.7	0.03	0.30	1.1	21.8	16.14
A3	33.99	50	0.28	0.33	120	8.7	0.03	0.30	1.1	37.3	27.60
A4	16.82	50	0.28	0.33	120	8.7	0.03	0.30	1.1	18.4	13.66
A5	9.65	50	0.28	0.33	120	8.7	0.03	0.45	1.6	15.9	11.75
A6	11.43	50	0.28	0.03	250	0.4	0.03	0.45	0.1	0.9	0.64
A7	27.31	50	0.28	0.33	120	8.7	0.03	0.45	1.6	44.9	33.26
A8	19.34	50	0.28	0.33	120	8.7	0.03	0.45	1.6	31.8	23.56
A9	37.33	50	0.28	0.33	120	8.7	0.03	0.45	1.6	61.4	45.47
A10	18.29	50	0.28	0.33	120	8.7	0.03	0.45	1.6	30.1	22.28
A11	9.46	50	0.28	0.33	120	8.7	0.03	0.45	1.6	15.6	11.52
A12	25.95	50	0.28	0.03	250	0.4	0.03	0.45	0.1	2.0	1.45
B1	35.74	50	0.28	0.25	160	8.7	0.03	0.45	1.6	58.8	43.53
B2	18.33	50	0.28	0.33	120	8.7	0.03	0.45	1.6	30.1	22.33
B3	7.31	50	0.28	0.33	120	8.7	0.03	0.45	1.6	12.0	8.90
B4	16.69	50	0.28	0.33	120	8.7	0.03	0.45	1.6	27.4	20.33
B5	12.09	50	0.28	0.33	120	8.7	0.03	0.45	1.6	19.9	14.73
B6	12.04	50	0.28	0.03	250	0.4	0.03	0.45	0.1	0.9	0.67
B7	18.72	50	0.28	0.33	120	8.7	0.03	0.45	1.6	30.8	22.80
B8	20.19	50	0.28	0.33	120	8.7	0.03	0.45	1.6	33.2	24.59
B9	21.22	50	0.28	0.33	120	8.7	0.03	0.45	1.6	34.9	25.85
B10	25.54	50	0.28	0.33	120	8.7	0.03	0.45	1.6	42.0	31.11
B11	11.86	50	0.28	0.33	120	8.7	0.03	0.45	1.6	19.5	14.45
B12	25.82	50	0.28	0.03	250	0.4	0.03	0.45	0.1	2.0	1.45
	470.4									***605.9***	***448.8***

APPENDIX L
SLOPE STABILITY EVALUATION OF THE PROPOSED LATERAL/VERTICAL EXPANSION

GeoLogic Associates
Geologists, Hydrogeologists and Engineers

May 11, 2004
Job No. 2004-022

Bryan A. Stirrat Associates
1360 Valley Vista Drive
Diamond Bar, CA 91765

Attention: Christine Arbogast

**SLOPE STABILITY EVALUATION OF
PROPOSED LATERAL/VERTICAL EXPANSION
OLINDA ALPHA LANDFILL
ORANGE COUNTY, CALIFORNIA**

INTRODUCTION

This letter report and attachments present the results of a stability evaluation performed by GeoLogic Associates (GLA) for the proposed lateral/vertical expansion of the Olinda Alpha Landfill. The proposed expansion would raise the landfill top deck from the currently permitted Elevation 1,300[1] to a proposed maximum of about Elevation 1,415; in addition, the landfill would be expanded up to about 400 feet laterally along parts of its north and northeast perimeter.

SCOPE OF WORK

The work that was completed for the project included the following:

- Review of prior static and seismic stability analyses conducted at the site;
- Review of recent construction activities as they relate to slope stability;
- Construction of cross sections for 3-D stability analyses at two landfill areas;
- Performance of 3-D static and pseudo-static stability analyses on proposed expansion slope configurations using the CLARA-W computer program;
- Performance of calculations to estimate potential seismic-induced permanent deformations of proposed slopes;
- Evaluation of the results of the analyses; and
- Preparation of this letter report.

[1] All elevations referenced in this report are in feet above mean sea level.

SITE GEOLOGY

The Olinda Alpha Landfill occupies two southwest draining canyons and the intervening ridge between them (see Figure 1). These canyons intersect a sequence of friable sandstones and interbedded silty shales or claystones of the Puente Formation, which are gently folded and locally cut by faults. As discussed in more detail below, claystone beds dipping out of slope play a significant role in slope stability at the site. Throughout the central area of the landfill property, beds typically dip between 15 and 25 degrees to the southwest. Near the southwest corner of the landfill property, three faults juxtapose different structural blocks. Two of the faults are branches of the Whittier Fault, and in the vicinity of these faults, bedding orientation changes abruptly, dipping 50 to 75 degrees to the north. Near the northeast end of Olinda Alpha Canyon, the sedimentary sequence is folded into a major antiform, which results in shallow (15-25 degree) northeasterly dips.

SLOPE STABILITY BACKGROUND

What follows is a brief summary of events and prior stability analyses which are relevant to this stability evaluation of the proposed lateral/vertical expansion.

In 1994, The Earth Technology Corporation, in cooperation with GLA, prepared a slope stability report titled "Stability Analysis Report, Master Grading Plans," which analyzed the conceptual design for the vertical expansion of the Olinda Alpha Landfill to Elevation 1,300. As a part of this expansion, the ridge (Center Ridge) between the Olinda and Olinda Alpha Landfills was to be excavated so that the two separate landfills could be merged into one.

The combined landfill was then to be raised to design grades up to approximately Elevation 1,300. As presented in the original design report, the excavated Center Ridge was originally proposed to be lined, and as a result, substantial interim stabilization buttressing was recommended. Prior to excavation of the Center Ridge, however, a liner waiver was granted by the Santa Ana Regional Water Quality Control Board (RWQCB) and, as a result, the nature and extent of the interim buttressing requirements were reduced. During construction of the Center Ridge, a number of relatively small and non-critical landslides occurred within the temporary back-cuts of the Center Ridge excavation. These failures typically occurred along claystone beds and were mitigated by flattening the excavation or constructing relatively small stabilizing buttresses. A trenching investigation for one such landslide just north of the site scales found the claystone bed dip angle to be about 13 to 14 degrees out of slope (Earth Tech, 2000a).

These interim construction failures allowed for additional back-calculations of the shear strength of claystone beds within the Puente Formation on the site. In the end, the more recently back-calculated strength parameters (Earth Tech, 2000a) were in strong agreement with the shear strength values used by Earth Tech/GLA in the 1994 Slope Stability Report (i.e., friction angle, $\varphi = 11$ degrees, and cohesion, $c = 50$ psf), providing an additional level of confidence in the nature of these critical materials.

The excavation of the Center Ridge Area was completed in late 2000, and refuse has subsequently been placed in this area.

MATERIAL PROPERTIES AND STRATIGRAPHY

Materials modeled in the slope stability evaluation included refuse fill, compacted buttress soil, and claystone and sandstone of the Puente Formation. Table 1 below presents material properties used in this stability evaluation. These parameters were based on laboratory analyses, back-calculations, and experience with similar materials. Material properties for the refuse fill were estimated based on a review of the pertinent literature.[2] Since the claystone beds at the site are critical to slope stability, the parameters used for this material were the same as were used by Earth Tech/GLA in the 1994 report titled, "Stability Analysis Report, Master Grading Plans" (i.e., slightly lower than were back-calculated from more recent construction slope failures).

Table 1
Material Properties

Material	Unit Weight (pcf)	Friction Angle (deg.)	Cohesion (psf)
Refuse Fill	72	33	100
Compacted Buttress Soil	120	28.5	500
Sandtone Puente Formation	130	34	400
Silty Shale/Claystone Puente Formation	125	11	50

The areal extent of refuse placement was determined during an investigation prior to the recent construction (Rust, 1997). Since neither refuse fill thickness data nor the site-specific pre-development surveys of canyon topography were available, refuse fill depth was estimated by comparing current topography with elevation contours generated from USGS Digital Elevation Model (DEM) for the Yorba Linda, California 7.5 Minute Quadrangle (USGS, 2001). This DEM was generated from the 7.5 Minute topographic map of the same name, which is dated 1964 and was photorevised in 1981 (USGS, 1964). The 1964/1981 pre-landfill topography thus generated is shown on Figure 2. The depth and extent of the soil buttress on the south-facing slope near the site scales was determined from as-built surveys completed in 1998, after the buttress back-cut excavation, and in 2000, after construction of the buttress.

Since the claystone is interbedded with sandstone at the site, accurately determining the stratigraphy for a given slope is not practical. As a result, numerous slope stability runs were performed assuming a range of worst-case claystone geometrics, including the assumption of claystone beds dipping from 10 to 14 degrees out of slope and situated over a range of elevations. Since claystone beds dipping steeper than 14 degrees would

[2] Kavazanjian, 1995; Singh and Murphy, 1990.

not generally be exposed in topographically lower slopes, they are expected to be more stable, and were not analyzed.

GROUNDWATER CONDITIONS

Groundwater equipotential contour lines developed for the site from monitoring well data consistently show flow from north to south towards the Whittier Fault, as shown on Figure 3. Locally, especially along the ridge tops surrounding the landfill property, the groundwater flow direction is away from the ridge tops towards the adjacent canyons. The groundwater elevation contours shown in Figure 3 were used in the development of the slope stability model cross-sections, as discussed below.

SEISMICITY AND SEISMIC PARAMETERS

In order to determine the maximum horizontal acceleration (MHA) at the site from the Maximum Credible Earthquake (MCE), a deterministic search was performed using EQFAULT (Blake, 2000) using the site latitude/longitude coordinates (see Attachment 2). The search was performed using several applicable attenuation relationships, and the most conservative result (i.e. maximum MHA's) is presented in Table 2 below for the seven most critical earthquake events.

Table 2
Seismic Parameters

Fault	Approximate Distance From Site (miles)	(km)	Maximum Credible Earthquake Magnitude[1] (M_w)	Maximum Horizontal Acceleration[2] (g)
Whittier	0.6	1.0	6.8	0.748
Chino-Central Ave. (Elsinore)	7.7	12.4	6.7	0.533
San Jose	7.5	12.1	6.5	0.355
Elysian Park Thrust	8.4	13.5	6.7	0.340
Sierra Madre	13.7	22.1	7.0	0.235
Cucamonga	14.7	23.7	7.0	0.220
Compton Thrust	13.7	22.0	6.8	0.219

[1] Moment Magnitude
[2] Based on rock attenuation relationship by Abrahamson & Silva (1995b/1997)

An MCE of 6.8 and corresponding MHA of 0.75 were used in the seismic displacement analysis (see below for further discussion).

ANALYTICAL METHOD

Static and Pseudo Static 3-D Analyses

Because of the complex topography and the strong influence of the claystone beds on slope stability of the site, GLA used the three-dimensional (3-D) CLARA-W slope stability computer program (O. Hungr Geotechnical Research, 2003) to evaluate the proposed lateral/vertical expansion. CLARA-W is based on an extension of Bishop's Simplified Method of Slices to three dimensions using columns in lieu of slices. The program uses a series of parallel, 2-D cross sections to model complex 3-D geometry of slopes with several material layers and piezometric surfaces and then evaluates potential rotational and non-rotational failure surfaces. For the analyses reported here, rotational and composite rotational-wedge type failure surfaces were considered the most likely failure modes and were thus analyzed. Both static and pseudo-static 3-D analyses were performed. In the latter, a horizontal earthquake acceleration was applied at the base of each column.

Seismic Displacement Analysis

California Title 27 requires that further analysis should be done to demonstrate that the proposed design will be functional during the Maximum Probable Earthquake (MPE) if the pseudo-static analysis indicates a factor-of-safety less than 1.5. The Santa Ana RWQCB has adopted the more stringent Maximum Credible Earthquake (MCE) standard for design. Accordingly, the procedure developed by Bray and Rathje (1998) was used to estimate seismic-induced permanent displacement during the MCE. This procedure is based on the one described by Newmark (1965) for determining displacement of a rigid block resting on a sliding plane subjected to earthquake-type accelerations. This procedure is based on the premise that the sliding block will undergo displacement only during periods when the maximum ground acceleration (k_{max}) exceeds the yield acceleration (k_y) for the sliding block. As a result, no displacements occur when k_y is greater than k_{max} (i.e., $k_y/k_{max} > 1$). Bray and Rathje refined the procedure for solid waste landfills to incorporate the dynamic response characteristics of the waste fill, and the intensity, frequency content, and duration of ground motion. The Bray and Rathje procedure yields results that are consistent with the observed performance of landfills during recent earthquakes. For the Olinda Alpha Landfill site, the MCE was considered to be a M 6.8 earthquake event on the nearby (~ 0.6 miles) Whittier Fault, with a corresponding peak horizontal acceleration of 0.75 g.

ANALYTICAL RESULTS

3-D Slope Stability Analyses

Based on slope orientation and site stratigraphy, 3-D slope stability analyses were performed at two critical areas: the highest, southern-facing landfill slope for the vertical expansion and the northeastern-facing natural slope abutting the proposed lateral expansion at the northeastern portion of the site (see Figures 4 through 6). In order to

find the minimum factor-of-safety for a given case, potential failure surfaces were generally constrained so as not to pass through the sandstone beneath a potential claystone bed.

Since the proposed expansion would raise the landfill from the currently permitted Elevation 1,300 to a proposed maximum at about Elevation 1,415, 3-D stability analyses were performed to search for critical potential failure surfaces at the southern-facing slope that daylight at either the toe of the proposed vertical expansion (i.e., the existing Elevation 1,300-foot permitted grade) or at the top of the proposed grade (i.e., about Elevation 1,415). The critical factors-of-safety for the southern-facing slope varied from approximately 1.66 to 2.63; plan and section views of 3-D failure surfaces for this area are presented in Figures 4 and 5. A complete summary of most critical analysis cases is presented in Table 3 below.

The lateral expansion slope at the northeastern portion of the site was only analyzed for the proposed grade since the lower permitted grades do not overly the critical failure surface. The critical factor-of-safety for this slope was approximately 1.67; plan and section views of the 3-D failure surface for this area are presented in Figure 6.

Table 3
Summary of 3-D Slope Stability Analyses

File	Factor-of-Safety (FS)	Seismic Yield Coeffi-cient	Cross-Section at Center of Potential Failure Surface	Case
South-Facing Landfill Slope				
Olinda_AX1-1670b.CLW	2.17	0.24	A1X15	Daylight at Permit Grade; composite circular-wedge failure constrained to not pass below plane containing claystone bed
Olinda_AX1-1674s03.CLW	2.34	0.30	A1X15	Daylight at Permit Grade; circular failure
Olinda_AX1-1673eP01.CLW	**1.66**	**0.15**	A1X19	Daylight at Permit Grade; composite circular-wedge failure constrained to not pass below plane containing claystone bed
Olinda_AX1-1674jx3e.CLW	2.33	0.29	A1X19	Daylight at Permit Grade; circular failure
Olinda_AX1-1674sx1.CLW	2.48	0.35	A1X15	Daylight at Proposed Grade; circular failure
Olinda_AX1-1670a.CLW	2.37	0.28	A1X15	Daylight at Proposed Grade; composite circular-wedge failure constrained to not pass below plane containing claystone bed
Olinda_AX1-1674jx3.CLW	2.59	0.35	A1X19	Daylight at Proposed Grade; circular failure
Olinda_AX1-1674jx6.CLW	2.63	0.37	A1X19	Daylight at Proposed Grade; circular failure constrained to pass through toe of Refuse Fill
Olinda_AX1-1673e.CLW	1.70	0.16	A1X19	Daylight at Proposed Grade; constrained to not pass below plane containing claystone bed
Northeastern-Facing Natural Slope				
Olinda_A5X-1205.CLW	1.67	0.15	A5X5	Composite circular-wedge failure

Complete graphical results of the CLARA-W 3-D slope stability analyses showing model cross sections, piezometric surfaces, factor-of-safety, and failure surfaces are presented in Attachment 1.

Seismic Displacement Analysis

An estimate of potential seismic-induced permanent displacements was calculated, as described above, for the most critical analysis section and case: a composite circular-wedge potential failure surface centered on CLARA-W model cross section A1X19 and daylighting at the Permit Grade for the southern-facing landfill slope (*static FS = 1.66; k_y = 0.15*). As a result of these analyses, seismic displacements of this refuse slope during the MCE are anticipated to be less than ½ inch (see Attachment 2).

CONCLUSIONS AND RECOMMENDATIONS

The slope stability of the proposed lateral/vertical expansion of the Olinda Alpha Landfill has been analyzed by GLA and found to be acceptable; that is, all factors-of-safety were greater than 1.5 and seismic displacements were found to be within acceptable limits.

As discussed above, the location and orientation of claystone beds strongly influence the stability of slopes at the site. Fortunately, recent construction activities which exposed these beds on the southern-facing landfill slopes increased our knowledge of both the strength and location of the claystone beds in this area. While the strength properties of this critical material at other areas of the site are likely to be similar to that already encountered, data on the location and orientation of claystone beds along parts of the north and northeast perimeter of the site is limited. Prior to construction of the lateral expansion, we recommend that a supplementary subsurface investigation be performed in this area and subsequent slope stability analyses be conducted to verify the conclusions of this stability evaluation.

CLOSURE

This report is based on the limited study described herein. If the proposed grading plan for stockpiled soil varies in concept significantly from those shown in this evaluation, GLA may need to reassess stability conditions. In addition, GeoLogic Associates should be notified if conditions are found to differ from those described in this report since this situation may require a re-evaluation of the conclusions and recommendations included herein.

This report was prepared in accordance with generally accepted geologic, geotechnical and hydrogeologic practices and makes no warranties, either express or implied, as to the professional advice or data included in it.

This report has not been prepared for use by parties and projects other than those named or described herein. It may not contain sufficient information for other parties or other purposes.

GeoLogic Associates

Robbie Warner, PE
Senior Engineer

Gary L. Lass, CEG
President

Attachments:

Figure 1 – Site Geology
Figure 2 – Site Plan with Pre-Landfill Topography
Figure 3 – August 2003 Groundwater Contours
Figure 4 – South-Facing Slope: Potential Failures Daylighting at Permit Grade
Figure 5 – South-Facing Slope: Potential Failures Daylighting at Proposed Grade
Figure 6 – Potential Failures in Northeast-Facing Slope

Attachment 1 – CLARA-W 3-D Stability Analysis
Attachment 2 – Seismic Displacement Analysis

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FIGURES

LEGEND

MATERIALS

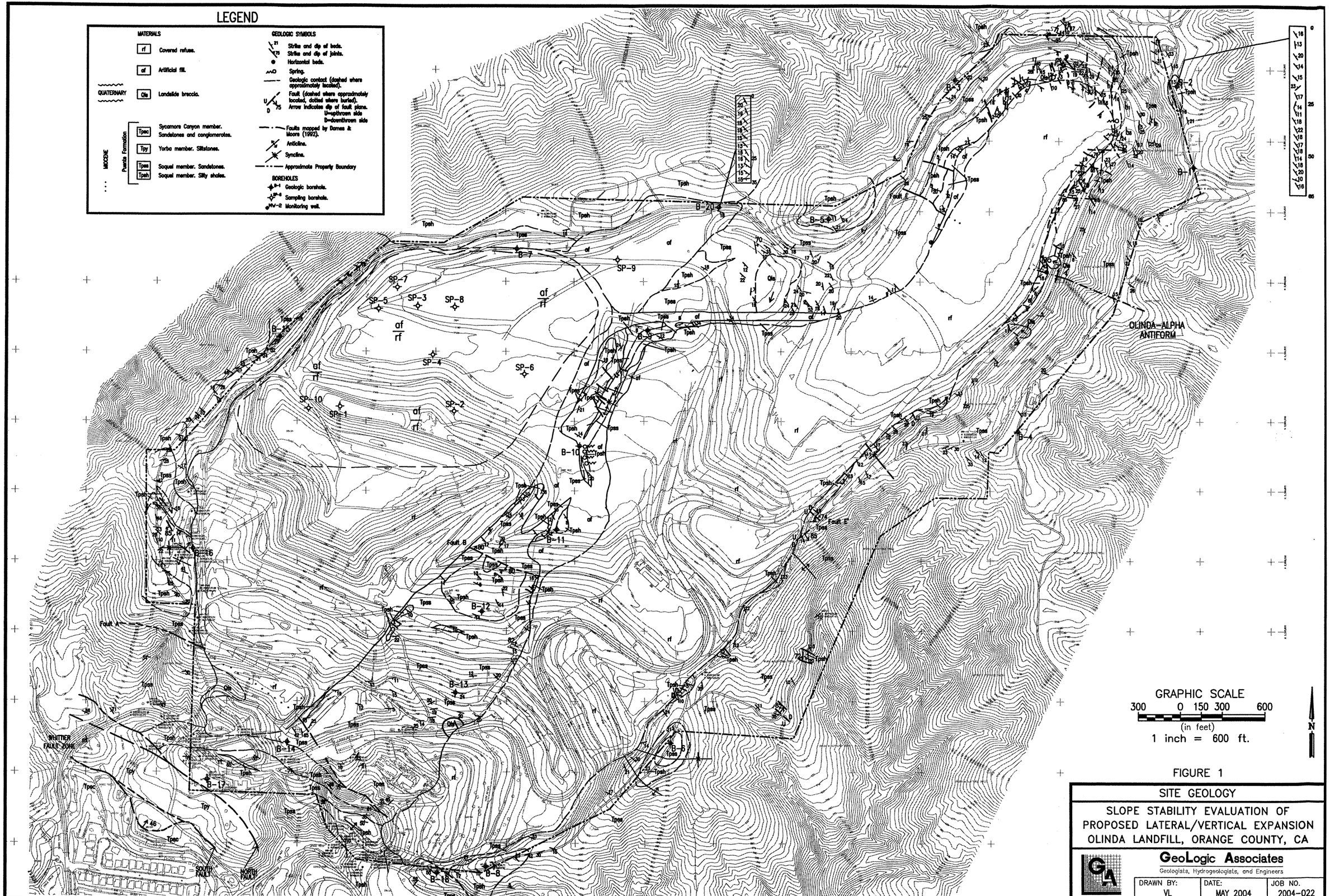
- rf — Covered refuse.
- af — Artificial fill.
- QUATERNARY — Qls — Landslide breccia.
- MIOCENE — Puente Formation
  - Tpsc — Sycamore Canyon member. Sandstones and conglomerates.
  - Tpy — Yorba member. Siltstones.
  - Tpss — Soquel member. Sandstones.
  - Tpsh — Soquel member. Silty shales.

GEOLOGIC SYMBOLS

- Strike and dip of beds.
- Strike and dip of joints.
- Horizontal beds.
- Spring.
- Geologic contact (dashed where approximately located).
- Fault (dashed where approximately located, dotted where buried). Arrow indicates dip of fault plane. U=upthrown side D=downthrown side
- Faults mapped by Domes & Moore (1992).
- Anticline.
- Syncline.
- Approximate Property Boundary

BOREHOLES

- B-1 Geologic borehole.
- SP-1 Sampling borehole.
- MW-2 Monitoring well.



GRAPHIC SCALE
300 0 150 300 600
(in feet)
1 inch = 600 ft.

N

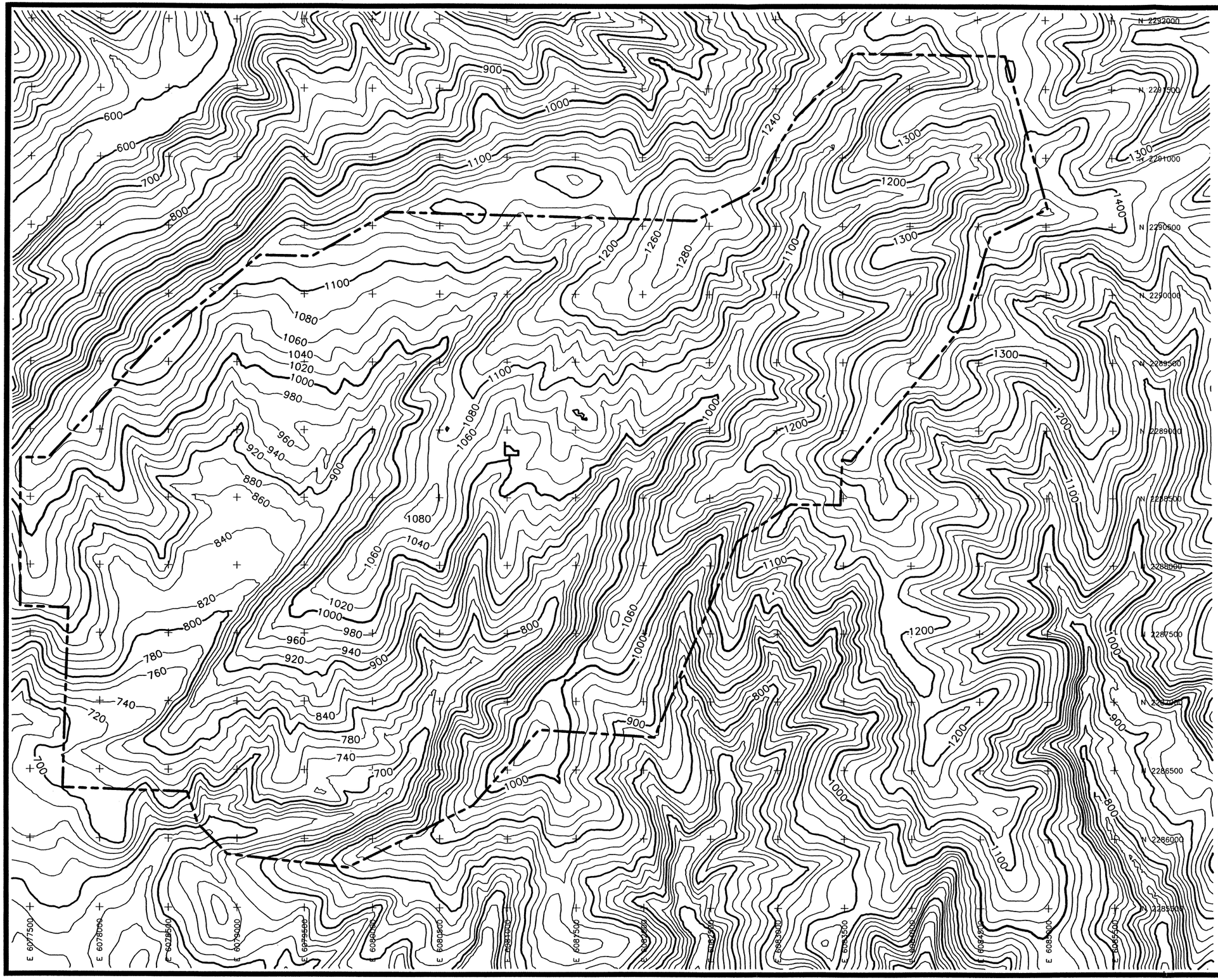
FIGURE 1

SITE GEOLOGY

SLOPE STABILITY EVALUATION OF
PROPOSED LATERAL/VERTICAL EXPANSION
OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	MAY 2004	2004-022



LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- PRE-LANDFILL GROUND SURFACE CONTOUR

SOURCE: USGS, 1964

N

GRAPHIC SCALE

700 0 350 700 1400

(IN FEET)

1 inch = 700 ft.

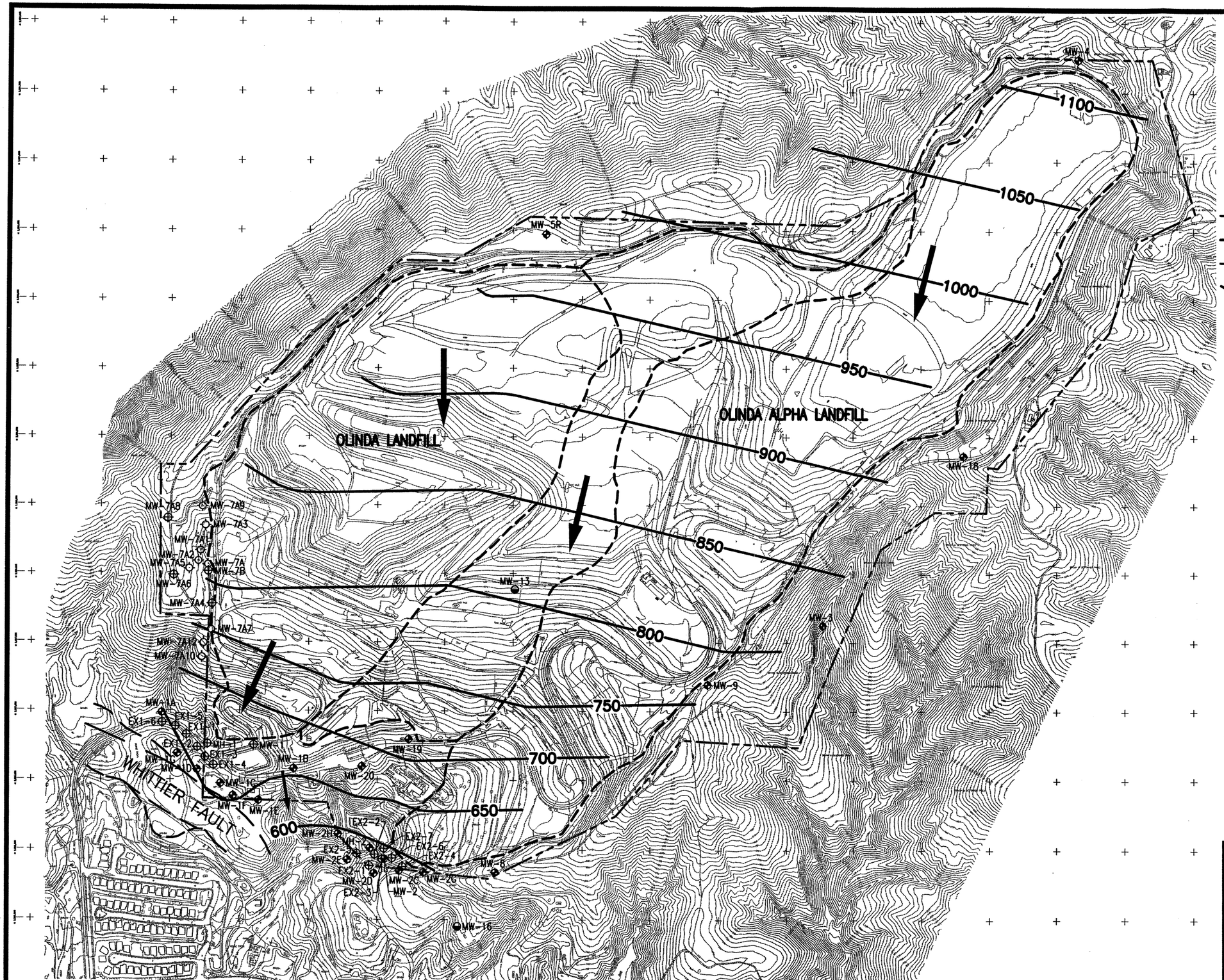
FIGURE 2

SITE PLAN WITH PRE-LANDFILL TOPOGRAPHY

SLOPE STABILITY EVALUATION OF
PROPOSED LATERAL/VERTICAL EXPANSION
OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	MAY 2004	2004-022



LEGEND:

- GROUNDWATER MONITORING WELL SCREENED IN THE UPPERMOST GROUNDWATER BODY
- GROUNDWATER EXTRACTION WELL SCREENED IN THE UPPERMOST GROUNDWATER BODY
- GROUNDWATER EXTRACTION WELL SCREENED IN PERCHED GROUNDWATER (ABOVE THE UPPERMOST GROUNDWATER BODY)
- ABANDONED GROUNDWATER MONITORING WELL
- APPROXIMATE LOCATION OF WHITTIER FAULT
- APPROXIMATE WASTE MANAGEMENT UNIT BOUNDARY
- APPROXIMATE PROPERTY BOUNDARY
- 900 — UPPERMOST GROUNDWATER BODY GROUNDWATER SURFACE ELEVATION CONTOUR AS OF 8/5/2003 (FEET ABOVE MEAN SEA LEVEL)
- APPROXIMATE GROUNDWATER FLOW DIRECTION IN THE UPPERMOST GROUNDWATER BODY

SOURCE: GEOSYNTEC, SEPTEMBER 2003

N

GRAPHIC SCALE

700 0 350 700 1400

(IN FEET)

1 inch = 700 ft.

FIGURE 3

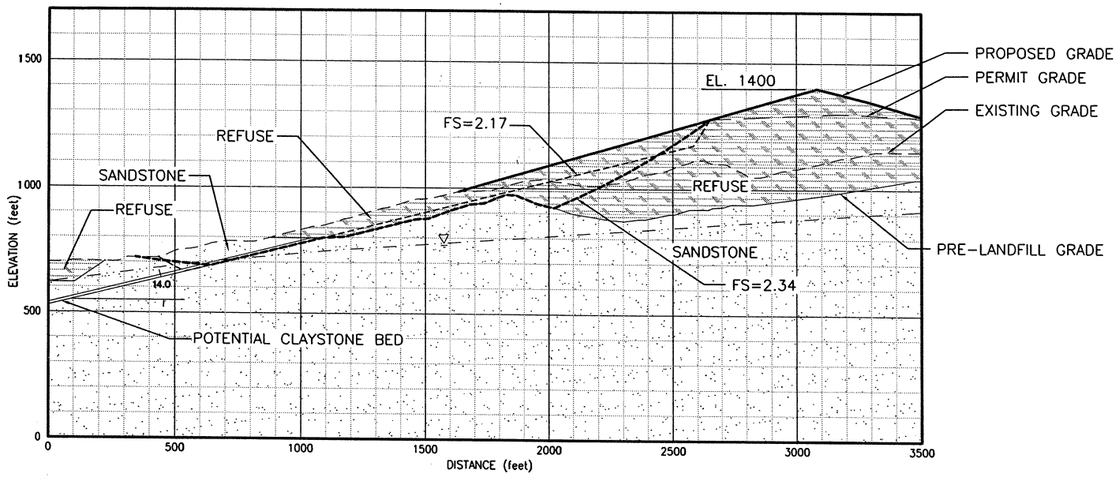
AUGUST 2003 GROUNDWATER ELEVATION CONTOURS

SLOPE STABILITY EVALUATION OF PROPOSED LATERAL/VERTICAL EXPANSION OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates

Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	MAY 2004	2004-022



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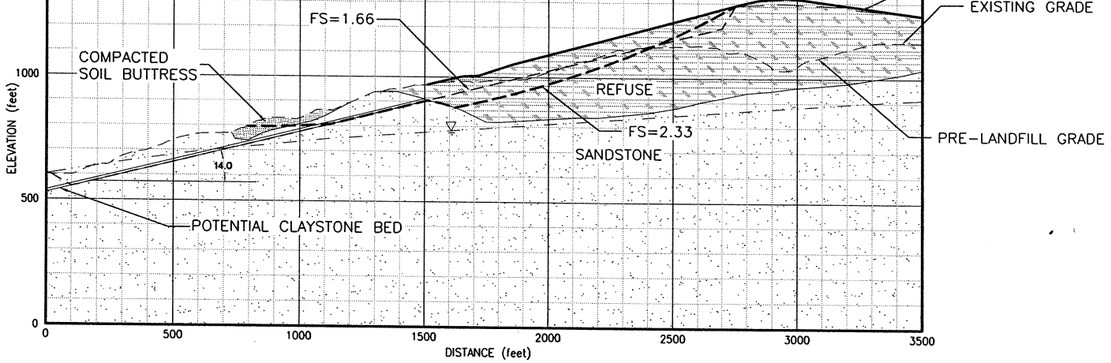

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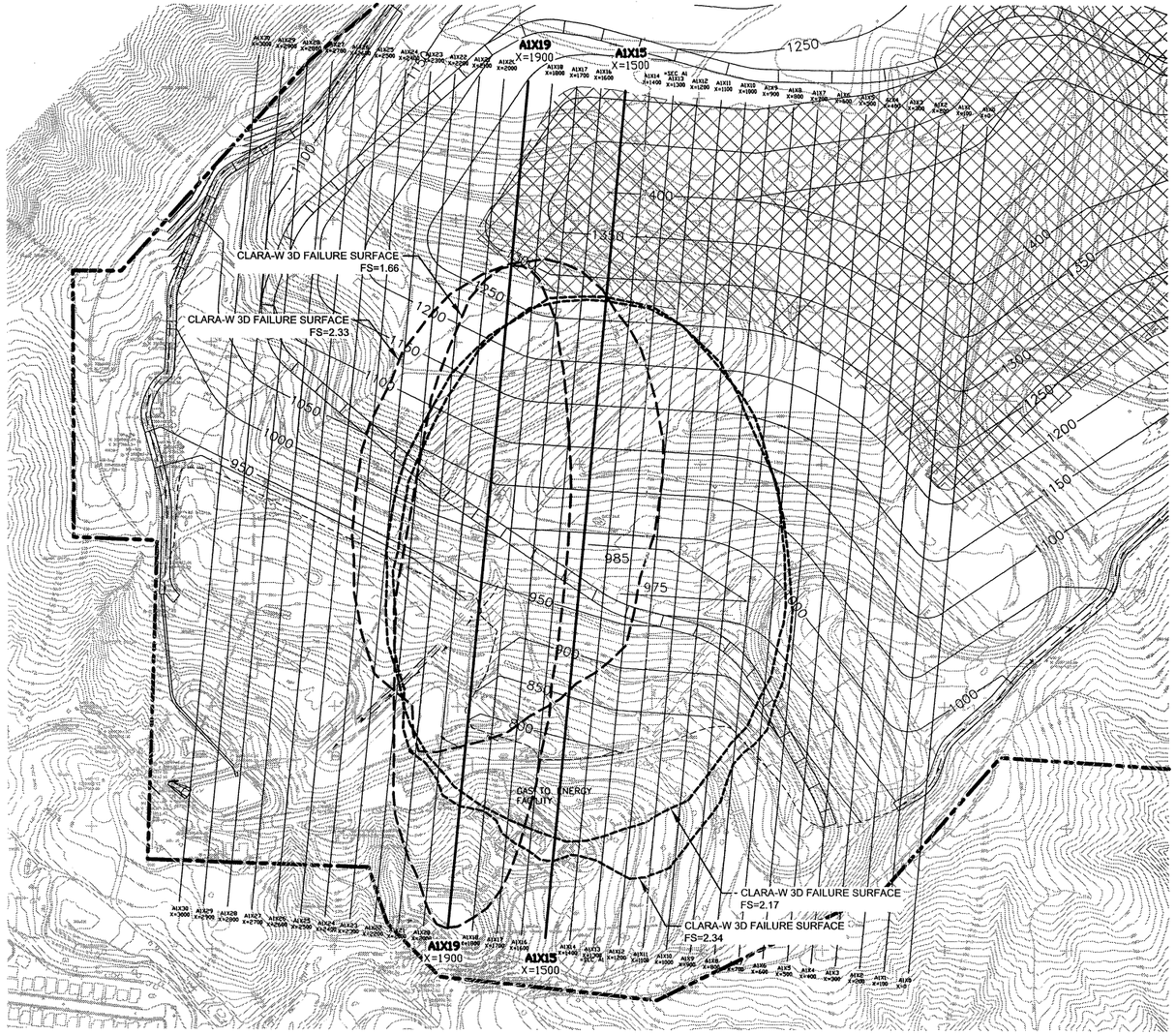


LEGEND

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3-D SLOPE STABILITY ANALYSIS; FACTOR-OF-SAFETY (FS) AS SPECIFIED

A1X19 X=1900 / A1X19 X=1900 — CLARA-W CROSS-SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

APPROXIMATE PROPERTY BOUNDARY

GRAPHIC SCALE
300 0 150 300 600
(in feet)
1 inch = 600 ft.

N

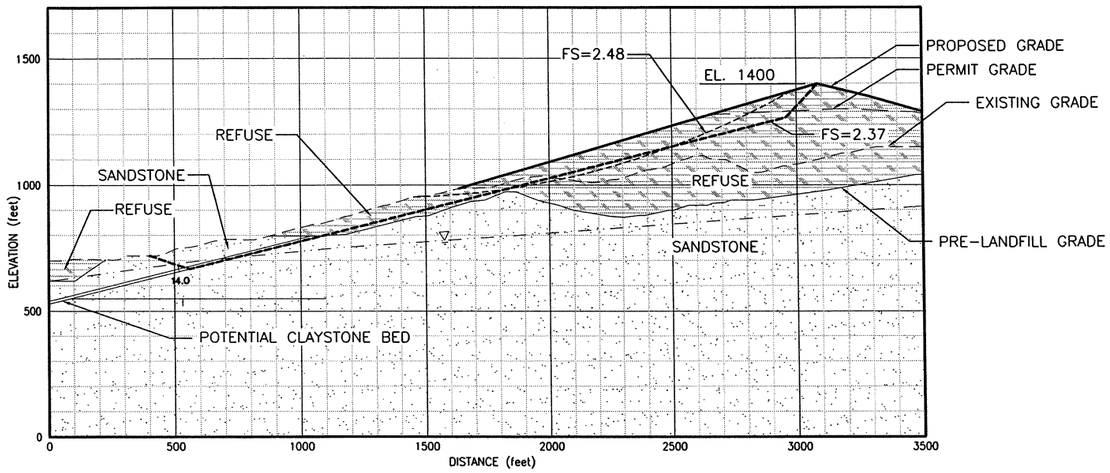
FIGURE 4

POTENTIAL FAILURES AT PERMIT GRADE IN SOUTH-FACING SLOPE

SLOPE STABILITY EVALUATION OF PROPOSED LATERAL/VERTICAL EXPANSION OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	MAY 2004	2004-022



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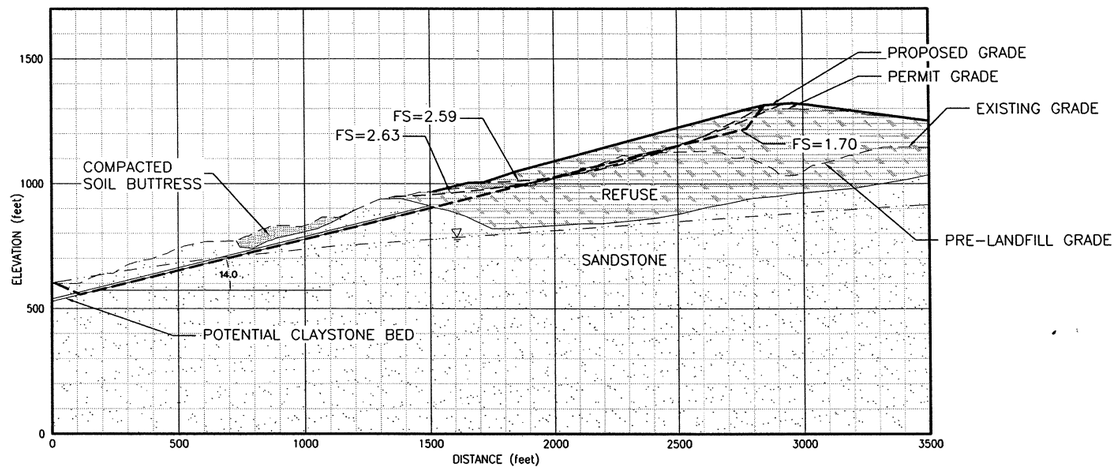

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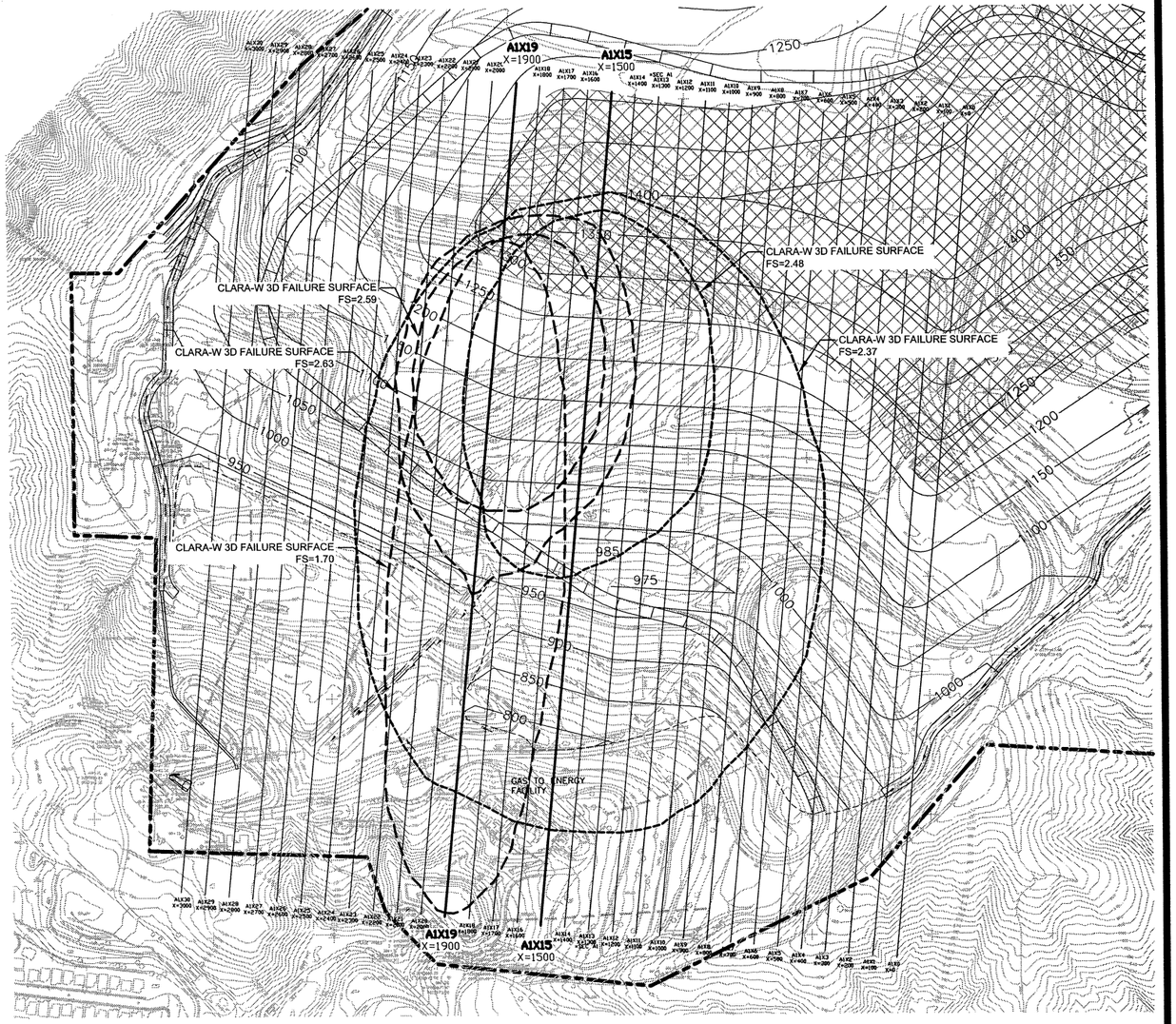


LEGEND

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3-D SLOPE STABILITY ANALYSIS; FACTOR-OF-SAFETY (FS) AS SPECIFIED

A1X19
X=1900
A1X19
X=1900

CLARA-W CROSS-SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

APPROXIMATE PROPERTY BOUNDARY

GRAPHIC SCALE
300 0 150 300 600
(in feet)
1 inch = 600 ft.

N

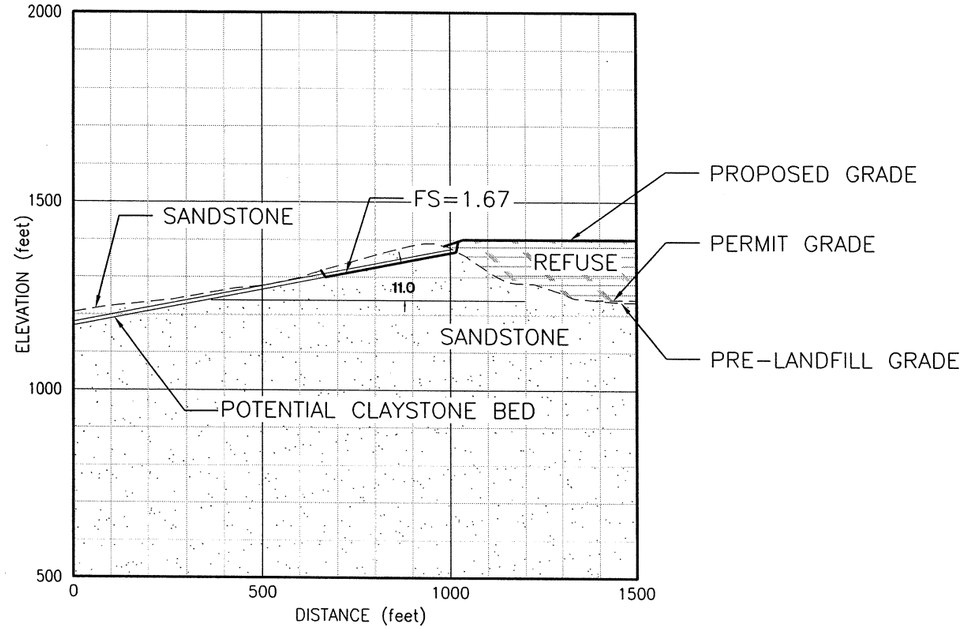
FIGURE 5

POTENTIAL FAILURES AT PROPOSED GRADE IN SOUTH-FACING SLOPE

SLOPE STABILITY EVALUATION OF PROPOSED LATERAL/VERTICAL EXPANSION OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

DRAWN BY:	DATE:	JOB NO.
VL	MAY 2004	2004-022



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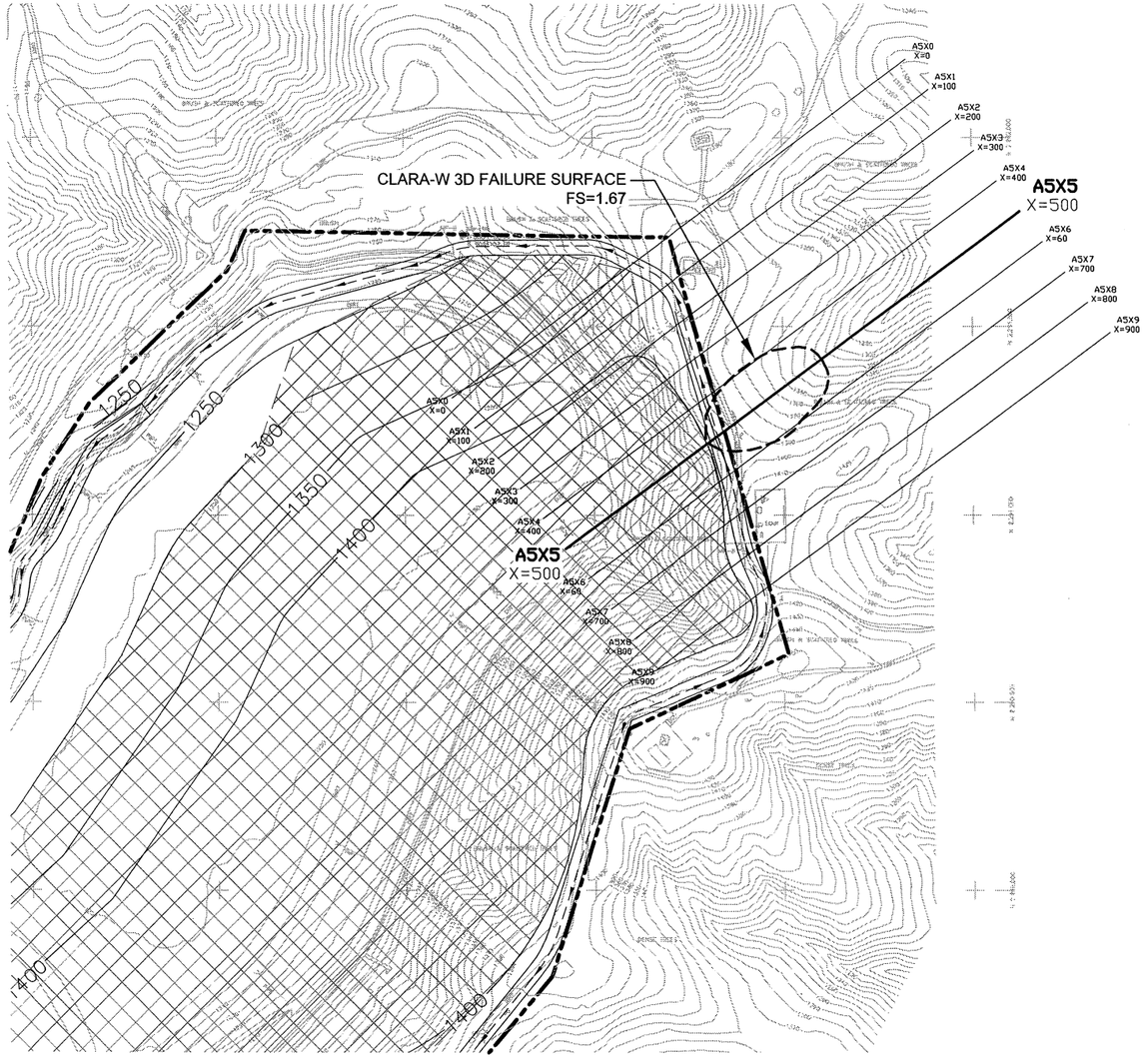

PROPOSED GRADE PLAN

LEGEND

PERIMETER/DAYLIGHT LINE OF ELLIPSOIDAL FAILURE SURFACE FROM 3-D SLOPE STABILITY ANALYSIS; FACTOR-OF-SAFETY (FS) AS SPECIFIED

A5X5 X=500

CLARA-W CROSS-SECTION LOCATION

EXTENT OF PROPOSED VERTICAL/HORIZONTAL EXPANSION

APPROXIMATE PROPERTY BOUNDARY

GRAPHIC SCALE
200 0 100 200 400
(in feet)
1 inch = 400 ft.

N

FIGURE 6

POTENTIAL FAILURES IN NORTHEAST-FACING SLOPE

SLOPE STABILITY EVALUATION OF PROPOSED LATERAL/VERTICAL EXPANSION OLINDA LANDFILL, ORANGE COUNTY, CA

GeoLogic Associates
Geologists, Hydrogeologists, and Engineers

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VL	MAY 2004	2004-022

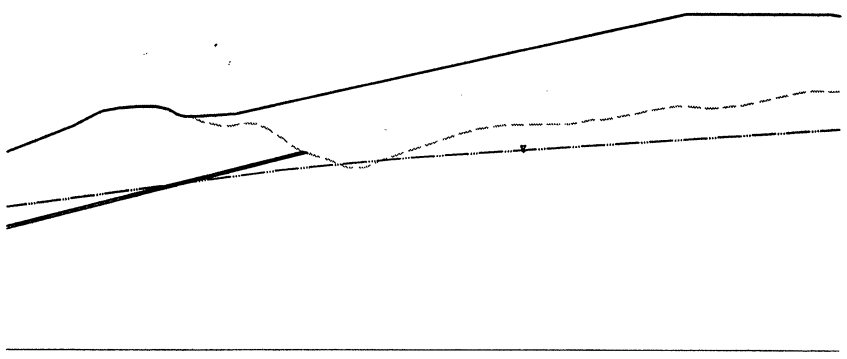
ATTACHEMENT 1

CLARA-W 3-D STABILITY ANALYSIS

3/22/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A1X -- FINALIZED FOR CLARA; LOWER 14 DEGREE DIP CLAYSTONE BED BY 20' NORMAL TO BED

A1X0



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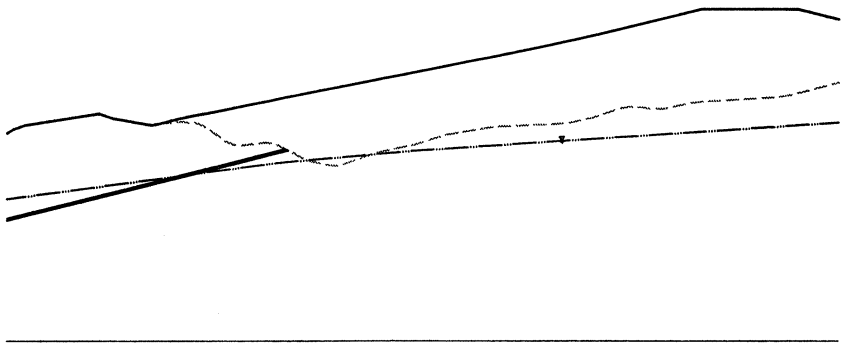

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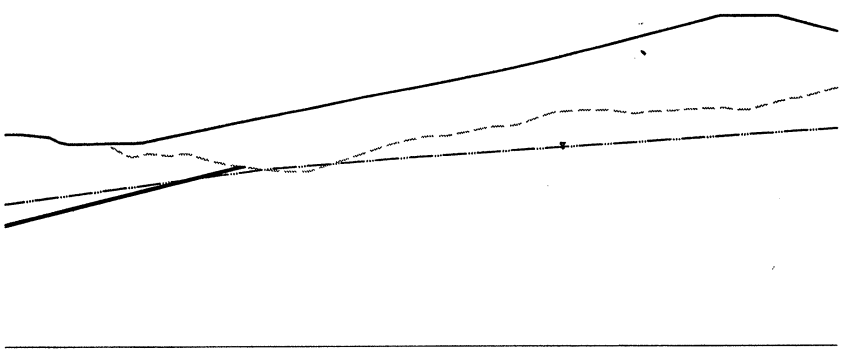

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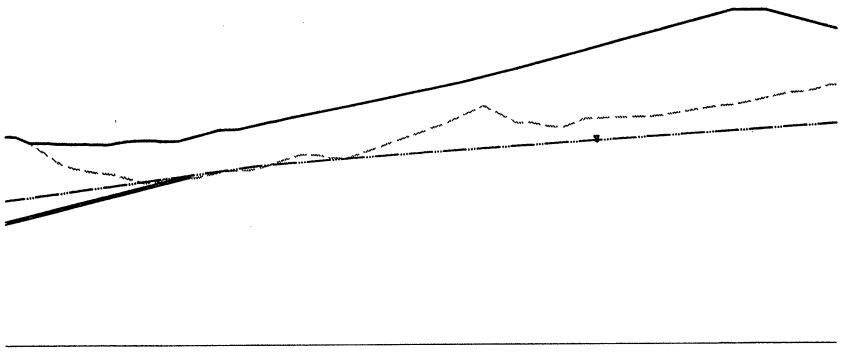

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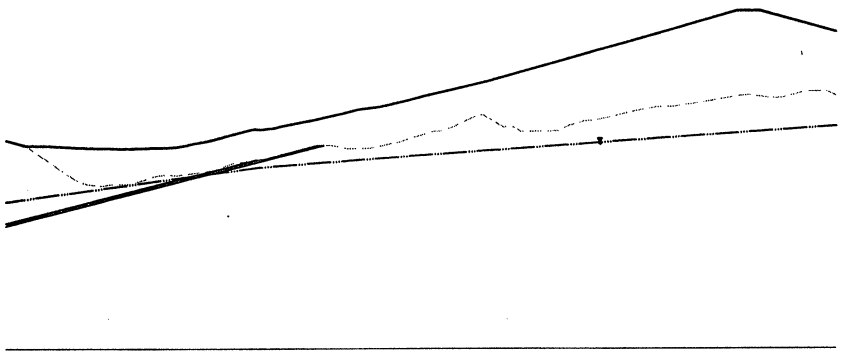

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3/22/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A1X -- FINALIZED FOR CLARA; LOWER 14 DEGREE DIP CLAYSTONE BED BY 20' NORMAL TO BED

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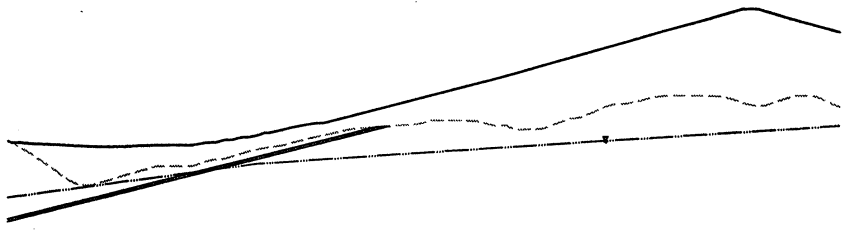

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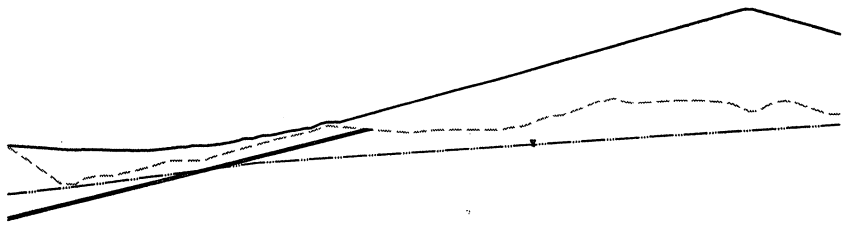

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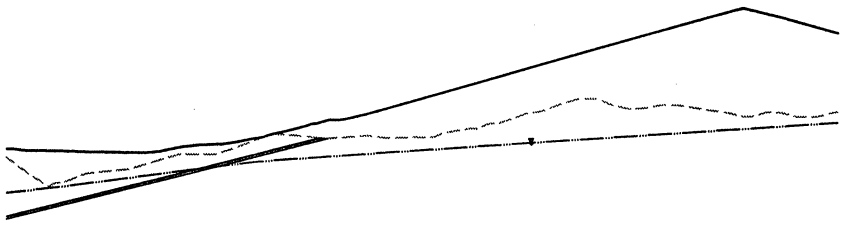

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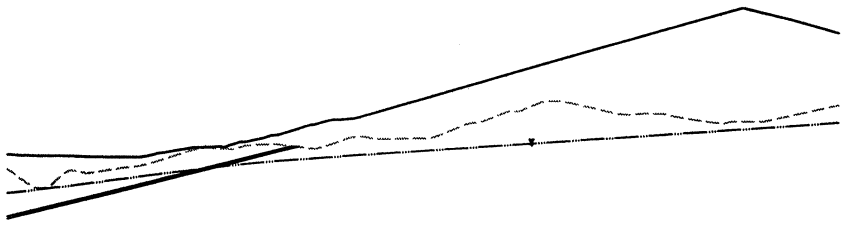

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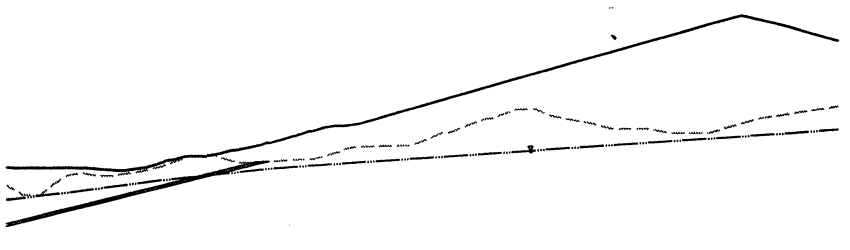

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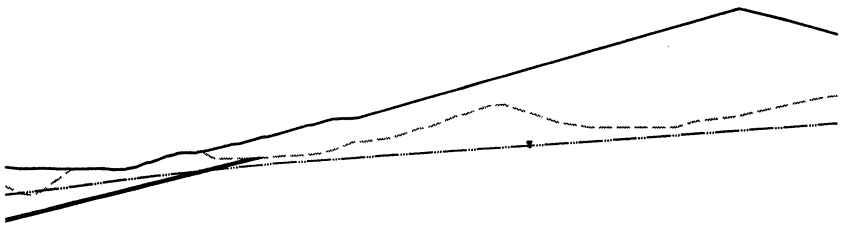

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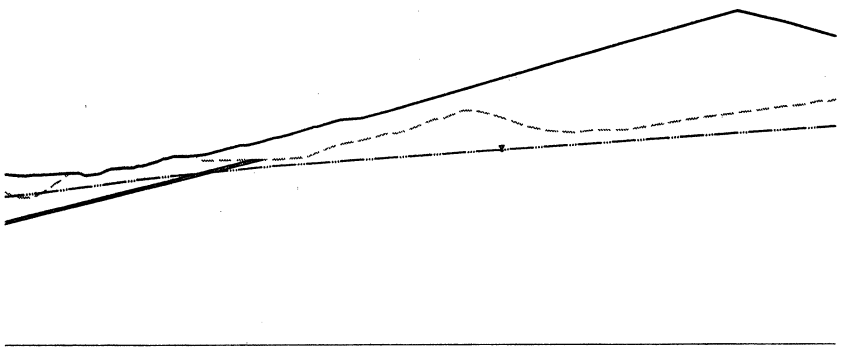
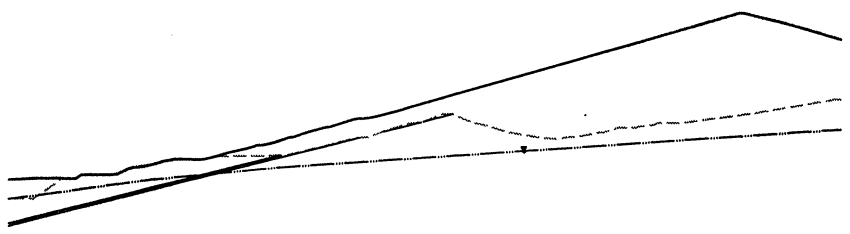


3/22/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A1X -- FINALIZED FOR CLARA; LOWER 14 DEGREE DIP CLAYSTONE BED BY 20' NORMAL TO BED

A1X15



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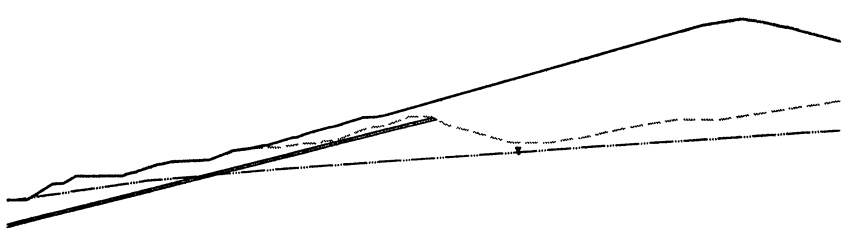

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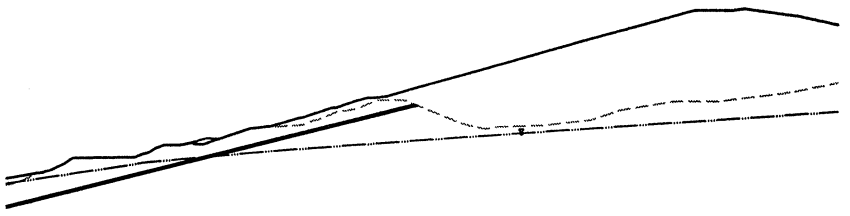

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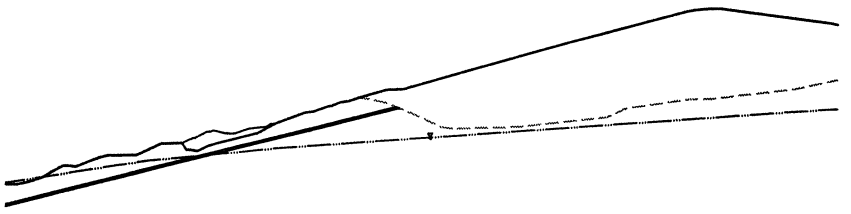
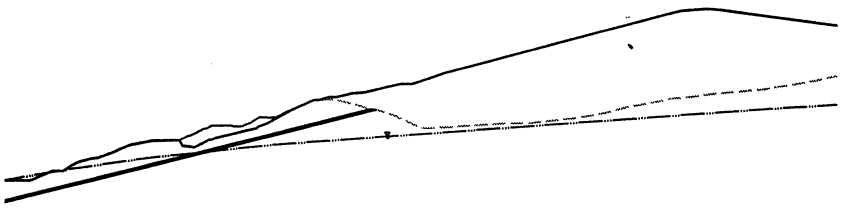
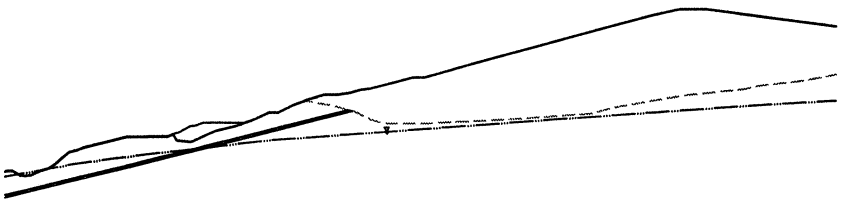


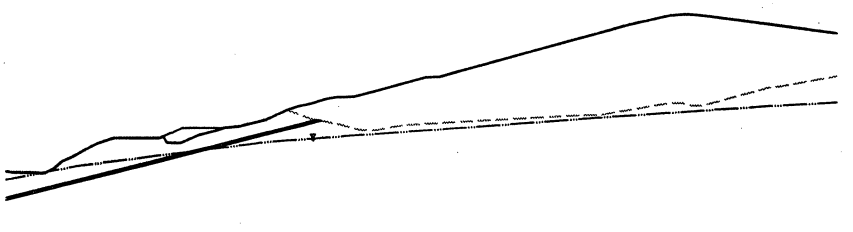
A1X19



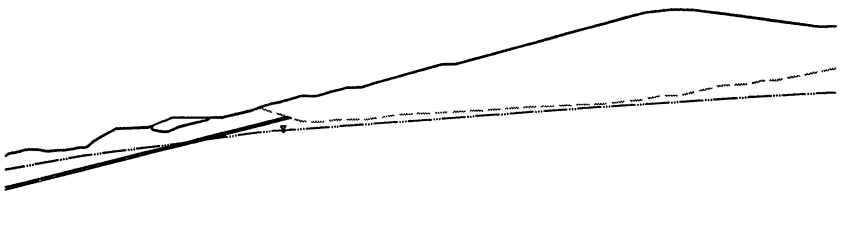
A1X20



A1X21



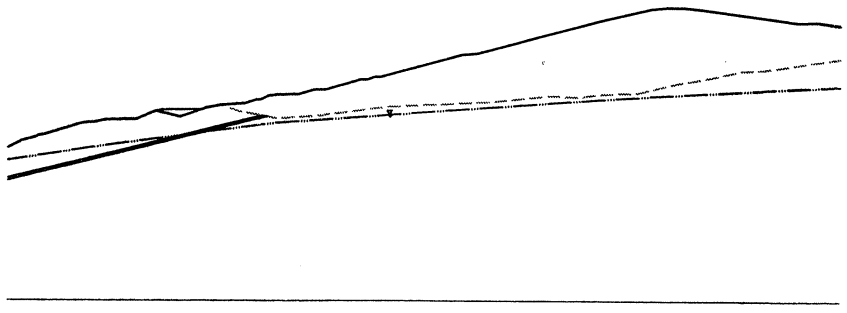
A1X22



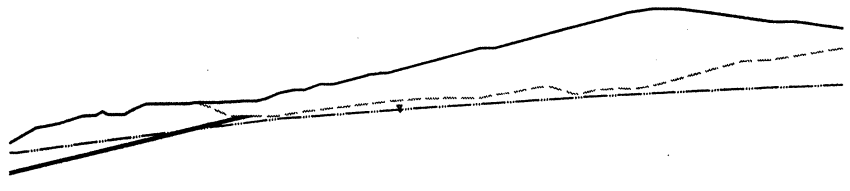
3/22/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A1X -- FINALIZED FOR CLARA; LOWER 14 DEGREE DIP CLAYSTONE BED BY 20' NORMAL TO BED

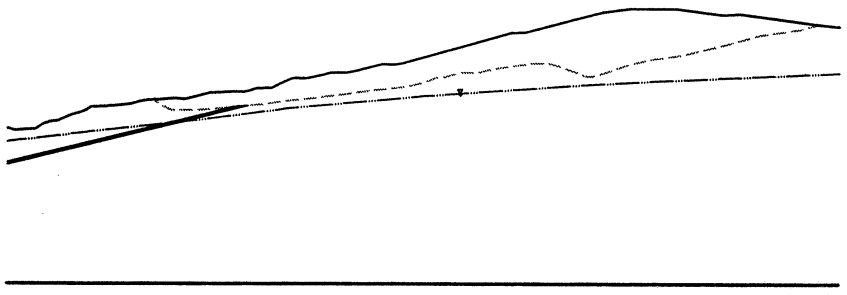
A1X23



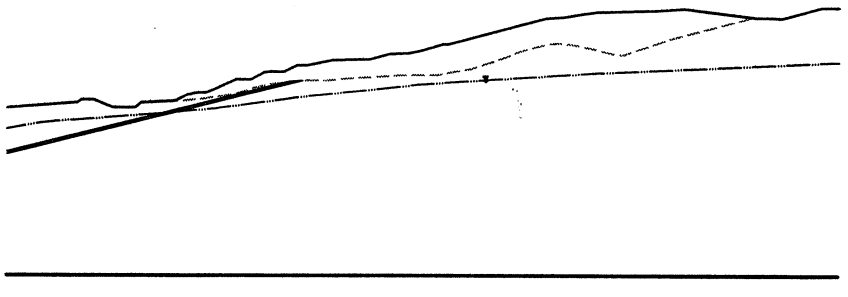
A1X24



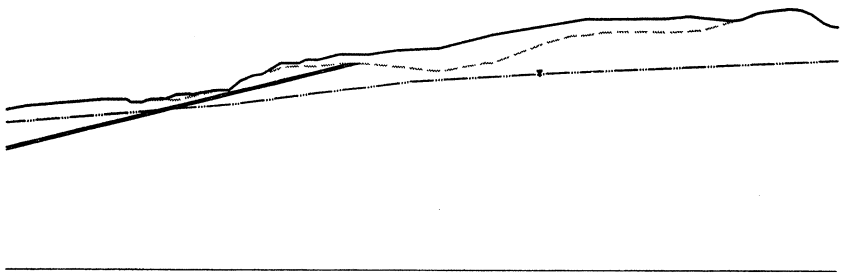
A1X26



A1X28



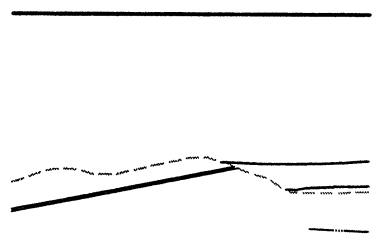
A1X30



3/12/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A5X --- FINALIZED FOR CLARA; CLAYSTONE BED DIPS AT 11 DEGREES

A5X0



A5X1

A5X2

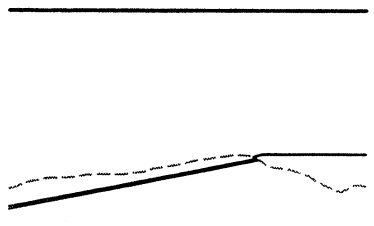
A5X3

A5X4

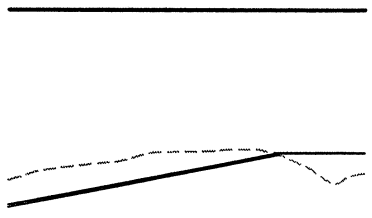
3/12/04 RMW
2004-022 OLINDA LANDFILL

CLARA CROSS SECTIONS A5X --- FINALIZED FOR CLARA; CLAYSTONE BED DIPS AT 11 DEGREES

A5X5



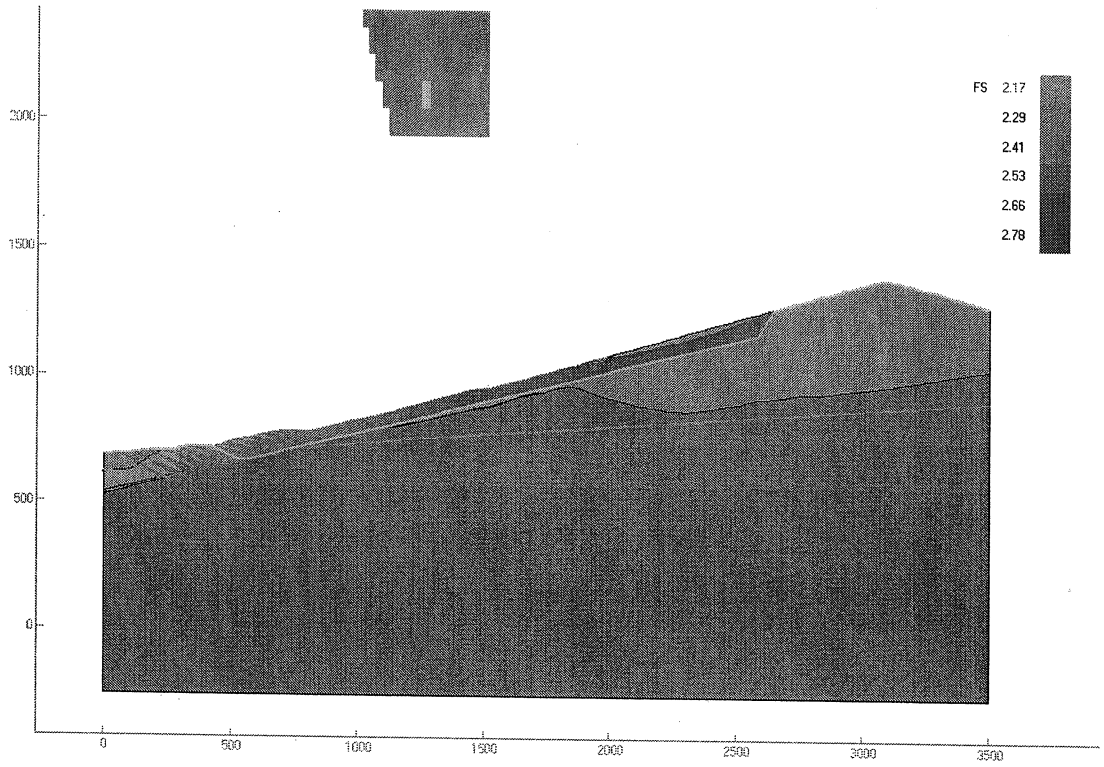
A5X6



A5X7

A5X8

A5X9



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/26/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.17**
Slide Volume:	170729700.00
Slide Weight:	14955260000.00
Unbalanced Force:	848.0859
Sliding Surface Area:	3155936.00
No. of Active Columns:	2739
Rotation angle:	0.00
Centre Y:	-269.03
Centre Z:	8191.47

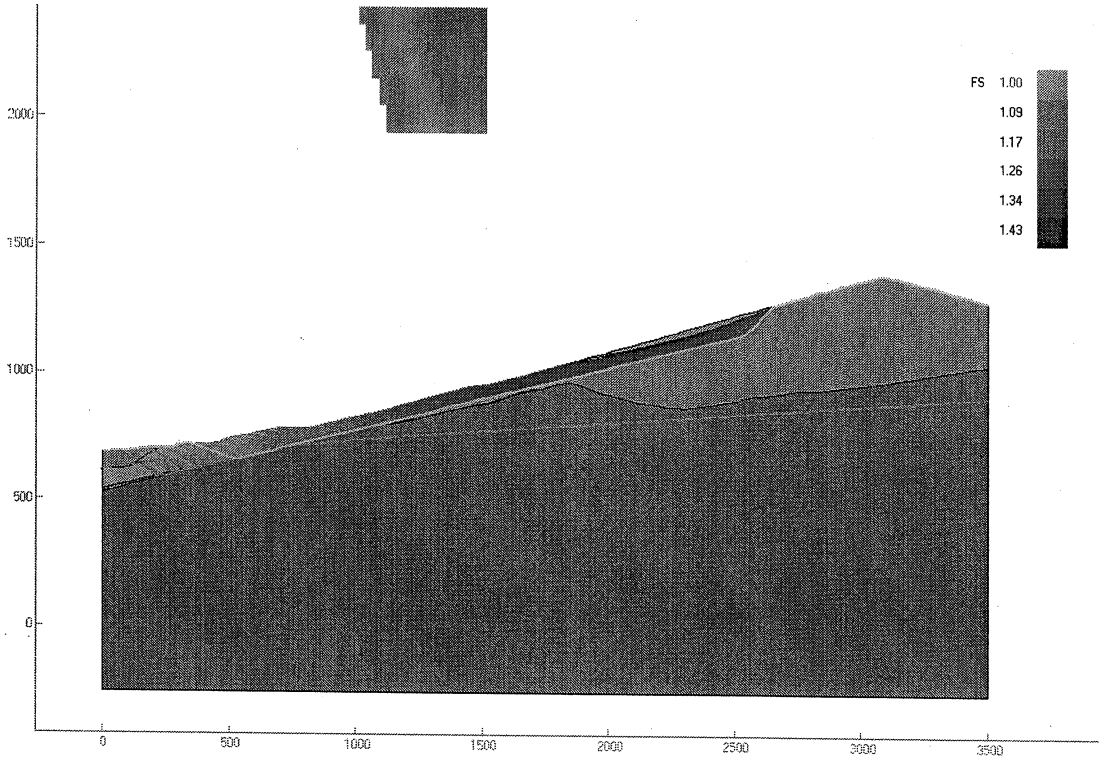
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1670b



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	174138500.00
Slide Weight:	15388040000.00
Unbalanced Force:	-587183.8000
Sliding Surface Area:	3301114.00
No. of Active Columns:	2885
Rotation angle:	0.00
Centre Y:	-250.97
Centre Z:	8202.54

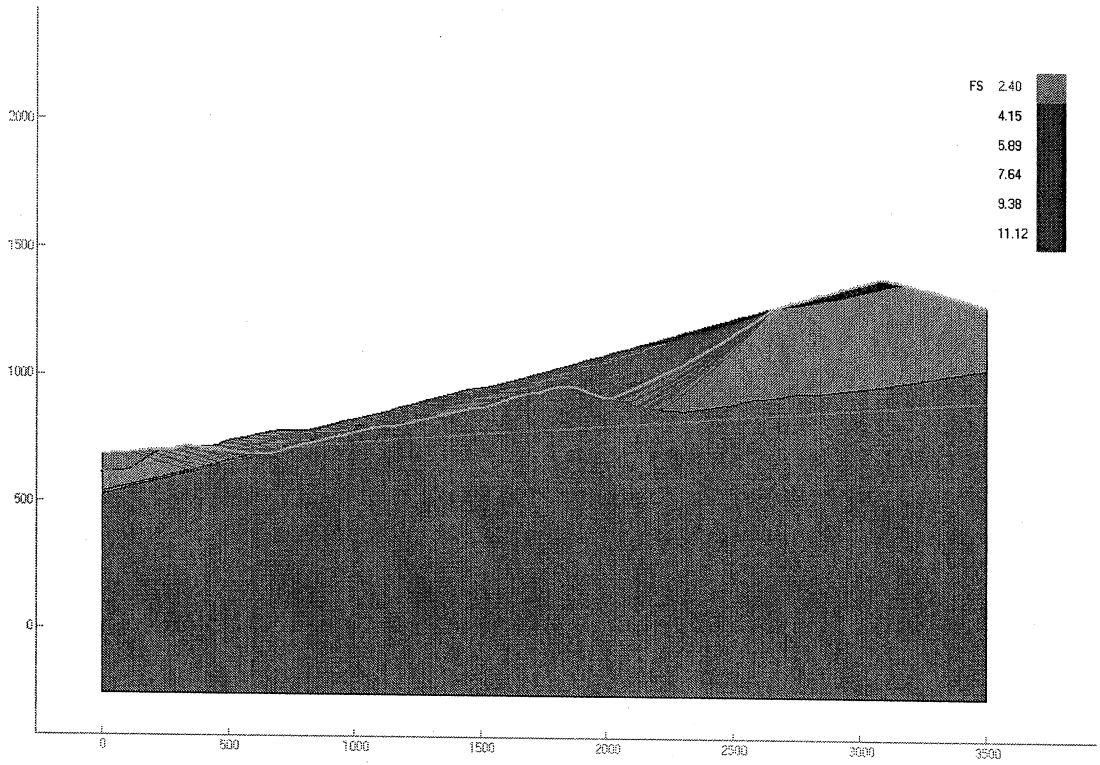
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.24

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1670b501



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/26/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.34**
Slide Volume:	214730400.00
Slide Weight:	17881480000.00
Unbalanced Force:	372847.7000
Sliding Surface Area:	3291794.00
No. of Active Columns:	2853
Rotation angle:	0.00
Centre Y:	821.43
Centre Z:	3800.00

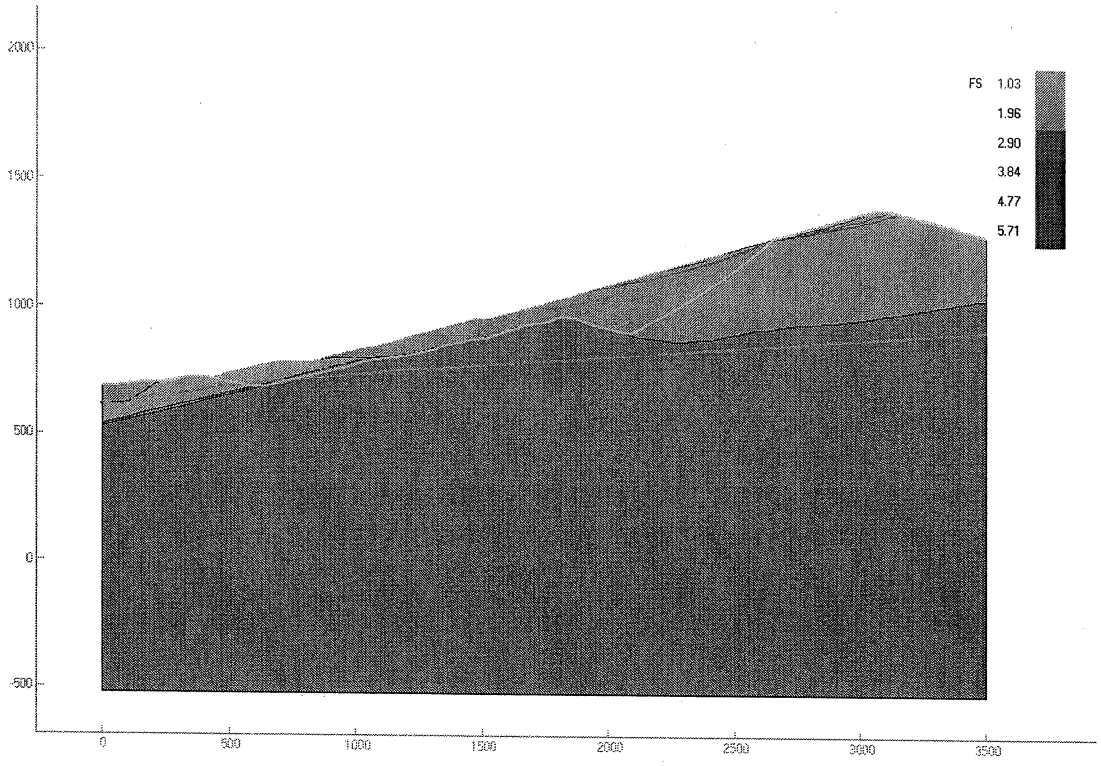
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674503



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/26/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	236401000.00
Slide Weight:	19423940000.00
Unbalanced Force:	958879.0000
Sliding Surface Area:	3188495.00
No. of Active Columns:	2712
Rotation angle:	0.00
Centre Y:	987.50
Centre Z:	3200.00

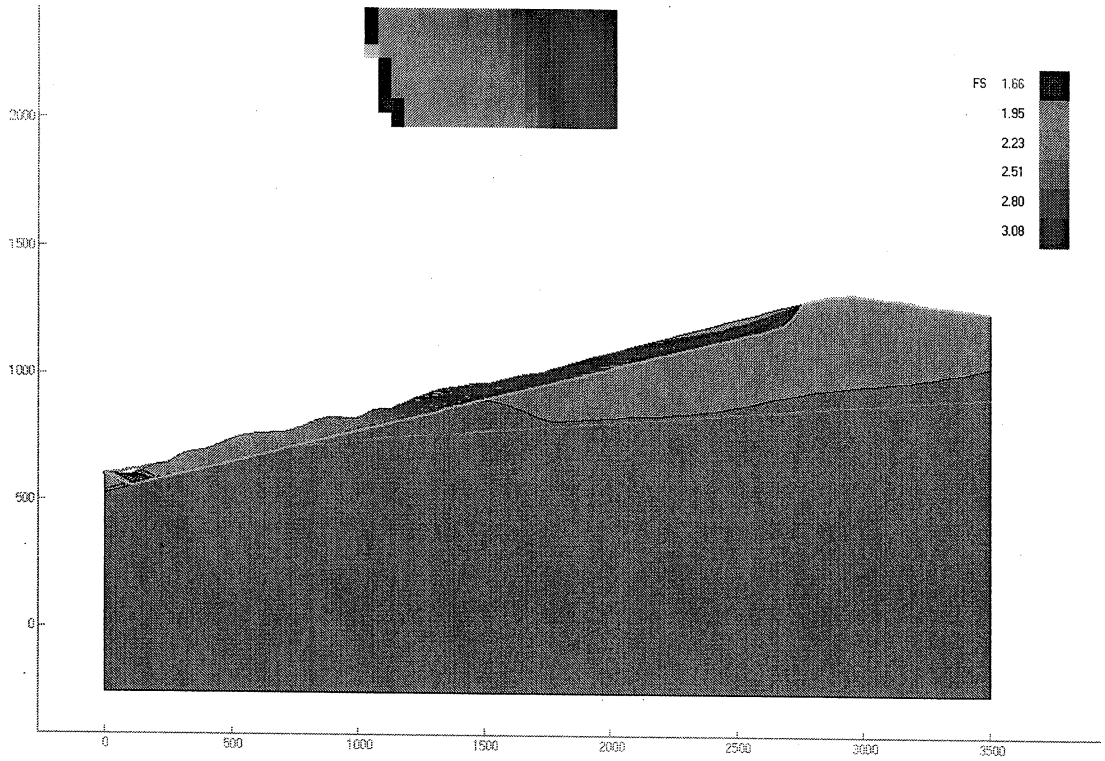
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.30

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674503501



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/26/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.66**
Slide Volume:	93121690.00
Slide Weight:	9417803000.00
Unbalanced Force:	7383488.0000
Sliding Surface Area:	1664526.00
No. of Active Columns:	1406
Rotation angle:	0.00
Centre Y:	-3010.83
Centre Z:	18563.16

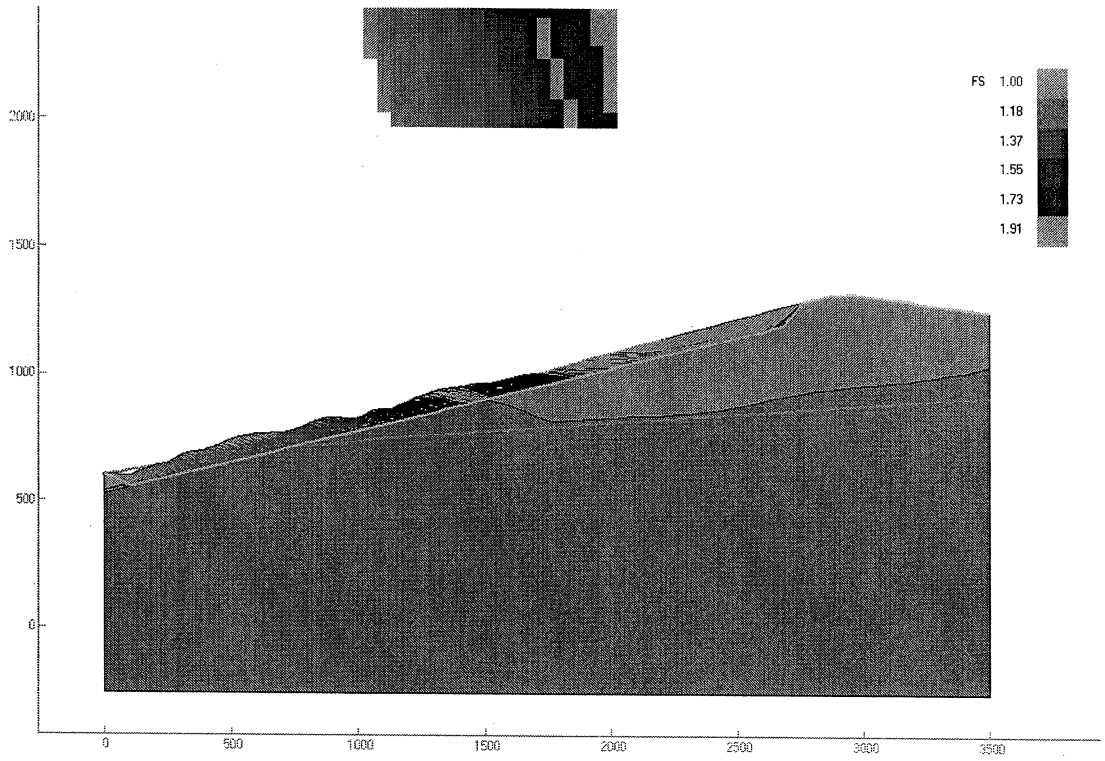
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1673e P01



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	92327540.00
Slide Weight:	9339719000.00
Unbalanced Force:	32913420.0000
Sliding Surface Area:	1663189.00
No. of Active Columns:	1405
Rotation angle:	0.00
Centre Y:	-2795.16
Centre Z:	17657.42

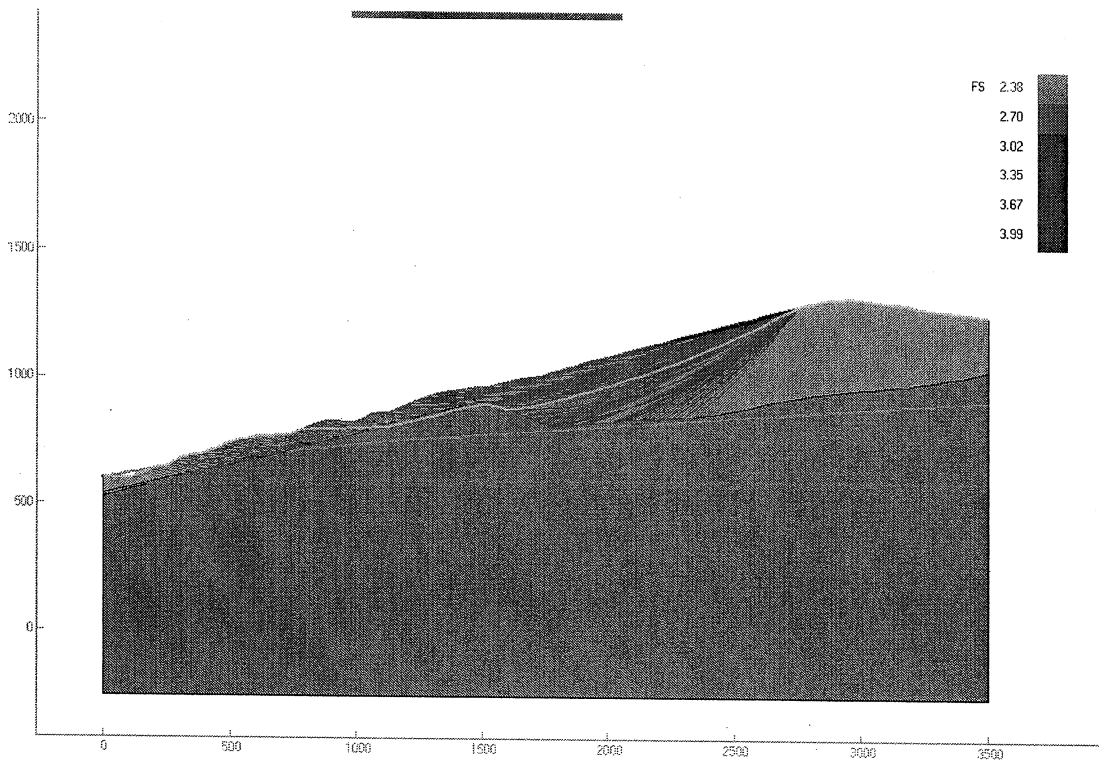
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.15

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1673e P01501



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.33**
Slide Volume:	108984300.00
Slide Weight:	8596120000.00
Unbalanced Force:	-105792.5000
Sliding Surface Area:	2085165.00
No. of Active Columns:	1849
Rotation angle:	0.00
Centre Y:	821.41
Centre Z:	4821.43

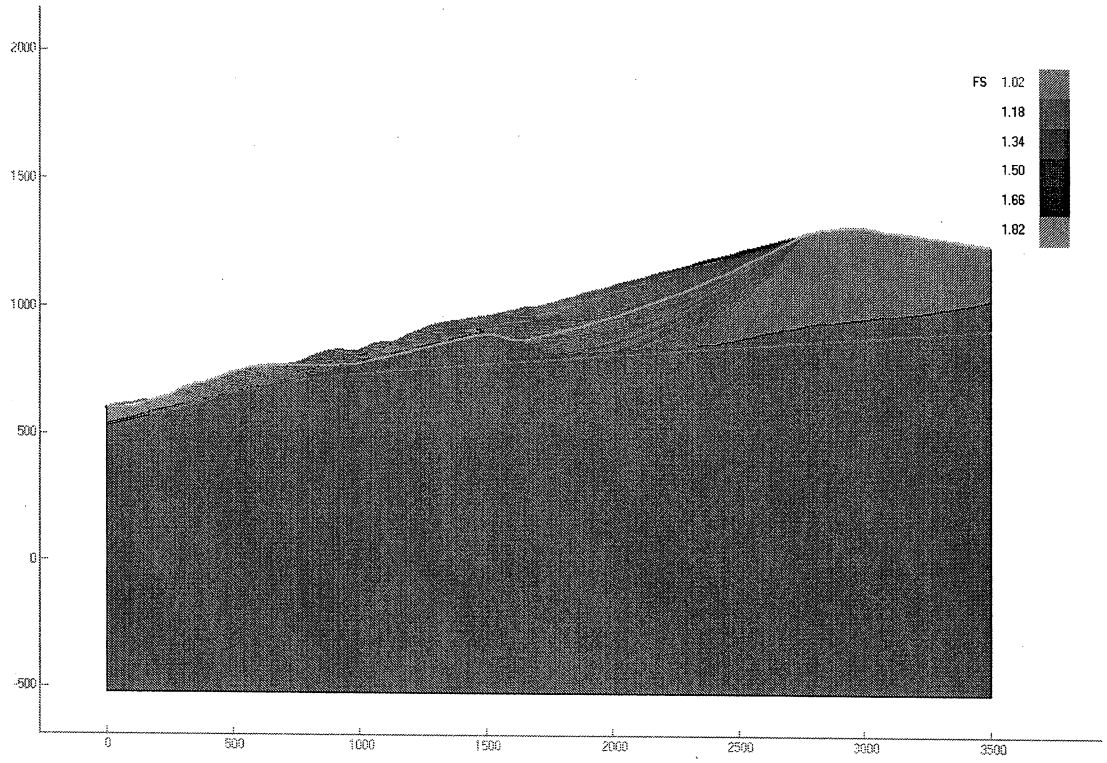
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx3e



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	129675800.00
Slide Weight:	10432690000.00
Unbalanced Force:	-41331.5500
Sliding Surface Area:	2405236.00
No. of Active Columns:	2132
Rotation angle:	0.00
Centre Y:	714.27
Centre Z:	5000.00

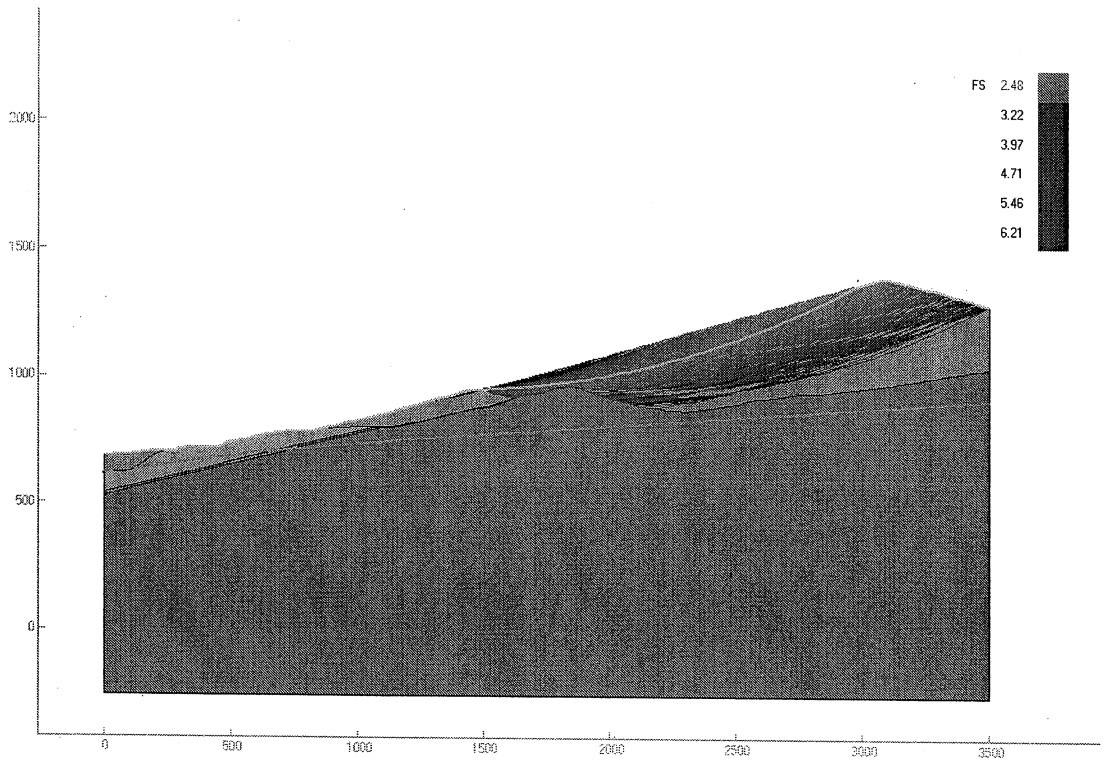
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.29

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx3es01



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.48**
Slide Volume:	57856920.00
Slide Weight:	4165694000.00
Unbalanced Force:	1318665.0000
Sliding Surface Area:	1329009.00
No. of Active Columns:	1177
Rotation angle:	0.00
Centre Y:	1357.14
Centre Z:	4300.00

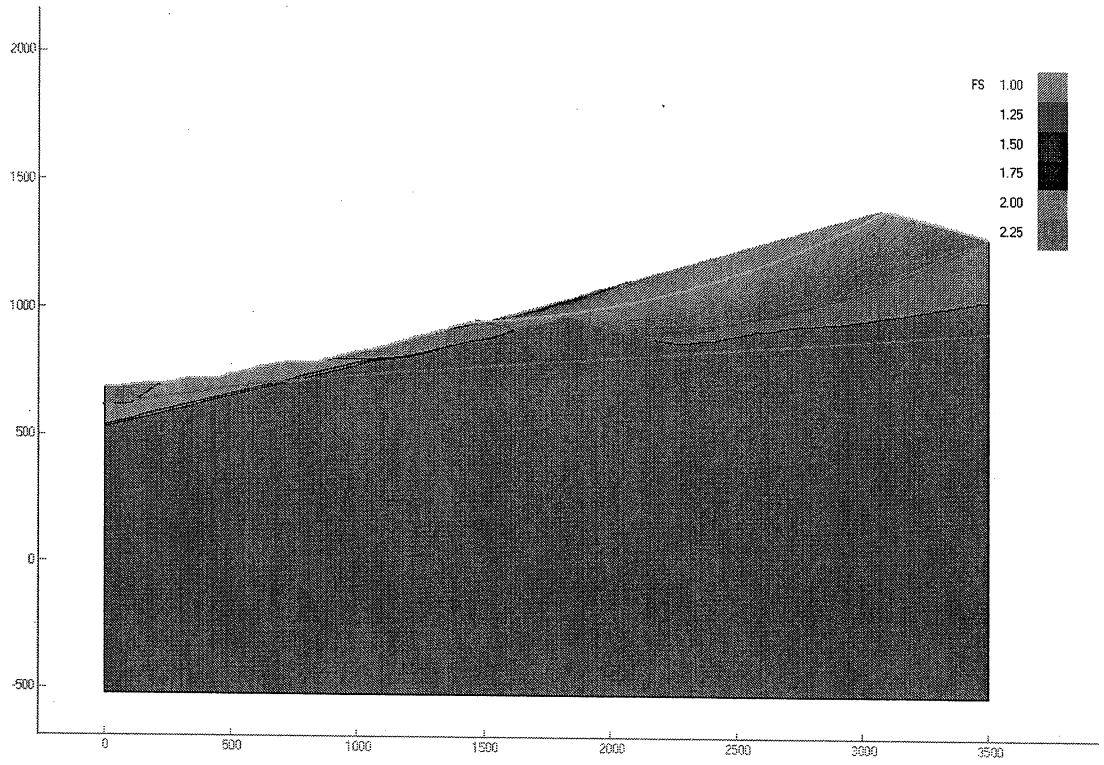
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674 Sh1



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/6/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	67977570.00
Slide Weight:	4894380000.00
Unbalanced Force:	-9534489.0000
Sliding Surface Area:	1515610.00
No. of Active Columns:	1346
Rotation angle:	0.00
Centre Y:	1285.71
Centre Z:	4785.71

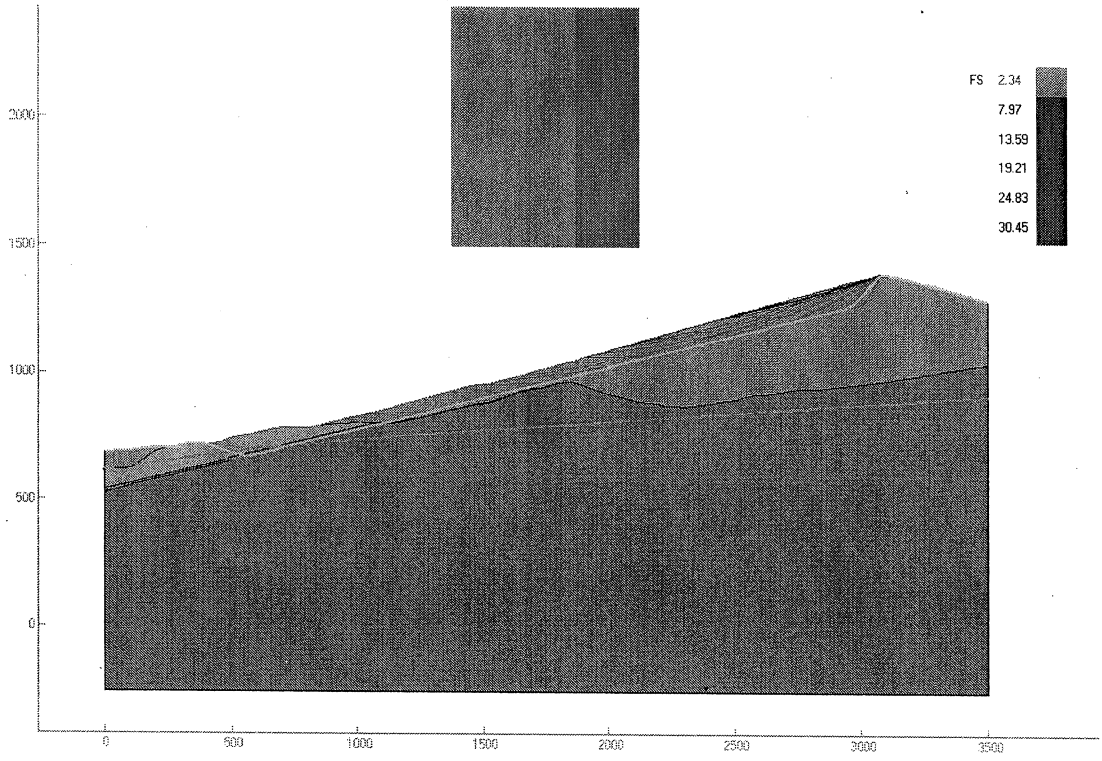
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.35

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674sx1501



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.37**
Slide Volume:	254425500.00
Slide Weight:	21149040000.00
Unbalanced Force:	168289.0000
Sliding Surface Area:	4531549.00
No. of Active Columns:	3971
Rotation angle:	0.00
Centre Y:	33.66
Centre Z:	8057.51

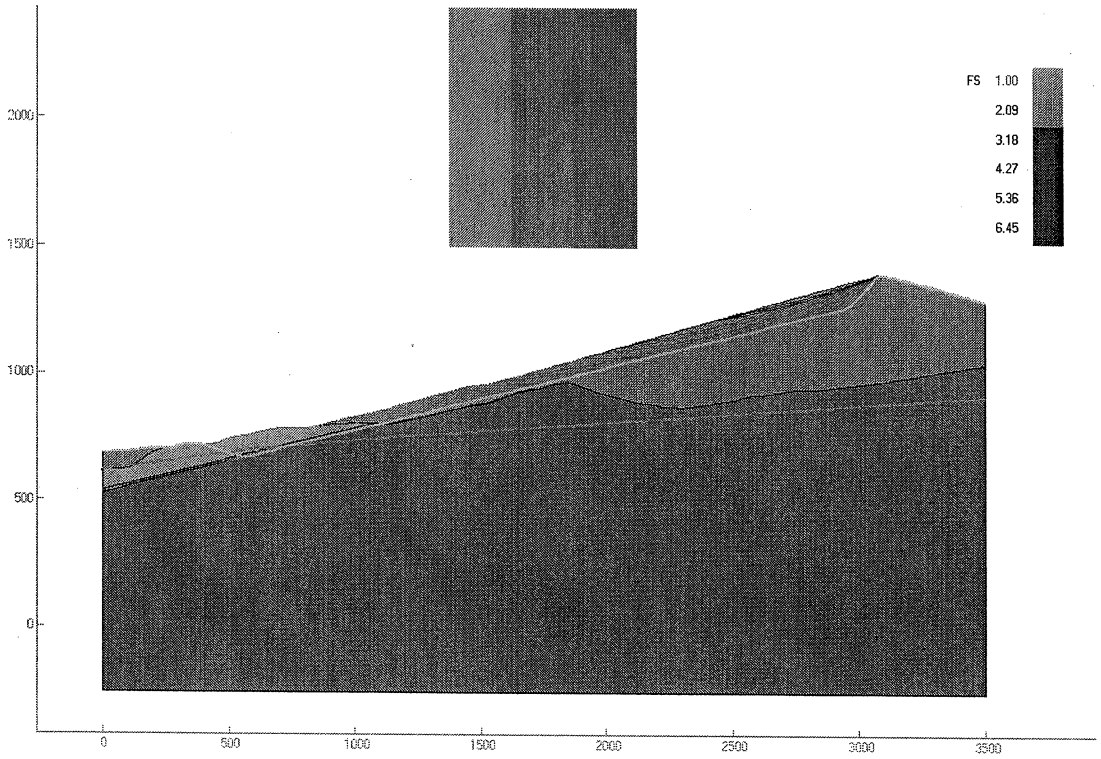
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1670a



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

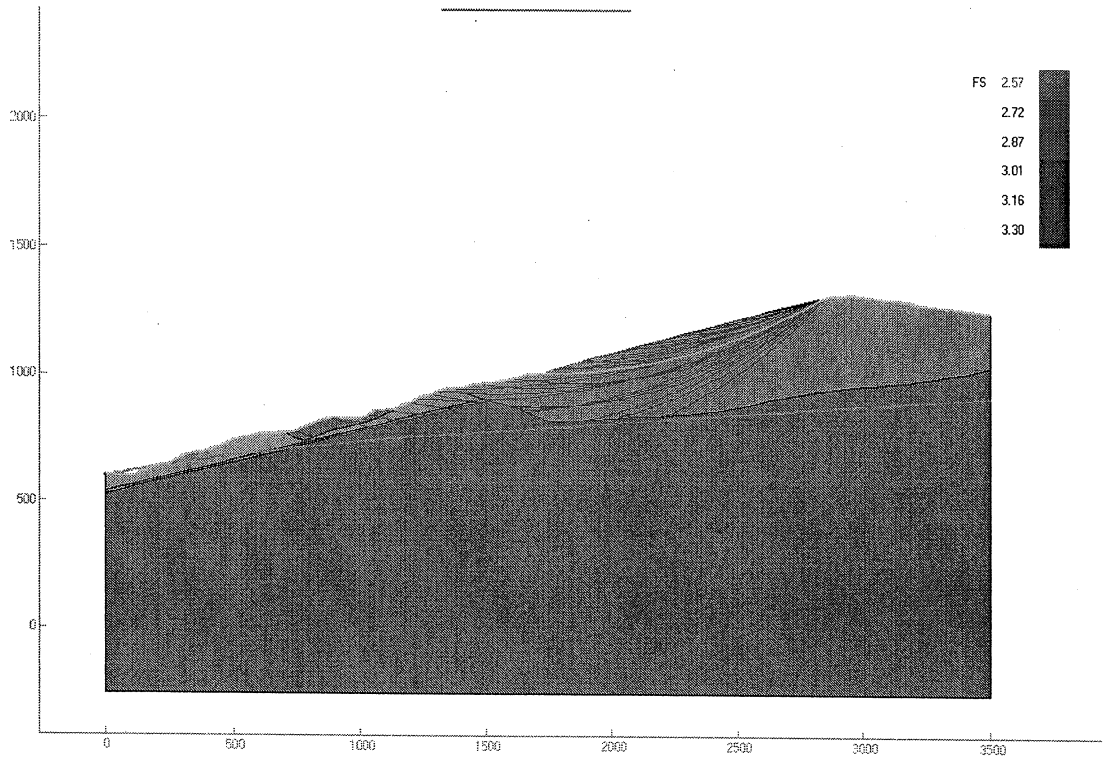
Factor of Safety:	**1.00**
Slide Volume:	254425500.00
Slide Weight:	21149040000.00
Unbalanced Force:	-152577.7000
Sliding Surface Area:	4531549.00
No. of Active Columns:	3971
Rotation angle:	0.00
Centre Y:	33.66
Centre Z:	8057.51

Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.28

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**2.59**
Slide Volume:	32515920.00
Slide Weight:	2341230000.00
Unbalanced Force:	46426.0500
Sliding Surface Area:	795581.90
No. of Active Columns:	702
Rotation angle:	0.00
Centre Y:	1700.00
Centre Z:	3300.00

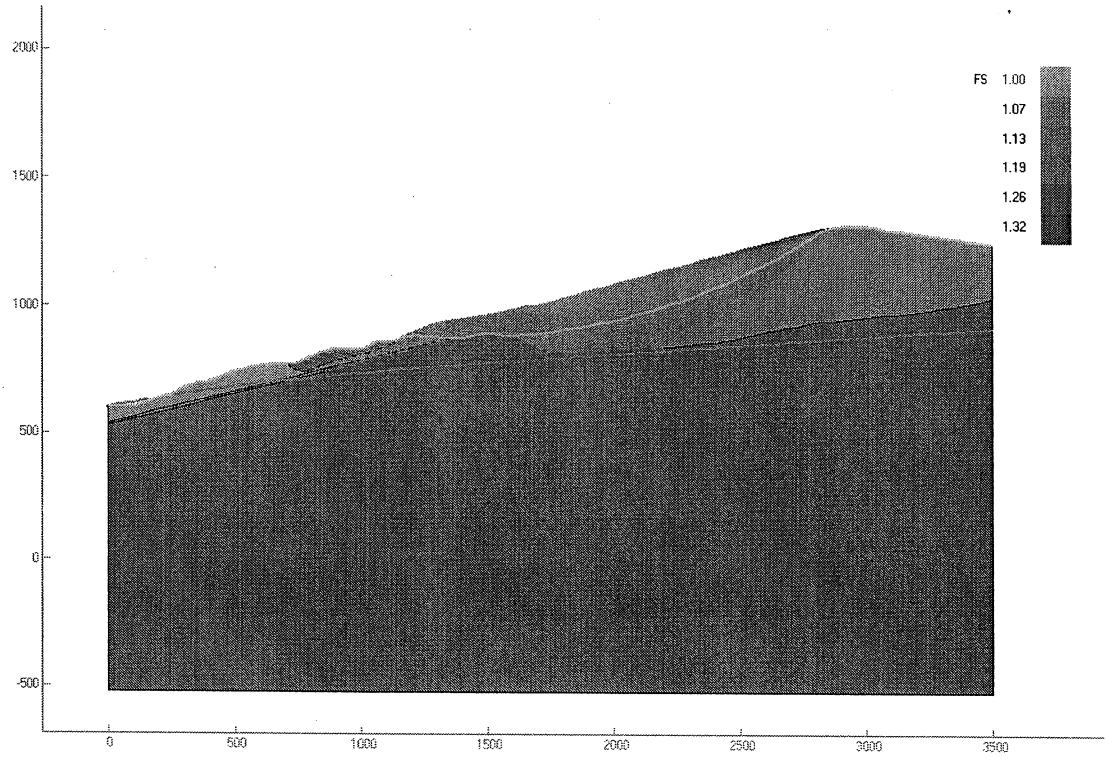
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx3



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/6/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	106591500.00
Slide Weight:	7926826000.00
Unbalanced Force:	26836.2900
Sliding Surface Area:	1612253.00
No. of Active Columns:	1408
Rotation angle:	0.00
Centre Y:	1400.00
Centre Z:	3500.00

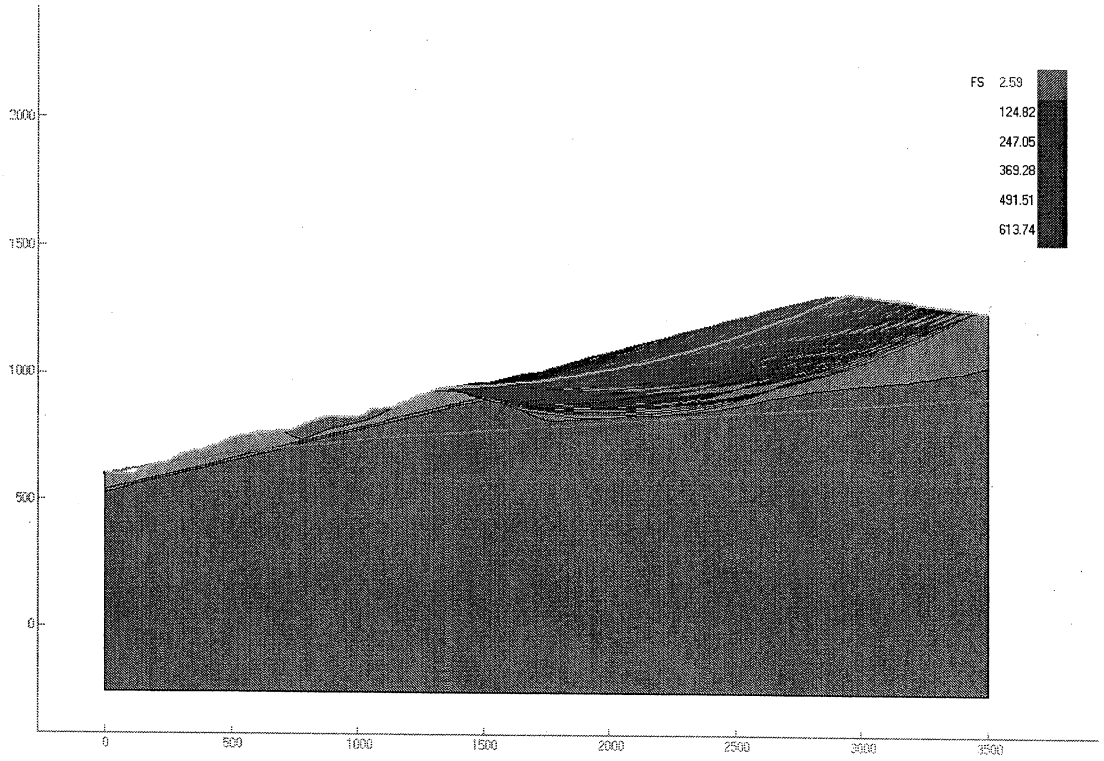
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.35

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx3501



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

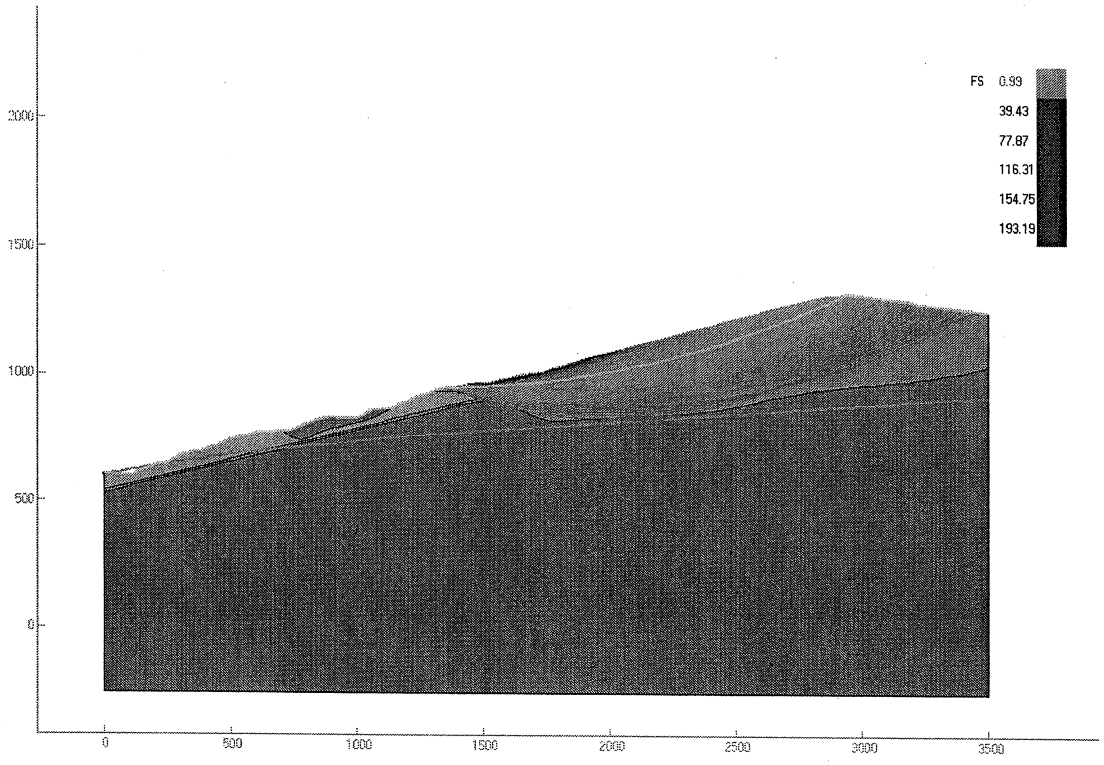
Factor of Safety: **2.63**
Slide Volume: 47074560.00
Slide Weight: 3389605000.00
Unbalanced Force: 126415.7000
Sliding Surface Area: 1244051.00
No. of Active Columns: 1112
Rotation angle: 0.00
Centre Y: 1214.29
Centre Z: 5028.57
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx6



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/6/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.00**
Slide Volume:	54652080.00
Slide Weight:	3935305000.00
Unbalanced Force:	138966.1000
Sliding Surface Area:	1309783.00
No. of Active Columns:	1169
Rotation angle:	0.00
Centre Y:	1285.71
Centre Z:	4785.71

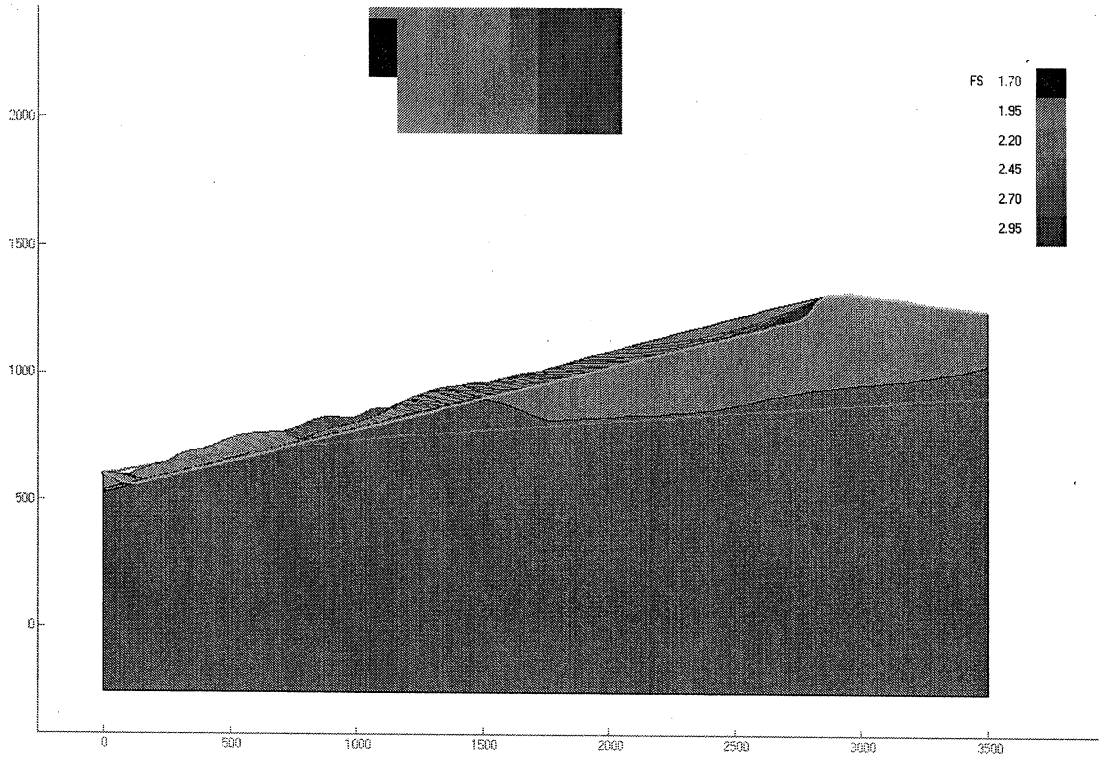
Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.37

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1674jx6 S01



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.70**
Slide Volume:	98975220.00
Slide Weight:	9872332000.00
Unbalanced Force:	-15286690.0000
Sliding Surface Area:	1781935.00
No. of Active Columns:	1510
Rotation angle:	0.00
Centre Y:	-2753.44
Centre Z:	17570.93

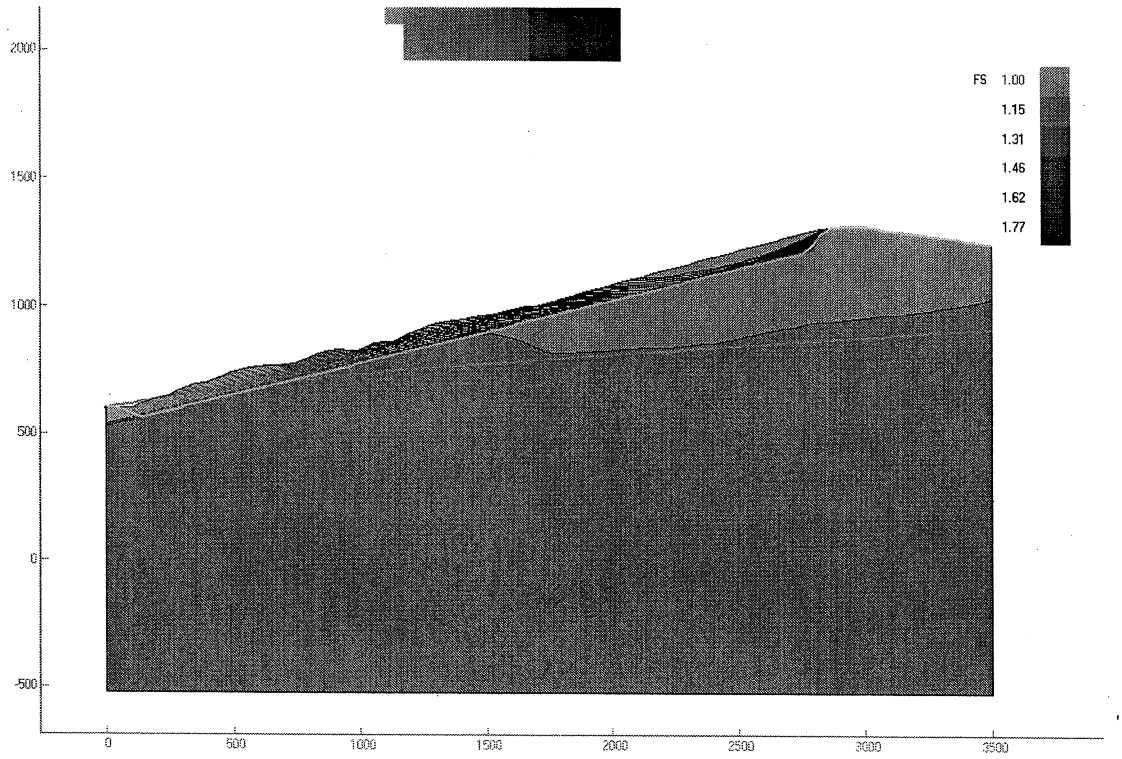
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0

1673e



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 5/7/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

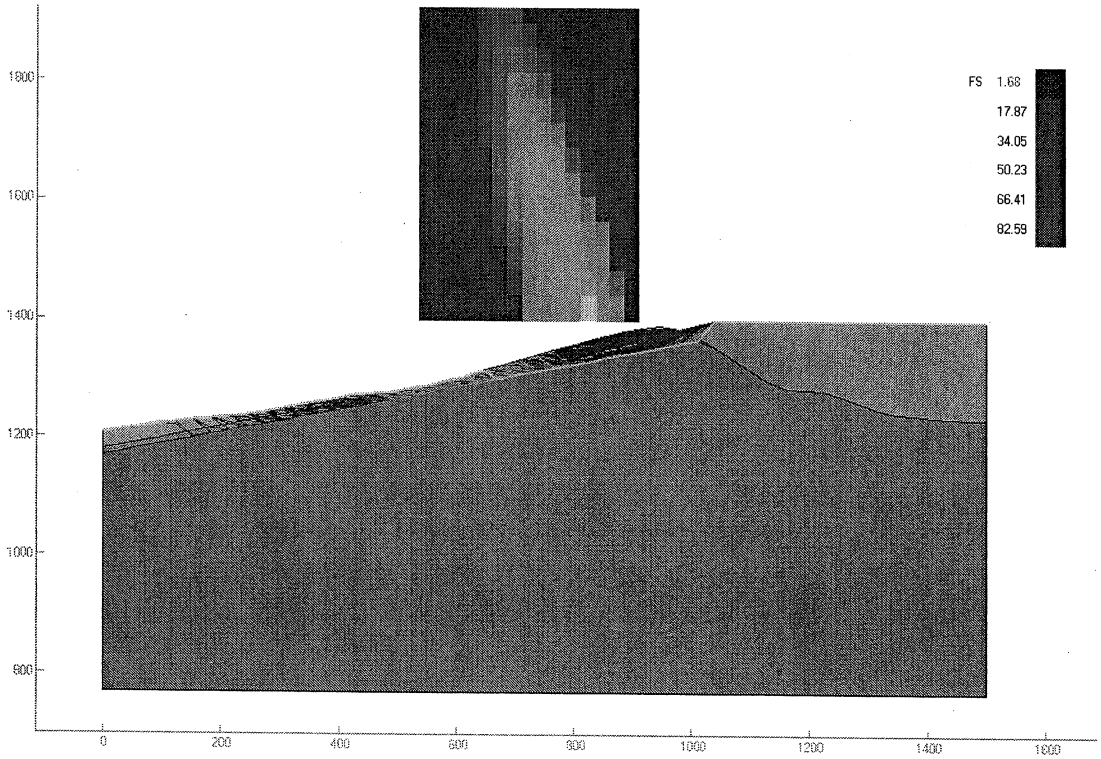
Factor of Safety:	**1.00**
Slide Volume:	96972660.00
Slide Weight:	9647908000.00
Unbalanced Force:	22769310.0000
Sliding Surface Area:	1756263.00
No. of Active Columns:	1486
Rotation angle:	0.00
Centre Y:	-2673.74
Centre Z:	17115.66

Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.16

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	1	0	0
Sandstone	130	400	34	1	0	0
Refuse	72	100	33	1	0	0
Buttress Soil	120	500	28.5	1	0	0



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/25/2004

Sliding Surface:
Critical surface by grid search
Bishop's Method

Factor of Safety:	**1.67**
Slide Volume:	2133875.00
Slide Weight:	272164700.00
Unbalanced Force:	-11937.1400
Sliding Surface Area:	72255.56
No. of Active Columns:	110
Rotation angle:	0.00
Centre Y:	825.00
Centre Z:	1420.00

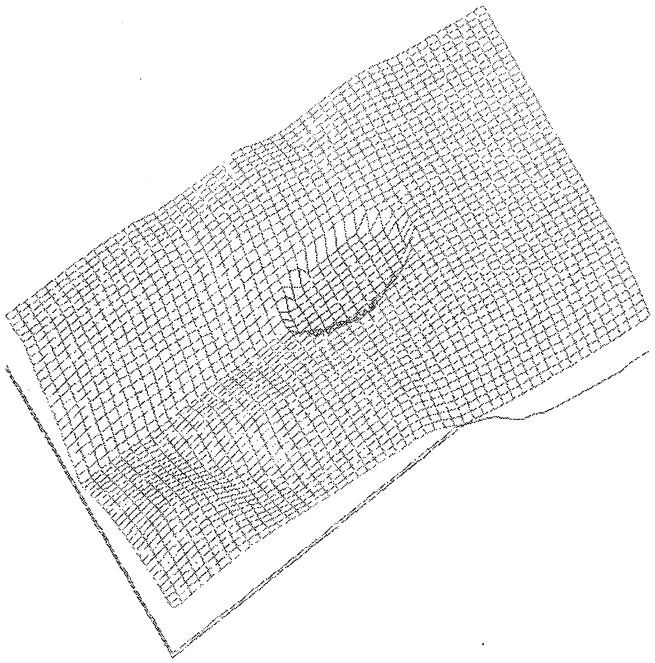
Negative normal stresses in 0% of weight

Unit Weight of Water: 62.4 (pcf)

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	0	0	0
Sandstone	130	400	34	0	0	0
Refuse	72	100	33	0	0	0

1205



PROJECT: **Olinda Landfill**

Input By: RMW
Date: 3/26/2004

Sliding Surface:
Single ellipsoidal sliding surface
Bishop's Method

Factor of Safety:	**0.99**
Slide Volume:	2133001.00
Slide Weight:	272060100.00
Unbalanced Force:	-89996.3400
Sliding Surface Area:	72265.18
No. of Active Columns:	110
Rotation angle:	0.00
Centre Y:	825.00
Centre Z:	1420.00

Negative normal stresses in 0% of weight

Unit Weight of Water:	62.4 (pcf)
Hor. Earthquake Accel.:	0.15

List of Materials:

Name	*Unit Weight*	*Cohesion*	*Friction Angle*	*Piezo #*	*Press. Ratio*	*B-bar Coeff.*
Claystone	125	50	11	0	0	0
Sandstone	130	400	34	0	0	0
Refuse	72	100	33	0	0	0

1205501

ATTACHMENT 2

SEISMIC DISPLACEMENT ANALYSIS

Geo-Logic ASSOCIATES

Calculation Brief

By: RMW Date: 5/6/04 Subject: Calculate seismic displacement of Sheet No. 1 of 3
Chkd. by: LAM Date: 5/7/04 Olinda Landfill Lateral/Vertical Expansion Proj. No. 2004-022

Purpose:

For the proposed lateral/vertical expansion of the Olinda Landfill, calculate the seismically-induced permanent displacement as a result of the Maximum Credible Earthquake (MCE) for the most critical slope stability analysis case: the highest, southern-facing landfill slope.

Background:

A procedure described by Bray and Rathje (Reference 1) is used to determine estimated seismic-induced permanent displacement. The procedure is based on the one described by Newmark (Reference 2) for determining displacement of a rigid block resting on a sliding plane subjected to earthquake-type motions. The procedure is based on the premise that the sliding block will undergo displacement only during the periods when the maximum ground acceleration (k_{max}) exceeds the yield acceleration (k_y) for the sliding block, and no displacements occur when k_y is greater than k_{max} (i.e. $k_y/k_{max}>1$). The yield acceleration k_y is that which causes incipient failure (i.e. FS = 1.0) in a pseudo-static slope stability analysis. Bray and Rathje refined Newmark's analysis for waste fills to incorporate the dynamic response characteristics of the sliding block and intensity and duration of ground motions at the site during the MCE.

In order to determine the maximum horizontal acceleration (MHA) at the site from the maximum credible earthquake (MCE), a deterministic search was performed using EQFAULT (Blake, 2000) using the site latitude/longitude coordinates. The search was performed using several applicable attenuation relationships, and the most conservative result was selected for this seismic displacement analysis. The MCE was estimated to be a magnitude 6.8 earthquake event on the nearby (< 1 mile) Whittier fault, with a corresponding peak acceleration of 0.75 g at the landfill site (Reference 4; see Attachment 1).

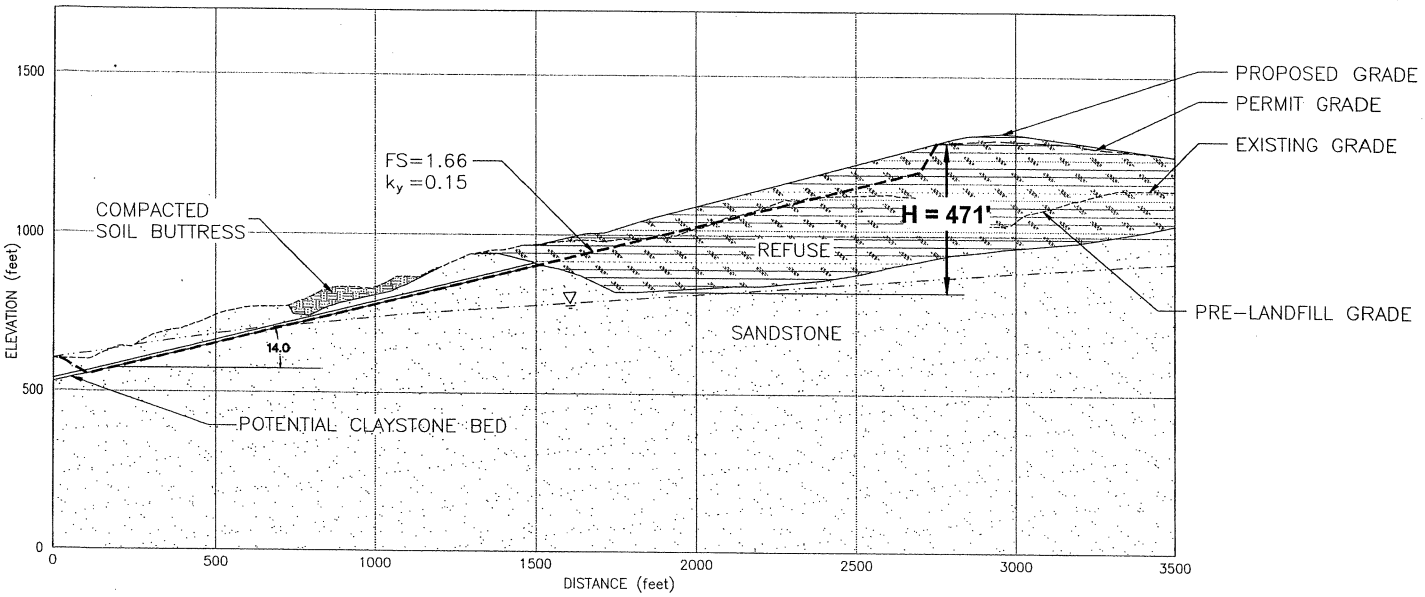
References:

1. Bray, J.D., and Rathje, E.M., 1998, "Earthquake-Induced Displacements of Solid-Waste Landfills," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, March, Vol. 124, No. 3.
2. Newmark, N.M., 1965, "Effects of Earthquakes on Dams and Embankments," *Geotechnique*, Vol. 15(2), pp. 139-160.
3. Bray, J.D., Rathje, E.M., Augelo, A.J., and S.M. Perry, 1998, "Simplified Seismic Design Procedure for Geosynthetic-Lined, Solid-Waste Landfills," *Geosynthetics International*, Vol. 5, Nos. 1-2.
4. Blake, T.F., 2000, "EQFAULT for Windows," Version 3.00b, Thousand Oaks, California.

Geo-Logic ASSOCIATES

Calculation Brief

By: RMW Date: 5/6/04 Subject: Calculate seismic displacement of Sheet No. 2 of 3 .
Chkd. by: RDM Date: 5/7/04 Olinda Landfill Lateral/Vertical Expansion Proj. No. 2004-022



CROSS-SECTION A1X19

Solution:

I. Input Data

Site Condition	= **Rock**	
Waste Fill Height, H	= **471 ft. = 144 m** (see sketch above)	
Maximum Credible Earthquake (MCE) Magnitude	= **6.8**	(associated with Whittier fault at < 1 mile, Reference 4)
Yield Acceleration, k_y	= **0.15g**	(from 3-D pseudo-static analysis; Case: composite circular-wedge failure daylighting at Permit Grade)

II. Determine Additional Seismic Parameters

Maximum Horizontal Site Acceleration, MHA	≈ **0.75g**	(for the MCE at the Site; Reference 4)
Mean Period of Input Rock Motion for MCE, T_m	= **0.48 sec**	(for the MCE at the Site; Figure 2b, Reference 3)
Significant Duration, D_{5-95}	≈ **12 sec**	(for the MCE at the Site, Figure 2c, Reference 3)

Geo-Logic ASSOCIATES

Calculation Brief

By: RMW Date: 5/6/04 Subject: Calculate seismic displacement of Sheet No. 3 of 3
Chkd. by: RDM Date: 5/7/04 Olinda Landfill Lateral/Vertical Expansion Proj. No. 2004-022

Average Shear Wave Velocity for Fill, V_s = 500 m/sec (for H = 471 ft. = 144 m,
= **1,640 ft/sec** Figure 2, Reference 1)

III. Calculate Fundamental Period of Waste Fill

Initial Fundamental Period of Waste Fill, T_s = $4 \times H/V_s$ (Reference 1, pg. 243)
= $4 \times 471/1{,}640$
= **1.15 sec**

IV. Calculate Maximum Horizontal Equivalent Acceleration

Ratio T_s / T_m = 1.15/0.48
= 2.40

Ratio MHEA/MHA = 0.27 (Figure 7b for rock site, Reference 1)

Where:
MHEA = Maximum Horizontal Equivalent Acceleration @ base of Waste Fill = k_{max}
MHA = Maximum Horizontal Acceleration of Site Input Rock Motion

Thus, k_{max} = $0.27 \times$ MHA
= $0.27 \times 0.75g$ = **0.20 g**

V. Calculate Seismically-Induced Permanent Displacement

Ratio k_y / k_{max} = 0.15/ 0.20 = 0.75

Normalized Displacement $U/(k_{max} \times D_{5\text{-}95})$ = 0.4 cm/sec (with 16% probability of exceedance; Figure 11, Reference 1)

Displacement, U = $[U/(k_{max} \times D_{5\text{-}95})] \times k_{max} \times D_{5\text{-}95}$
= $0.4 \times 0.20 \times 12$
= **1 cm or 0.4 inches**

Note: Since the magnitude of seismic-induced permanent displacements that are considered acceptable in the industry is about 6 to 12 inches for solid waste slopes, the minor displacements calculated here are acceptable.

ATTACHMENT 1

DETERMINISTIC SEARCH RESULTS FOR MAXIMUM CREDIBLE EARTHQUAKE AND MAXIMUM HORIZONTAL ACCELERATION PERFORMED USING EQFAULT (Reference 4)

```
**********************
*                    *
*    E Q F A U L T   *
*                    *
*    Version 3.00    *
*                    *
**********************
```

DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS

JOB NUMBER: 2004-022

DATE: 03-16-2004

JOB NAME: Olinda Landfill

CALCULATION NAME: Run 05

FAULT-DATA-FILE NAME: CDMGFLTE.DAT

SITE COORDINATES:
SITE LATITUDE: 33.9350
SITE LONGITUDE: 117.8430

SEARCH RADIUS: 100 mi

ATTENUATION RELATION: 22) Abrahamson & Silva (1995b/1997) Horiz.- Rock
UNCERTAINTY (M=Median, S=Sigma): M Number of Sigmas: 0.0
DISTANCE MEASURE: clodis
SCOND: 1
Basement Depth: 5.00 km Campbell SSR: 1 Campbell SHR: 0
COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED: CDMGFLTE.DAT

MINIMUM DEPTH VALUE (km): 0.0

Olinda05.OUT

EQFAULT SUMMARY

DETERMINISTIC SITE PARAMETERS

Page 1

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT		
		MAXIMUM EARTHQUAKE MAG.(Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD.MERC.
WHITTIER	0.6(1.0)	6.8	0.748	XI
SAN JOSE	7.5(12.1)	6.5	0.355	IX
CHINO-CENTRAL AVE. (Elsinore)	7.7(12.4)	6.7	0.533	X
ELYSIAN PARK THRUST	8.4(13.5)	6.7	0.340	IX
ELSINORE-GLEN IVY	13.0(21.0)	6.8	0.177	VIII
COMPTON THRUST	13.7(22.0)	6.8	0.219	IX
SIERRA MADRE	13.7(22.1)	7.0	0.235	IX
CUCAMONGA	14.7(23.7)	7.0	0.220	IX
RAYMOND	18.5(29.8)	6.5	0.140	VIII
CLAMSHELL-SAWPIT	19.0(30.6)	6.5	0.136	VIII
NEWPORT-INGLEWOOD (L.A.Basin)	19.1(30.8)	6.9	0.125	VII
VERDUGO	22.4(36.0)	6.7	0.125	VII
NEWPORT-INGLEWOOD (Offshore)	24.1(38.8)	6.9	0.098	VII
HOLLYWOOD	25.6(41.2)	6.4	0.094	VII
PALOS VERDES	27.5(44.3)	7.1	0.095	VII
SAN JACINTO-SAN BERNARDINO	28.6(46.1)	6.7	0.074	VII
SAN ANDREAS - 1857 Rupture	31.3(50.3)	7.8	0.120	VII
SAN ANDREAS - Mojave	31.3(50.3)	7.1	0.083	VII
SAN ANDREAS - Southern	31.4(50.5)	7.4	0.097	VII
SAN ANDREAS - San Bernardino	31.4(50.5)	7.3	0.092	VII
CLEGHORN	33.9(54.5)	6.5	0.056	VI
SANTA MONICA	34.0(54.7)	6.6	0.076	VII
ELSINORE-TEMECULA	34.8(56.0)	6.8	0.063	VI
SIERRA MADRE (San Fernando)	35.1(56.5)	6.7	0.077	VII
SAN JACINTO-SAN JACINTO VALLEY	35.2(56.6)	6.9	0.066	VI
SAN GABRIEL	36.4(58.6)	7.0	0.067	VI
MALIBU COAST	40.1(64.5)	6.7	0.067	VI
NORTHRIDGE (E. Oak Ridge)	40.2(64.7)	6.9	0.075	VII
NORTH FRONTAL FAULT ZONE (West)	41.2(66.3)	7.0	0.077	VII
SANTA SUSANA	46.0(74.1)	6.6	0.054	VI
CORONADO BANK	46.3(74.5)	7.4	0.067	VI
ANACAPA-DUME	49.0(78.8)	7.3	0.077	VII
HOLSER	51.9(83.6)	6.5	0.045	VI
SAN JACINTO-ANZA	54.7(88.1)	7.2	0.050	VI
OAK RIDGE (Onshore)	58.7(94.5)	6.9	0.050	VI
SIMI-SANTA ROSA	60.0(96.6)	6.7	0.043	VI
ROSE CANYON	60.6(97.5)	6.9	0.037	V
HELENDALE - S. LOCKHARDT	61.0(98.2)	7.1	0.042	VI
ELSINORE-JULIAN	61.3(98.6)	7.1	0.042	VI
NORTH FRONTAL FAULT ZONE (East)	62.9(101.3)	6.7	0.041	V

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG. (Mw)	ESTIMATED MAX. EARTHQUAKE EVENT: PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT: EST. SITE INTENSITY MOD.MERC.
SAN CAYETANO	63.1(101.5)	6.8	0.043	VI
PINTO MOUNTAIN	64.8(104.3)	7.0	0.037	V
SAN ANDREAS - Carrizo	65.2(104.9)	7.2	0.042	VI
LENWOOD-LOCKHART-OLD WOMAN SPRGS	74.7(120.2)	7.3	0.039	V
SANTA YNEZ (East)	75.0(120.7)	7.0	0.032	V
JOHNSON VALLEY (Northern)	78.2(125.9)	6.7	0.025	V
SAN ANDREAS - Coachella	78.7(126.7)	7.1	0.032	V
VENTURA - PITAS POINT	79.7(128.2)	6.8	0.034	V
OAK RIDGE(Blind Thrust Offshore)	79.8(128.5)	6.9	0.036	V
CHANNEL IS. THRUST (Eastern)	81.7(131.5)	7.4	0.050	VI
GARLOCK (West)	81.8(131.6)	7.1	0.031	V
LANDERS	82.1(132.1)	7.3	0.036	V
BURNT MTN.	83.0(133.6)	6.4	0.019	IV
GRAVEL HILLS - HARPER LAKE	83.1(133.7)	6.9	0.027	V
SAN JACINTO-COYOTE CREEK	83.3(134.1)	6.8	0.025	V
EUREKA PEAK	84.1(135.3)	6.4	0.019	IV
M.RIDGE-ARROYO PARIDA-SANTA ANA	84.4(135.8)	6.7	0.030	V
MONTALVO-OAK RIDGE TREND	85.1(136.9)	6.6	0.027	V
EMERSON So. - COPPER MTN.	85.4(137.5)	6.9	0.026	V
PLEITO THRUST	86.1(138.6)	7.2	0.041	V
RED MOUNTAIN	88.5(142.4)	6.8	0.030	V
BLACKWATER	88.9(143.1)	6.9	0.025	V
EARTHQUAKE VALLEY	89.1(143.4)	6.5	0.019	IV
CALICO - HIDALGO	89.6(144.2)	7.1	0.028	V
BIG PINE	90.5(145.7)	6.7	0.021	IV
GARLOCK (East)	93.8(151.0)	7.3	0.031	V
WHITE WOLF	95.5(153.7)	7.2	0.037	V
SANTA CRUZ ISLAND	95.9(154.4)	6.8	0.028	V
PISGAH-BULLION MTN.-MESQUITE LK	96.7(155.7)	7.1	0.026	V

-END OF SEARCH- 69 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE WHITTIER FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 0.6 MILES (1.0 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.7483 g

ATTACHMENT 2

VARIOUS CHARTS USED IN SEISMIC DISPLACEMENT ANALYSIS

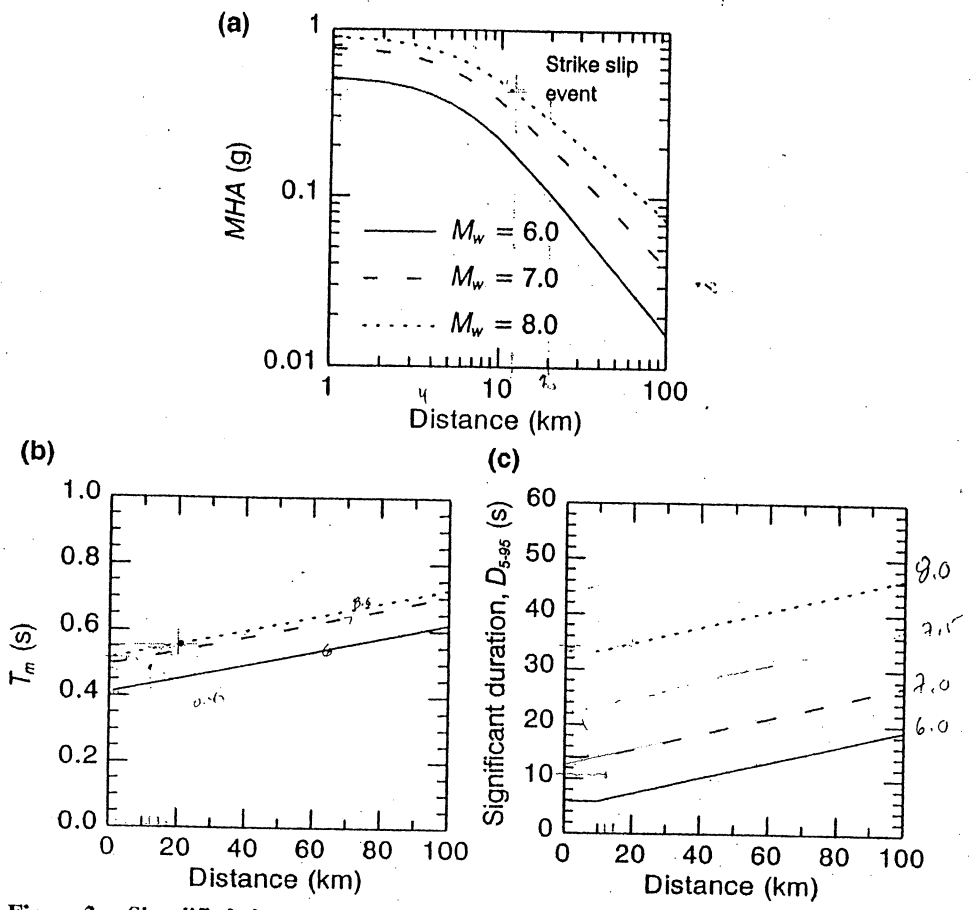


Figure 2. Simplified characterization of earthquake rock motions: (a) intensity, *MHA* for strike-slip faults (for reverse faults, use 1.3×*MHA* for $M_w \geq 6.4$ and 1.64×*MHA* for $M_w = 6.0$, with linear interpolation for $6.0 < M_w < 6.4$) (Abrahamson and Silva 1997); (b) frequency content, T_m (Rathje et al. 1998); (c) duration, $D_{5\text{-}95}$ (Abrahamson and Silva 1996).

A unit weight profile based upon direct measurements of initial weight upon placement; in situ measurements from boreholes and test trenches; inferred values from SASW measurements based on a correlation between depth, V_s, and calibrated unit weights from borehole data; and one-dimensional (1-D) compression tests on large (754 mm) reconstituted samples was also recently developed (Augello et al. 1997). The unit weight profile is 11 kN/m^3 at a depth of 0 m, 14 kN/m^3 at 24 m, and 15 kN/m^3 at and beyond 90 m.

The installation of a pair of accelerometers at the OII landfill in 1987 provided a unique opportunity to evaluate the shear modulus reduction and damping characteristics of solid-waste through back-analysis. Several investigators (e.g. Idriss et al. 1995;

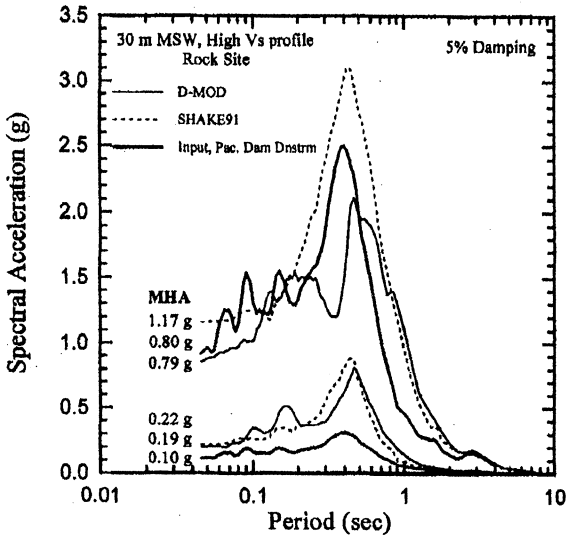


FIG. 1. D-MOD and SHAKE91 Comparison at Two Acceleration Levels

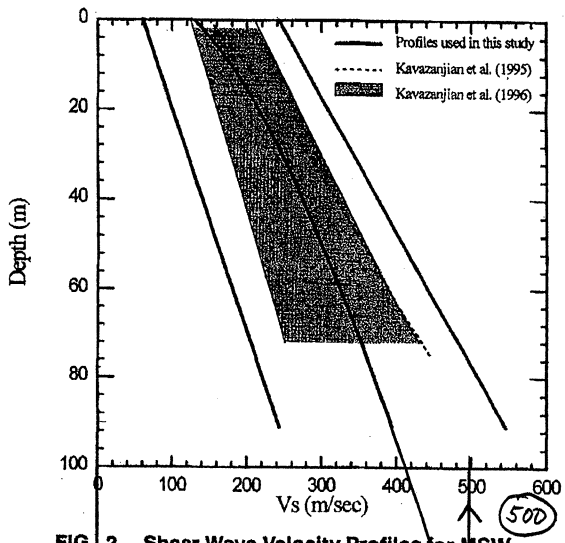


FIG. 2. Shear Wave Velocity Profiles for MSW

well-documented case histories, such as Treasure Island during the Loma Prieta earthquake and the Wildlife Liquefaction site, have validated the use of D-MOD for ground response analysis (Matasovic 1993).

The use of a 1D model to represent the seismic response of an earth/waste fill has been discussed in Vrymoed and Calzascia (1978), Elton et al. (1991), and Bray et al. (1996), and it has been found that dynamic shear stresses near the base of a two-dimensional (2D) earth/waste fill can be approximated reasonably well with 1D analysis. Capturing the cover response is more tenuous, but as the primary focus of the present study is to examine base sliding and key factors affecting seismic response (other than 2D geometry effects for cover systems), the use of 1D analytical procedures is judged to be appropriate.

Cases Analyzed

The nonlinear analyses performed in this study encompassed a large number of landfill configurations to allow evaluation of the relative importance of key parameters on the seismic response of a MSWLF. The landfill configurations included waste heights (H) of 10 m, 20 m, 30 m, 45 m, 60 m, and 90 m, and three shear wave velocity (V_s) profiles (Fig. 2), resulting in initial 1D fundamental periods (T_s-waste = $4H/V_s$, where H = height of waste fill and V_s = average initial shear wave velocity of the waste fill) ranging from 0.17 s to 2.74 s. Recent shear wave velocity measurements at six MSWLFs in southern California indicate that the mean shear wave velocity of municipal solid waste is generally stiffer than previously thought and lies within the Kavazanjian et al. (1996) band shown in Fig. 2. Based on these data, as well as data from other landfills, the lower, medium (best), and high V_s profiles shown in Fig. 2 were used as reasonable variations.

The unit weight of MSW was selected to vary from 6.3 kN/m^3 (40 pcf) at the surface to 11.9 kN/m^3 (75 pcf) at a depth of 45 m. Below this depth, the unit weight remained constant. These values are consistent with those recommended by Kavazanjian et al. (1995). Fig. 3 shows the strain-dependent shear modulus reduction and damping curves used for MSW, as recommended by Kavazanjian et al. (1995). More recent studies [e.g., Idriss et al. (1995); Matasovic et al. (1995); Augello et al. (1998)] have indicated that MSW may respond more elastically than initially thought. Therefore, analyses were also performed with the Vucetic and Dobry (1991) shear modulus reduction and damping curves for a clay with a plasticity index of 30. For these analyses, the maximum shear strain in the waste fill typically ranged from 0.2% to 2%, and the maximum shear stress never exceeded the dynamic strength of waste fill [i.e., an effective friction angle of 35°, Augello et al. (1995b)].

Three site profiles represented disparate landfill foundation conditions: rock, shallow sand, and deep soft clay. The rock site had 3 m of weathered rock (V_s = 760 m/s) overlying hard bedrock. The sand site had 30 m of medium dense sand overlying bedrock. The shear wave velocity profile in the sand varied with overburden pressure and ranged from 135–300 m/s for low waste fill heights (10–20 m) to 350–400 m/s for high waste fill heights (60–90 m). The deep, soft clay site contained 21 m of soft clay, which was overlain by 3 m of stiff clay and underlain by 67 m of stiff clay over bedrock. The shear wave velocity of the soft clay was varied with overburden pressure with V_s = 100–200 m/s for low waste fill heights and V_s = 150–230 m/s for high waste fill heights. The stiff clay was varied in the range of 250–425 m/s. Modulus reduction and damping curves proposed by Seed et al. (1984) for sand and Vucetic and Dobry (1991) for clay were used, with reasonable unit weight profiles.

Four dissimilar baseline rock motions were selected to study the effects of the input earthquake motion characteristics. Two of these records are from the western United States, one is from eastern Canada, and one is a synthetic record, developed by Abrahamson (personal communication, Dec. 1, 1995) for the analysis of the west span of the Oakland–San Francisco Bay Bridge. Significant duration (Trifunac and Brady 1975) ranged from 4.4 to 25 s for these records from Moment Magnitude 5.8, 6.7, 6.9, and 8.0 earthquakes. Fig. 4 shows the normalized acceleration response spectra for the four baseline motions and presents key characteristics of these ground motions. The frequency content of these motions is quite different, and they cover a reasonably wide range of possible input motions. Mean period (T_m) is used, as well as predominant period (T_p). T_m is defined as (Rathje et al. 1998)

$$T_m = \frac{\sum_i C_i^2 \cdot \left(\frac{1}{f_i}\right)}{\sum_i C_i^2} \quad \text{for } 0.25 \text{ Hz} \le f_i \le 20 \text{ Hz} \qquad (1)$$

where C_i = Fourier amplitudes of entire accelerogram; and f_i = discrete Fourier transform frequencies between 0.25 and 20

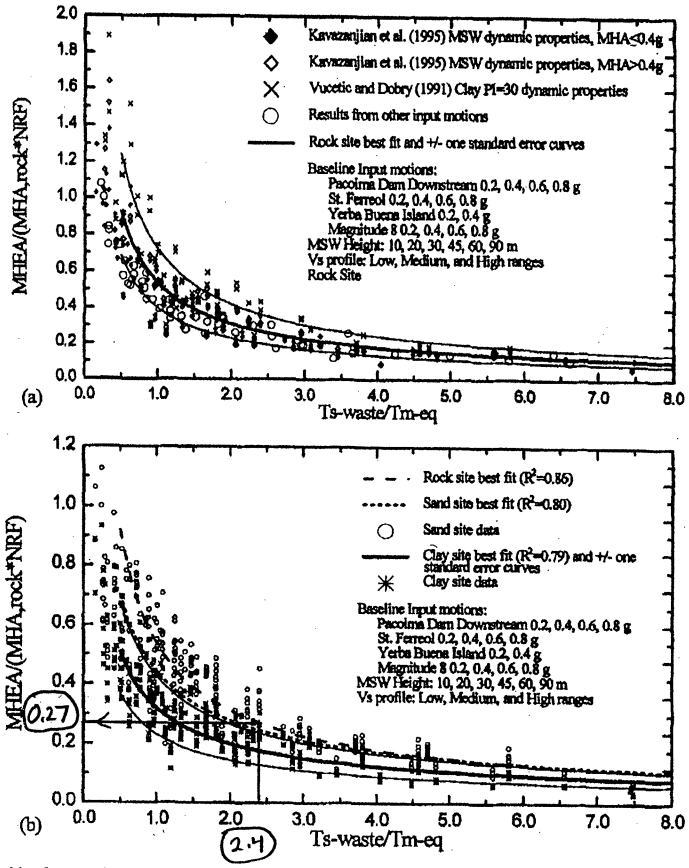


FIG. 7. Normalized Maximum Horizontal Equivalent Acceleration versus Normalized Fundamental Period of Waste Fill: (a) Rock Site; (b) All Sites

stiffnesses of this site category is close to that used for waste fill.

The nonlinear response factor captured the nonlinear variation in seismic loading across a range of ground motion intensities. In Fig. 7, the MHEA at the base of the landfill normalized with respect to the MHA and corresponding NRF of the input rock motion is plotted against the initial fundamental period of the waste fill (T_s-waste) normalized by the mean period of the input rock motion (T_m-eq). Introduction of the nonlinear response factor and replacement of the predominant period by the mean period in this normalization reduced the variation of the data about the median relationship (i.e., R^2 increased from 0.74 to 0.86). For the rock site cases shown in Fig. 7(a), the data (which include 14 rock motions ranging in intensity from $0.2g$ to $0.8g$, three V_s profiles, two pairs of modulus reduction and damping curves, and six waste fill heights, all together 324 analyses) follow a well-defined trend, except near the resonance condition (T_s-waste/T_m-eq < 1). Note that due to modulus reduction, resonance does not occur at $T_s/T_m = 1$, because T_s is defined as the initial (small strain) fundamental period of the waste fill system. A degraded T_s, as was used by Makdisi and Seed (1978), is difficult to define in a fully nonlinear analysis, and attempts to estimate it with an equivalent-linear approximation did not reduce the scatter. As a check, additional analyses were performed with three landfill configurations using an additional 19 recorded and synthetic high intensity rock motions, and the consistency of the results indicates that Fig. 7(a) is applicable for motions other than those used in this sensitivity study.

Although Fig. 7(a) highlights the importance of the fundamental period of the waste fill (i.e., its shear wave velocity and height), a number of other trends are important. For instance, to a lesser degree, the modulus reduction and damping curves used to represent the waste fill's response at larger strains are important, with the slower reducing Vucetic and Dobry (1991) PI = 30 cohesive soil curves giving uniformly higher responses at comparable T_s/T_m values than analyses performed using the Kavazanjian et al. (1995) waste fill curves.

Site condition effects are displayed in Fig. 7(b). Regression curves for the rock, sand, and clay site results for the various landfill configurations and input rock motions described previously are shown in this figure. In terms of MHEA, the MSWLF responses at rock and sand sites are comparable, but the response at clay sites is lower. At significant levels of shaking, nonlinearity within the deep, soft clay reduces the intensity of the seismic loading. Due to the long period motion amplification at deep, soft clay sites [Fig. 5(b)], these sites may not necessarily be less critical in terms of earthquake-induced displacements, and this will be discussed later in this paper. Fig. 7 is not meant to replace site-specific seismic response analyses; however, it does provide useful insight on the importance of the waste fill's dynamic characteristics and the input rock motion's intensity and frequency content on the calculated MHEA. As this graph has been prepared with normalization parameters that may be estimated based on available information for many projects, Fig. 7 may be used as a guide in the selection of an appropriate seismic coefficient for simplified pseudostatic and deformation analyses. It should be remembered, however, that duration of strong shaking is an important earthquake parameter that is not captured by MHEA.

For comparison with the normalized graph presented by

coupled analysis may predict smaller displacements than a coupled analysis for systems with larger values of k_y/k_{max}. In these cases, the displacements calculated from both analyses are generally small (i.e., less than a few centimeters). Differences between decoupled and coupled displacements for several input motions are shown in Fig. 9(c). For cases applicable to landfills where only minor earthquake-induced base displacements are generally tolerable (i.e., $k_y/k_{max} > 0.5$), the decoupled approximation is reasonable, so it will be used in this study to evaluate the factors influencing earthquake-induced displacements of MSWLFs. At lower k_y/k_{max} ratios (especially at higher T_s/T_m ratios) where the calculated displacements are large, the decoupled approximation is less reliable, and this may be important in evaluating earth dams.

Results

Calculated seismically induced permanent displacements (U) for the base sliding case for all landfill configurations [see Fig. 7(a)] sited on rock undergoing the 14 input rock motions listed are shown in Fig. 10. In this figure, U is plotted versus selected k_y/k_{max} ratios of 0.2, 0.4, 0.6, and 0.8. Additionally, three landfills were analyzed with another 19 input rock motions, so that 309 data points are plotted at each k_y/k_{max} ratio. There is considerable scatter, both with respect to results from different input motions and results from different landfill configurations undergoing the same input motion. Much of this scatter is expected. For example, the longer duration Magnitude 8 earthquake produces large calculated displacements, and the high frequency St. Ferreol motion produces relatively small displacements. Moreover, at the same intensity level, the Yerba Buena Island record generally produces larger displacements than the Pacoima Dam Downstream record because of its significant long period motion, which better matches the long period response characteristics of most waste fills. For a given input motion, significantly larger displacements are calculated for landfill configurations with stiffer response characteristics that more closely match the short period motions contained in most rock records. As the landfill's fundamental period increases, due to increasing height or decreasing shear wave velocity, the calculated displacements decrease. This finding is consistent with the results presented in Fig. 7(a) and results presented in Augello et al. (1995a). In fact, at a specified k_y/k_{max} ratio, the calculated displacement is roughly proportional to MHEA, indicating that those factors that have been shown to affect MHEA also affect U. However, there is considerably more scatter in the calculated displacements, especially at higher MHEA values.

Several attempts were made to normalize the calculated displacement data presented in Fig. 10. These attempts were of limited success. The best normalization for the cases analyzed is shown in Fig. 11. In this figure, the calculated seismically induced permanent displacement is normalized by k_{max} (MHEA/g) and significant duration ($D_{5-95\%}$) of the input motion. MHEA has been shown to capture the important effects of earthquake intensity and frequency content (e.g., Fig. 7), and significant duration captures another key ground motion characteristic. The normalized displacement decreases with increasing k_y/k_{max}, and shows considerably less inter- and intraearthquake scatter. Hence, an order-of-magnitude estimate of earthquake-induced displacement can be made given an estimate of the intensity (MHA), frequency content (T_m), and duration ($D_{5-95\%}$) of the design rock motion, and the dynamic response characteristics (T_s) and strength (k_y) of the landfill. With this information, the seismic coefficient k_{max} (which is MHEA/g) can be estimated using Fig. 7(a), and the seismically induced displacement (U) can then be estimated using Fig. 11.

Site effects are apparent in Fig. 12. For both the Pacoima Dam Downstream and Synthetic Magnitude 8 rock motions scaled to MHAs of 0.2, 0.4, 0.6, and 0.8g, the upper bound, median, and lower bound calculated seismically induced permanent displacements are shown for all landfill configurations sited on rock, sand, and deep soft clay. For these input motions, the median and upper bound displacements are significantly higher for cases where the MSWLF is situated atop a deep soft clay foundation. Even the sand site produces significantly larger displacements than the rock site at low k_y/k_{max} values. Hence, site conditions are important in evaluating seismically induced permanent base displacements. Note, however, that the larger displacements calculated at soft soil sites for a specified k_y/k_{max} ratio are offset by the results shown in Fig. 7(b), indicating that deep soft clay sites produce lower k_{max} values for identical rock motions and landfill configurations. Thus, for identical landfill configurations and rock motions, the base sliding displacement calculated at soft sites is comparable to that calculated at stiff sites (i.e., only slightly higher when $k_y < 0.1$, but slightly lower at higher k_y values).

Calculated earthquake-induced cover displacements for the

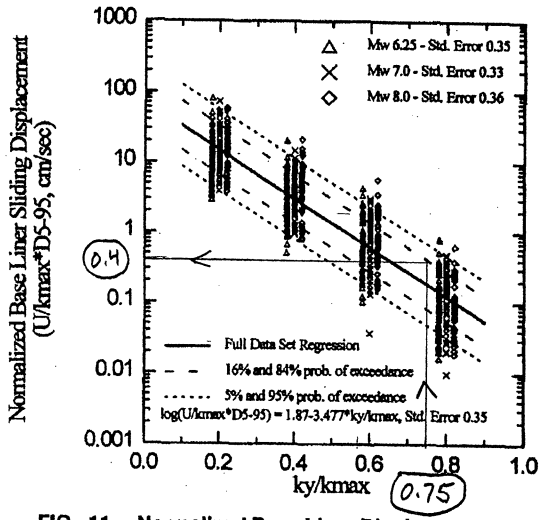


FIG. 11. Normalized Base Liner Displacements

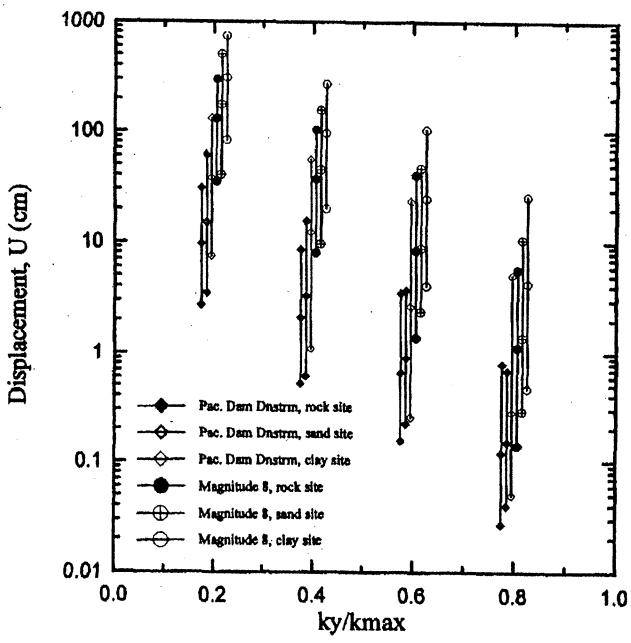


FIG. 12. Site Condition Effects on Base Liner Displacements

ENVIRONMENTAL IMPACT REPORT FOR THE RELOOC STRATEGIC PLAN-OLINDA ALPHA LANDFILL IMPLEMENTATION

RESPONSES TO COMMENTS REPORT

State Clearinghouse Number 2004011055

Prepared for:
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October 2004

RESPONSES TO COMMENTS
DRAFT EIR NO. 588
SCH No. 2004011055

1.0 PUBLIC NOTICE

The County of Orange, Integrated Waste Management Department (IWMD) submitted the Draft Environmental Impact Report (DEIR) for the proposed RELOOC Strategic Plan – Olinda Alpha Landfill Implementation Project to the State Clearinghouse (SCH) on June 16, 2004. A Notice of Completion (NOC) was posted at the SCH and a Notice of Availability (NOA) was posted at the Orange County Clerk Office on June 17, 2004. The NOC and NOA for the DEIR are provided in Attachment A. The NOA was advertised in the Orange County Register; the record of publication is also provided in Attachment A. The NOA was sent to interested individuals, and federal, state and local agencies. The distribution list for the DEIR is provided in Attachment B. The public review period for the DEIR was 45 days (June 17, 2004 through August 2, 2004). The DEIR was made available for public review at the following locations:

- Orange County Public Library, Brea Branch, 1 Civic Center Circle, Brea, CA 92821.
- Orange County Public Library, Irvine/Heritage Park Regional, 14361 Yale Avenue, Irvine, CA 92604.
- Orange County Public Library, Irvine/University Park, 4512 Sandburg Way, Irvine, CA 92612.
- Orange County Public Library, San Clemente Branch, 242 Avenida Del Mar, San Clemente, CA 92672.
- Orange County Public Library, San Juan Capistrano Regional, 31495 El Camino Real, San Juan Capistrano, CA 92675.
- UCI Main Library, Science Library, Receiving Dock, Building 520, Irvine, CA 92697
- Orange County Public Library, Laguna Niguel Branch, 30341 Crown Valley Parkway, Laguna Niguel, CA 92677.
- California State Library Fullerton, Library/Document Section, 800 N. State College Blvd., Fullerton, CA 92831-3599.
- Orange County Library, Dana Point Branch, 33841 Niguel Road, Dana Point, CA 92629.
- IWMD Office, 320 North Flower Street, Suite 400, Santa Ana, CA 92703.

In addition, copies of the DEIR were also available for purchase either as a hard copy or on CDs.

2.0 SUMMARY OF WRITTEN COMMENTS RECEIVED DURING THE PUBLIC REVIEW PROCESS FOR THE DRAFT EIR

Written comments on the DEIR received during the public review period are included in this Section. Responses to these comments are provided following each comment letter. When a comment is made by multiple parties, the response is provided the first time the comment is made and all later similar comments are referred back to that response.

The format of the responses to all the comments is based on a unique letter and number code for each comment. The letter and number immediately following the letter refer to an individual agency, business, group, organization or member of the general public comment letter. The number at the end of the code refers to a specific comment within the individual letter. Therefore, each comment has a unique code assignment. For example, comment S1-1 is the first comment in letter S1.

Section 15204(a) of the California Environmental Quality Act (CEQA) Guidelines indicates that "When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR." Some of the comments received on the DEIR for the RELOOC Strategic Plan – Olinda Alpha Landfill Implementation Project raised issues which are not environmental issues or provided comments or opinions on the project unrelated to specific environmental issues. The responses to comments on the DEIR specifically focus on those comments that relate to potentially significant environmental issues, consistent with the requirements of Section 15204(a) of the CEQA Guidelines.

The written comments received on the DEIR included letters and e-mails. Written comments on the DEIR for the proposed RELOOC Strategic Plan – Olinda Alpha Landfill Implementation Project were received from the following:

2.1 WRITTEN COMMENTS RECEIVED FROM FEDERAL AGENCIES

F1 United States Army Corps of Engineers - Los Angeles District (e-mail, June 29, 2004).
F2 United States Fish and Wildlife Service/California Department of Fish and Game (August 2, 2004).

2.2 WRITTEN COMMENTS RECEIVED FROM STATE AGENCIES

S1 State of California Department of Transportation - District 12 (June 24, 2004).
S2 Southern California Association of Governments (July 7, 2004).
S3 California Department of Toxic Substance Control (July 30, 2004).
S4 Wildlife Corridor Conservation Authority (August 2, 2004).
S5 California Department of Parks and Recreation (July 30, 2004).
S6 California Integrated Waste Management Board (July 30, 2004).
S7 State of California Governor's Office of Planning and Research (August 3, 2004).

Note: California Department of Fish and Game comments are addressed in the joint Letter F2.

2.3 WRITTEN COMMENTS RECEIVED FROM REGIONAL AND LOCAL AGENCIES

R1 City of Lake Forest (July 26, 2004).
R2 County of Orange Health Care Agency (August 2, 2004).

R3 City of Brea (August 2, 2004).
R4 City of Anaheim (August 4, 2004).
R5 City of Fullerton (July 29, 2004).

2.4 WRITTEN COMMENTS RECEIVED FROM BUSINESSES, GROUPS AND ORGANIZATIONS

B1 Hills for Everyone (July 31, 2004).

2.5 WRITTEN COMMENTS RECEIVED FROM MEMBERS OF THE GENERAL PUBLIC

P1 Warren Collier (e-mail, June 29, 2004).
It should be noted that the following people submitted a letter ~~the~~ identical to letter P1; copies of those letters are provided in Attachment C.

Jodi Savino	Nicole Scheriber	Karen Hopkins	Natalie Vallejo
Won Yu	Danny Scheriber	Keith Davidson	
MW Kim	Monica Enrique	Debbie Lindblom	
Robert Kay	Andra Cullen	Johnathon T. Boyce	
Michael Ajemian	Co Huynh	Warren LaRose	
Brad Byrnes	Alison Bergquist	Kathy Steinke	
Siska Utama	Kim Byrnes	D Dapkus	
Laura Piroutek	Dorothy Akerblom	Bonnie Diplock	
Mary Jane Piroutek	Sherry	Beth Mooney	
Gary Piroutek	Joy Dean	Jaimee Hubert	
Martha Piroutek	Lisa Alford	Tamara Martin	
Alyse Adams	Demetrio Alford	Josh Hubert	
HD Foley	Tina Johnson	Barbara Grattan	
Carol Heyer	Zeena Adal	Barbara Arczynski	
Mark Jasperson	Wylie Strohl	George Pascarzi	

P2 Jayanthi Iyengar (e-mail, July 18, 2004).
It should be noted that the following people submitted the identical letter as letter P2; copies of those letters are provided in Attachment D.

Ramon & Cynthia Valdez	Jack & Marianne Keating	Dr. & Mrs. Gary Piroutek	Tina Johnson
Anthony Cardinale	William Holtzen	Al Bertulli	Shannon Cronin
Andra Cullen	Robert Lawton	Gwen Murray	Art Hutton
Jim Dower	Donald Parker	Rebecca Vargas	

P3 Tammy Martinez (e-mail, July 19, 2004).
P4 Teresa B. Daxon (e-mail, July 19, 2004).
P5 Melanie Schlotterbeck (July 28, 2004).
It should be noted that the following people submitted the identical comment letter as letter P5; copies of those letters are provided in Attachment E.

Mr/Mrs Fredric Feldman
Peter/Opal Kurtz
Carol Flanders
Martha Chambers
Maurice Scott
Janet/Mark Zeko
Ted/Lauren Bryan
David Villancio-Wolter
Karl Reitz
Mary Beth Carpenter
Cheryl/Joe Mendoza
Sandra Schmidth
Keith Bowden
Ralph/Pat Richardson
Gale Hallsmann
Greg/Joanne Tagliaferri
Amy Jarnufowski
Pat Wright
Sandra/Russ Bahlenhorst
Charles/Donna Austin
Duke Shea
Denise Fasheh
The McMillians
Georgia Baumeister
Carl/Betty Hillquist
Gloria Carter
Joanne Lusk
Eloise Krivosheia
Karin Staddon
Mr/Mrs Harry Miller
Mr/Mrs Larry Shannon
Joe Beattie
Craig Kamansky
Malvin Rygh
Frances Read
Linda Pomeroy
Matt Arno
Anne Noonan
Lori Diaz
James/Janet Green
Christopher/Doris Geoghegan
J Stack
Doug Buck
Leanna Bremer
Paul/Vicki Brewer
Louis Ragni
Heidi Zimmerman

Richard/Mowita Kennedy
Michael Slavich
Fredard Roman
Mr/Mrs Rodney Todd
Sung Baik
Ann Summers
Eugene/Becky Williams
E Brandt
Amy Marshall
Verelyn Prestage
Sue/Dick Knirk
Luanne Collins
Roy/Frances Hanks
Stella Causland
Kathleen Martin
Reed/Arlene Johnson
Leo Burke
John/Antoinette Palazzo
Markus/Nicole Seitz
John Barlass
Craig King
Sandra Ewer
Michelle Niro
Daniel Fehner
Ed Reed
Mike Lowe
Charles Hunter
Diane Taylor
Ron/Joyce Ulshafer
Rick/Ann Marshall
Robert Caldwell
Lenore Anrick
Carl Watts
Lynn Greene
Virginia Grantham
Linda/Eric Chapman
Hal/Maureen Clark
Mary/John Blaydes
Mr/Mrs Craig Baker
Mr/Mrs Blazek
James/Margaret Mc Millian
Evelyn Zucker
Ron Daley
Jean Chung
Kate Johnson
Ellen Mossey
Jack Rider

Gary/Arleen Dalgleish
Piroutek family
Claudia Muneo
Claudia Bushaw
Jacqueline Harrison
Steve Willis
David Ascencio
Rob/Leslie Urich
Kevin Bush
Howard McCart
Mike/Lorie April
Carol Cartwell
Greg Herr
Dana Riser
Jessie Palisin
Eileen Falkner
Kelley Smith
Elmer/Grace Chech
Steve/Janeen Henderson
M Tuttobene
William Mudden
Susan Espinosa
Hooper Family
Jack Coldran
Daniel Alvarez
Gregory Woodard
Diane Weifenbach
Ian Strachan
Kerry Aiederich
JS West
Denise Calhoun
Troy Mattisson
Troy/Pam Bellomy
Nick Arnold
Kathleen Jardin
David This
T Schumacher
Cindy Luna
Henry Beers
Ed Schumann
Bridgette/Robert Pinsky
Dirk/Tricia Darling
Dick/Peggy Heard
Christie Russell
David Elliot
J O'Brien
Marsha Lombard

Roger Van Oppens
D Long
Holly McKnight
Laura Joseph
Pam Lopez
Tony Bell
Crystal Romez
Mary Clark
John/Jeanne Back
James Albert
Margee Hills
Donna Eisenberg
Linda Acosta
Triner & Schultz
Harold Green
Gayle Catalde
Mary Glaser
Kristen Rowland
R. Stephen Simons
Barry Friedman
Paul/Kay Madore
Alice Buckles
Betty Elsing
P. Allen
Allen Quirk
Eric/Anna Head
Harold Ehlers
Norma Allen
Elizabeth Strahan
Carol Horvath
Gloria Schlaepfer
Teresa Stuart
Tim McCallister
Lionel Soto
Marian Sussman
Ms I Spiegl
Brian Helms
Gary Riehle
Susan Grlesbach
Eric Parra
Marjorie Townsend
Rod/Kris St. Clair
Elhe Crutchfield
Diana Johnson
Eric Johnson
Dave Pebley
Veronica Fewol

Michelle Feamster	Gary/Kathryn Hancock	Lori Rush	David Norris
Eric Eichinger	Michelle/Cliff Owens	Denise Eastlin	Trish Hocking
Leslie Maul	Marilyn Lasker	Smita Shah	Tom Adamski
David/Erin Wright	Kathryn Branman	Kellie Tripp	Wendy Baker
Melissa Clifford	Milt/Jean O'Connell	Armando Esparza	Mark Strom
Jane O'Brien	Glenn/Nancy Goldstein	Mark Bartholome	Chris Jamison
Herbert Ertel	Don/Karen Bettencourt	Mildred Crow	Charlie Glancy
Tom Dunford	Ralph Jakwerth	Pauline Rogers	Peter Eymert
Ginger Krelle	Athrur King	Dorothy Lamb	

P6 Ralph Heimann (e-mail, August 1, 2004).
P7 Tina Johnson (e-mail, August 2, 2004).
P8 David Villancio-Wolter (e-mail, August 2, 2004).
P9 Keith E. Fullington (e-mail, August 3, 2004).
P10 R. Dean Whinery B. (July 31, 2004).
P11 Jim Dower (e-mail, July 18, 2004).
P12 Art Hutton (e-mail, July 18, 2004).
P13 William Holtzen (e-mail, July 18, 2004).
P14 Andra Cullen (e-mail, July 19, 2004)
P15 Al Bertulli (e-mail, July 19, 2004).
P16 Dr. and Mrs. Gary M. Piroutek (e-mail, July 19, 2004).
P17 Jack and Marianne Keating (e-mail, July 20, 2004).
P18 Cynthia and Ramon Valdez (e-mail, July 21, 2004).
P19 Rebecca Vargas (e-mail, July 22, 2004).
P20 Gogi Berger (August 2, 2004).
P21 Robert E. Zlotnik (August 2, 2004).
P22 Miles Bush (August 6, 2004).

It should be noted that there were 93 comment letters submitted after August 2, 2004 end of the 45 day review period. These late comment letters included two from local agencies and 91 from members of the general public. Because the comment letters submitted by the City of Anaheim and the City of Fullerton raised new issues of concern regarding the proposed project, they were included in Section 2.3 (above) and were provided with responses. The other 91 comment letters raised issues of concern that were previously addressed by other comment letters and were not provided with separate responses. These 91 late comment letters were received from the parties listed below and copies of these comments are included in Attachment F.

Glen and Ethel Hall (August 3, 2004).	Lionel Soto (August 5, 2004).
J O'Brien (August 3, 2004).	Marian Sussman (August 5, 2004).
Marsha Lombard (August 3, 2004).	Hal/Maureen Clark (August 5, 2004).
Lori Rush (August 3, 2004).	Milt/Jean O'Connell (August 5, 2004).
Denise Eastlin (August 3, 2004).	Gary Riehle (August 5, 2004).
Smita Shah (August 3, 2004).	Carol Horvath (August 5, 2004).
Kellie Tripp (August 3, 2004).	Miles Bush (August 6, 2004).
Armando Esparza (August 3, 2004).	Susan Grlesbach (August 6, 2004).
Mark Bartholome (August 3, 2004).	Eric Parra (August 6, 2004).
Mildred Crow (August 3, 2004).	Trish Hocking (August 6, 2004).

Mark Strom (August 3, 2004).	Rod/Kris St. Clair (August 6, 2004).
Tom Adamski (August 3, 2004).	Elhe Crutchfield (August 6, 2004).
Linda Acosta (August 3, 2004).	Diana Johnson (August 6, 2004).
D Long (August 3, 2004).	Eric Johnson (August 6, 2004).
Holly McKnight (August 3, 2004).	Gary E. J. Kain (August 9, 2004).
Laura Joseph (August 3, 2004).	Al Bertulli (August 9, 2004).
Pam Lopez (August 3, 2004).	Dave Pebley (August 9, 2004).
Carol Knobbe (August 3, 2004).	Veronica Fewol (August 9, 2004).
Gary/Arleen Dalgleish (August 3, 2004).	Michelle Feamster (August 9, 2004).
Mary Clark (August 3, 2004).	Marjorie Townsend (August 9, 2004).
John/Jeanne Back (August 3, 2004).	Harold Sintov (August 9, 2004).
James Albert (August 3, 2004).	Tom Dunford (August 10, 2004).
Margee Hills (August 3, 2004).	Ralph Jakwerth (August 11, 2004).
Donna Eisenberg (August 3, 2004).	Pauline Rogers (August 11, 2004).
Roger Van Oppens (August 3, 2004).	Peter Eymert (August 11, 2004).
Triner & Schultz (August 3, 2004).	Ginger Krelle (August 11, 2004).
Harold Green (August 3, 2004).	Athrur King (August 13, 2004).
Gayle Catalde (August 3, 2004).	Dorothy Lamb (August 13, 2004).
Mary Glaser (August 3, 2004).	Shannon Cronin (e-mail, August 16, 2004).
Steve/Janeen Henderson (August 4, 2004).	Jeff Denchfield (August 19, 2004).
R. Stephen Simons (August 4, 2004).	Katherine Gomez (August 19, 2004).
Barry Friedman (August 4, 2004).	Barbara Cote (August 20, 2004).
Paul/Kay Madore (August 4, 2004).	Linda Sargent (August 23, 2004).
Dirk/Tricia Darling (August 4, 2004).	Teresa Townsend (August 23, 2004).
Betty Elsing (August 4, 2004).	Janet Johnson (August 24, 2004).
P. Allen (August 4, 2004).	Michael Green (August 26, 2004).
Allen Quirk (August 4, 2004).	Patricia Schwind (August 27, 2004).
Eric/Anna Head (August 4, 2004).	Jan Taylor (August 30, 2004).
Harold Ehlers (August 4, 2004).	Sharon Farrell (August 30, 2004).
Norma Allen (August 4, 2004).	Nancy/Jim Novak September 1, 2004).
Elizabeth Strahan (August 4, 2004).	Paul/Nita Causey (September 2, 2004).
Carol Horvath (August 5, 2004).	Stan Raskovic (September 8, 2004).
Gloria Schlaepfer (August 5, 2004).	Lester Anderson (September 9, 2004).
Teresa Stuart (August 5, 2004).	Kim Jensen (September 13, 2004).
Tim McCallister (August 5, 2004).	Gwen Murray (e-mail, September 14, 2004).
	Phli, Shirley & Janine Hooper (September 27, 2004).

FEDERAL AGENCIES

Flores, Jerry

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Tuesday, June 29, 2004 1:45 PM
To: Freeman, Roger; Richmond, Bob; Arnau, John; Christine Arbogast (E-mail); Flores, Jerry
Cc: McClanahan, Suzanne
Subject: FW: Olinda Alpha Landfill Expansion Project

F 1

FYI
-----Original Message-----
From: Amirhosseini, Susan **On Behalf Of** OAL, RELOOC
Sent: Tuesday, June 29, 2004 1:30 PM
To: Hull, Ray
Cc: Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion Project

-----Original Message-----
From: Farrar, Corice J SPL [mailto:Corice.J.Farrar@spl01.usace.army.mil]
Sent: Tuesday, June 29, 2004 11:35 AM
To: 'RELOOC-OAL@iwmd.ocgov.com'
Subject: Olinda Alpha Landfill Expansion Project

Ray Hull:

The purpose of this email is to respond to the Notice of Availability for an EIR, received in our office June 21, 2004, which was prepared by the County of Orange IWMD for the proposed Olinda Alpha Landfill Expansion Project. Although we did not receive an EIR for review, should the proposed project impact one or more areas within the Corps jurisdiction, a Section 404 permit for discharges of fill material to waters of the United States would be needed prior to conducting work affecting waters. F1-1

We encourage pre-application coordination and Corps Regulatory staff are available for any pre-application coordination meetings. We look forward to receiving additional information as it becomes available. Should you have any questions about our program, please contact me at the number shown below. Thank you. F1-2

Cori Farrar
Project Manager
Regulatory Branch
U.S. Army Corps of Engineers - Los Angeles District

Mailing Address: P.O. Box 532711, Los Angeles, CA 90053
Tel: 213-452-3296; Fax: 213-452-4196
E-mail: corice.farrar@usace.army.mil
COE website: www.spl.usace.army.mil/regulatory/

F1 RESPONSES TO COMMENTS FROM THE UNITED STATES ARMY CORPS OF ENGINEERS - LOS ANGELES DISTRICT DATED JUNE 29, 2004

F1-1 During the field review of the project site, an assessment was conducted to determine the presence of potential jurisdictional waters of the U.S. It was concluded that the project site did not contain any jurisdictional areas. Therefore, no impacts are anticipated to occur to resources within the jurisdiction of the Corps.

F1-2 Comment noted. No response necessary.

U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92009
(760) 431-9440
FAX (760) 918-0638

CA Dept. of Fish & Game
South Coast Regional Office
4949 Viewridge Avenue
San Diego, California 92123
(858) 467-4201
FAX (858) 467-4299

F2

In Reply Refer To:
FWS/CDFG-OR-3724.2

Ms. Linda Hagthrop
County of Orange
Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92703

AUG 2 2004

Re: Draft Environmental Impact Report (DEIR) for the Olinda Alpha Landfill Expansion Project in Orange County, California

Dear Ms. Hagthrop:

The U.S. Fish and Wildlife Service (Service) and California Department of Fish and Game (Department) (collectively the Wildlife Agencies) have reviewed the DEIR for the Olinda Alpha Landfill expansion project in Orange County, California. We received the DEIR from the County of Orange Integrated Waste Management Department (IWMD) on June 18, 2004. The proposed landfill expansion will extend the life of the landfill from 2013 to 2021, raise the height of the landfill by an estimated 115 feet, and impact an estimated 33 additional acres of surrounding habitat. Impacted habitat would include 16.9 acres of chaparral, 10.6 acres of revegetated cut slope, 4.0 acres of mature coastal sage scrub, 1.3 acres of mature coast live oak woodland (interspersed with California black walnut), and 0.2 acres of non-native grasslands. Proposed mitigation includes the restoration of oak woodland, coastal sage scrub, and revegetated cut slope at a ratio of one acre restored for each acre impacted. We offer the following comments and recommendations regarding project-associated biological impacts based on our review of the DEIR and our knowledge of declining habitat types and species within Orange County.

F2-1

California Department of Fish and Game

The Department is identified as a Trustee Agency pursuant to the California Environmental Quality Act (CEQA) section 15386 and is responsible for the conservation, protection, and management of the State's biological resources. The Department also regulates alteration and impacts to streambeds, channels and banks (including riparian vegetation) through section 1600 *et seq.* of the California Fish and Game Code and administers the California Endangered Species Act (section 2050 *et seq.* of the California Fish and Game Code; "CESA"), which regulates the "take" of state-listed species and the habitats they require. The Department is also the principal state agency implementing the NCCP Program pursuant to section 2800 *et seq.* of the California Fish and Game

F2-2

Code, which allows regional, habitat-based conservation plans to be developed in concert with participating jurisdictions to aid in the preservation of sensitive biological resources. F2-2

U.S. Fish and Wildlife Service

The Service's primary mission is to "work with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people." Specifically, the Service administers the Endangered Species Act of 1973 (Act), as amended, and provides support to other Federal agencies in accordance with the provisions of the Fish and Wildlife Coordination Act. Section 7 of the Act requires Federal agencies to consult with the Service should it be determined that their actions may affect federally listed threatened or endangered species or their critical habitats. Section 9 of the Act prohibits the "take" (e.g., harm, harassment, pursuit, injury, kill) of federally listed wildlife. Take incidental to otherwise lawful activities can be permitted under the provisions of section 7 (Federal consultations) and section 10 (private permits) of the Act. F2-3

Wildlife Agencies' Comments and Recommendations

1) The proposed mitigation ratios for impacts to sensitive habitats are too low. The Department generally recommends the following mitigation ratios for habitat types that would be impacted by the proposed project: At least three acres of coast live oak woodland should be restored or conserved for each acre impacted (3:1 mitigation ratio); at least two acres of coastal sage scrub should be conserved or restored for each acre impacted (this ratio should be higher in cases where the habitat is occupied by federal or state-listed species); at least one acre of chaparral should be conserved or restored for each acre impacted; at least one-half acre of annual grassland should be conserved for each acre impacted. The Service supports these recommendations. Replacement of the revegetated cut slope at a 1:1 ratio is acceptable as this habitat is somewhat degraded and would not be present but for the efforts of IWMD. F2-4

The above ratios are designed to adequately mitigate impacts to sensitive habitat in the region and reflect the difficulty of recreating habitat that provides the same value to plants and animals as the original habitat. For example, proposed impacts to coast live oak woodland would remove mature trees that are an estimated 35 to 40 feet high. It will take decades for planted oak trees to reach this size and provide equivalent habitat value, and it is difficult to ensure that the restoration sites will ever provide an equivalent habitat value. Although toyon-sumac chaparral is still relatively common in the Chino/Puente Hills, a wide variety of sensitive species have been found in the habitat on site, and without mitigation, cumulative impacts to chaparral and associated wildlife will result in significant loss and degradation of the habitat in the region. F2-5

2) We recommend that a mitigation and restoration plan that incorporates the above recommendations be developed and submitted to the Department for review and approval. The mitigation plan should include details such as the locations where proposed conservation and restoration will occur, the methods to be used to prepare and plant the restoration sites, the length of time that monitoring and reporting will occur, and quantitative performance criteria that will be used to determine when the restoration sites are successful. F2-6

Because of the extent of proposed impacts to sensitive habitat and the difficulties associated with restoration on the landfill cap, it will likely be necessary to conserve and/or restore habitat at an offsite location. For example, it will not be possible to restore oak woodland on the landfill cap because of the limitations regarding rooting depth of vegetation on the cap. Conservation of off site habitat would also help mitigate impacts to wildlife movement (see below). F2-6

3) In its current state, the Olinda Alpha Landfill likely has a substantial impact on wildlife movement. Landfill activities have created a heavily disturbed area that extends over a mile into relatively undisturbed habitat in the Chino/Puente Hills. Since the remaining undeveloped portion of the Chino/Puente Hills is only about two miles wide (on the north/south axis), the landfill presents a substantial barrier to wildlife movement through the region. By enlarging the landfill and extending its life, the proposed project would extend the amount of time that this barrier to wildlife movement is in place and would expand the size of the barrier by making the landfill wider and taller. F2-7

Therefore, we recommend that IWMD develop a strategy to mitigate effects to wildlife movement. For example, off site conservation of undeveloped open space in the Chino/Puente Hills, particularly on the east side of Highway 57, would contribute to the long-term viability of the area for supporting wildlife species and movement. F2-8

4) Although the active portion of the Olinda Alpha Landfill is excluded from critical habitat for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, "gnatcatcher"), the area surrounding the landfill is currently designated as gnatcatcher critical habitat. The critical habitat boundary should be closely examined to determine whether the proposed project will impact critical habitat. If gnatcatcher critical habitat will be impacted, and the proposed project involves a federal action, such as funding or permitting, consultation with the Service may be required. F2-9

We appreciate the opportunity to comment on the DEIR for the Olinda Alpha Landfill expansion project. Please contact Jonathan Snyder of the Service at (760) 431-9440 and Warren Wong of the Department at (858) 467-4249 if you have any questions or concerns regarding this letter. F2-10

Sincerely,

for Karen A. Goebel
Assistant Field Supervisor
U.S. Fish and Wildlife Service

Donald R. Chadwick
Senior Environmental Scientist
California Department of Fish and Game

cc:
Kelly Schmoker, WCCA
Alyssa Ing, California State Parks

F2 RESPONSES TO COMMENTS FROM THE UNITED STATES FISH AND WILDLIFE SERVICE/CALIFORNIA DEPARTMENT OF FISH AND GAME DATED AUGUST 2, 2004

F2-1 Comment noted. No response necessary.

F2-2 Comment noted. No response necessary.

F2-3 Comment noted. No response necessary.

F2-4 The replacement ratios identified in the DEIR are proposed. The final replacement ratios will be established in consultation with the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). Because the proposed project will not begin until the year 2013, it is IWMD's intention to provide pre-mitigation for the biological impacts that would occur with the implementation of the proposed landfill expansion. IWMD will coordinate with USFWS/CDFG regarding pre-mitigation opportunities.

F2-5 Refer to response to comment F2-4, above. Mitigation for the significant adverse biological impacts of the proposed project were described in Section 5.12-12 in the DEIR. With the implementation of those mitigation measures, no avoidable significant adverse impacts to biological resources would remain after mitigation.

F2-6 As stated in mitigation measure B-1, the Integrated Waste Management Department (IWMD) shall prepare and submit a Mitigation Monitoring and Reporting Program (MMRP) to the CDFG for review and approval. As stated in mitigation measures B-2, the IWMD shall prepare and submit a Coastal Sage Scrub Mitigation Plan (CSSMP), to the CDFG for review and approval. With the implementation of mitigation measures B-1 and B-2, included in Section 5.12.12 of the DEIR, no significant adverse impacts to biological resources would remain after mitigation and, therefore, no further mitigation would be required.

F2-7 The 33-acre expansion area is part of the existing landfill property and is within the Puente-Chino Hills wildlife corridor. To determine the impacts to wildlife movement, the area surrounding the landfill expansion area must be considered. Immediately to the west is the active landfill, which creates conditions largely unsuitable for wildlife movement. Because of the existing landfilling activities, east-west wildlife movement is highly restricted in that area. Currently, east-west wildlife movement is occurring north of the landfill property, where fewer constraints to movement are present. The proposed eastern expansion of the landfill will shift landfilling activities a maximum of 440 feet directly east. Therefore, the landfill expansion is not expected to further reduce east-west wildlife movement.

The east border of the proposed expansion area is on the west-facing side of an existing ridgeline. Currently, any north-south wildlife movement in the vicinity of the expansion

area would be following this geographic feature, and would fall outside of the direct impact area for the proposed expansion. If wildlife were directly using the habitat within the expansion area for movement, there is abundant open space to the immediate east in Chino Hills State Park that would provide opportunities for continuing the north-south movement. Therefore, general north-south wildlife movement patterns in the vicinity of the expansion area are not anticipated to be directly impacted by the proposed project.

F2-8 As indicated in response F2-7, above, the proposed project would not result in significant adverse impacts to wildlife movement. Therefore, mitigation would not be required.

F2-9 A total of six protocol surveys for California gnatcatcher were conducted by Douglas Willick (Permit TE821404-3) and Gilberto Ruiz (Permit TE 840036-2) to determine presence/absence of this species within the 33-acre expansion area. These surveys covered an additional 200 feet beyond the 33-acre expansion boundary. These protocol surveys did not reveal the presence of this species in or immediately adjacent to the proposed expansion area. As such, no impacts to CAGN are expected to occur with project implementation.

F2-10 Comment noted. No response necessary.

STATE AGENCIES

DEPARTMENT OF TRANSPORTATION
District 12
3337 Michelson Drive, Suite 380
Irvine, CA 92612-8894

Flex your power!
Be energy efficient!

S1

June 24, 2004

Mr. Ray Hull
Orange County Department of
Integrated Waste Management
320 North Flower Street, Suite 400
Santa Ana, CA 92703

File: IGR/CEQA
SCH#: 2004011055
Log #: 1139B
SR #: 57, 142 & 90

Subject: Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation EIR

Dear Mr. Hull,

Thank you for the opportunity to review and comment on the **Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation EIR** dated June 20, 2004. This project is to propose both vertical and horizontal expansions of Olinda Alpha Landfill within the existing landfill property to meet the County's near term solid waste disposal needs. S1-1

Caltrans District 12 status is a review agency on this project, and has no comment. S1-2

Please continue to keep us informed of future developments, which could potentially impact the transportation facilities. If you have any questions or need to contact us, please do not hesitate to call Lan Zhou at (949) 756-7827. S1-3

Sincerely,

Robert Joseph

ROBERT F. JOSEPH
Chief of IGR/Community Planning Branch
District 12

c: Terry Roberts, Office of Planning and Research
Terri Pencovic, Caltrans HQ IGR/Community Planning

S1 RESPONSES TO COMMENTS FROM THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION - DISTRICT 12 DATED JUNE 24, 2004

S1-1 Comment noted. No response necessary.

S1-2 Comment noted. No response necessary.

S1-3 Comment noted. No response necessary.

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

S2

July 7, 2004

Mr. Ray Hull
County of Orange, Integrated Waste
Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

RE: SCAG Clearinghouse No. I 20040386 Regional Landfill Options for Orange County Strategic Plan—Olinda Alpha Landfill Implementation

Dear Mr. Hull:

Thank you for submitting the **Regional Landfill Options for Orange County Strategic Plan—Olinda Alpha Landfill Implementation** for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies. S2-1

We have reviewed the **Regional Landfill Options for Orange County Strategic Plan—Olinda Alpha Landfill Implementation**, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time. Should there be a change in the scope of the proposed Project, we would appreciate the opportunity to review and comment at that time. S2-2

A description of the proposed Project was published in SCAG's **June 16-30, 2004** Intergovernmental Review Clearinghouse Report for public review and comment. S2-3

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this Project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1867. Thank you. S2-4

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

S2 RESPONSES TO COMMENTS FROM THE SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS DATED JULY 7, 2004

S2-1 Comment noted. No response necessary.

S2-2 Comment noted. No response necessary.

S2-3 Comment noted. No response necessary.

S2-4 Comment noted. No response necessary.

S3

Department of Toxic Substances Control

5796 Corporate Avenue
Cypress, California 90630

Terry Tamminen
Agency Secretary
Cal/EPA

Arnold Schwarzenegger
Governor

July 30, 2004

Mr. Ray Hull
County of Orange
Integrated Waste Management Department (IWMD)
320 North Flower Street, Suite 400
Santa Ana, California 92703

DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY (RELOOC) STRATEGIC PLAN-OLINDA ALPHA LANDFILL IMPLEMENTATION PROJECT (SCH# 2004011055)

Dear Mr. Hull:

The Department of Toxic Substances Control (DTSC) has received your EIR document. Based on the review of the currently submitted document DTSC has comments as follows: S3-1

1) The EIR needs to identify and determine whether current or historic uses at the Olinda Alpha Landfill (OAL) site have resulted in any release of hazardous wastes/substances. The EIR states: "The OA Landfill is a Class III landfill permitted for the disposal of non-hazardous MSW."

2) The EIR needs to identify any known or potentially contaminated sites within the proposed Project area. S3-2 For all identified sites, the EIR should evaluate whether conditions at the site pose a threat to human health or the environment. A Phase I Assessment may be sufficient to identify these sites. Following are the databases of some of the regulatory agencies:

   - National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
   - CalSites: A Database primarily used by the California Department of Toxic Substances Control.

- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.
- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
- Leaking Underground Storage Tanks (LUST) / Spills, Leaks, Investigations and Cleanups (SLIC): A list that is maintained by Regional Water Quality Control Boards.
- Local County and City maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.
- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017; (213) 452-3908; maintains a list of Formerly Used Defense Sites (FUDS).

S3-2

3) The EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If hazardous materials/wastes were stored at the site, an environmental assessment should be conducted to determine if a release has occurred. If so, further studies should be carried out to delineate the nature and extent of the contamination, and the potential threat to public health and/or the environment should be evaluated. It may be necessary to determine if an expedited response action is required to reduce existing or potential threats to public health or the environment. If no immediate threat exists, the final remedy should be implemented in compliance with state regulations and policies.

S3-3

4) All environmental investigation and/or remediation should be conducted under a Work plan which is approved by the regulatory agencies that has jurisdiction to oversee hazardous waste cleanup. Previously submitted assessment reports, sampling results of related and site related documents should be summarized in the EIR.

S3-4

5) Proper investigation and remedial actions, if necessary, should be conducted at the site prior to the new vertical and horizontal expansion of OAL within the existing landfill property. S3-5

6) If any property adjacent to the project site is contaminated with hazardous chemicals, and if the proposed project is within 2,000 feet from a contaminated site, then the proposed development may fall within the "Border Zone of a Contaminated Property." Appropriate precautions should be taken prior to construction if the proposed project is within a "Border Zone Property." S3-6

7) If building structures, asphalt or concrete-paved surface areas or transportation structures are planned to be demolished, an investigation should be conducted for the presence of lead-based paints or products and asbestos containing materials (ACMs). If lead-based paints or products or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies. S3-7

8) The project construction may require soil excavation and soil filling in certain areas. Appropriate sampling is required prior to disposal of the excavated soil. If the soil is contaminated, properly dispose of it rather than placing it in another location. Land Disposal Restrictions (LDRs) may be applicable to these soils. Also, if the project proposes to import soil to backfill the areas excavated, proper sampling should be conducted to make sure that the imported soil is free of contamination. S3-8

9) Human health and the environment of sensitive receptors should be protected during the construction or demolition activities and due to the effects of the landfill. A Health Risk Assessment (HRA) of the site should be conducted to provide detailed information and studies for determining if there are, have been, or will be, any threatening releases of hazardous materials that may pose a risk to human health or the environment. The HRA should show all impacts to public health and safety and be conducted with the regulation and monitoring by federal, state and local agencies. The HRA should discuss the health impact to the surrounding residential housing developments, businesses and park lands. S3-9

10) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). S3-10

11) If it is determined that hazardous wastes are or will be generated and the wastes are (a) stored in tanks or containers for more than ninety days, (b) treated onsite, or (c) disposed of onsite, then a permit from DTSC may be required. If so, the facility should contact DTSC at (818) 551-2171 to initiate pre application discussions and determine the permitting process applicable to the facility. S3-11

12) If it is determined that hazardous wastes will be generated, the facility should obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. S3-12

13) Certain hazardous waste treatment processes may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA. S3-13

14) If the project plans include discharging waste water to storm drain, you may be required to obtain a waste water discharge permit from the overseeing Regional Water Quality Control Board. S3-14

15) If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted, and the government agency to provide appropriate regulatory oversight. S3-15

DTSC provides guidance for cleanup oversight, through the Voluntary Cleanup Program (VCP). For additional information on the VCP, please visit DTSC's web site at www.dtsc.ca.gov. S3-16

If you have any questions regarding this letter, please contact Ms.Teresa Hom, Project Manager, at (714) 484-5477 and email at thom@dtsc.ca.gov.

Sincerely,

Greg Holmes
Unit Chief
Southern California Cleanup Operations Branch - Cypress Office

cc: See next page

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Mr. Guenther W. Moskat, Chief
Planning and Environmental Analysis Section
CEQA Tracking Center
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

S3 RESPONSES TO COMMENTS FROM THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL DATED JULY 30, 2004

S3-1 The Olinda Alpha Landfill, as noted in the DEIR and in the comment, is a Class III landfill permitted for disposal of non-hazardous MSW. As indicated in the DEIR page 1-1, Section 1.1.3.1 (Operations), solid waste landfilling operations have occurred at the Olinda site since 1960. The landfill is only permitted to accept Class III solid waste materials and has never operated as a hazardous waste landfill. The Olinda Alpha Landfill is operated by IWMD in compliance with permits issued by the Regional Water Quality Control Board – Santa Ana Region, South Coast Air Quality Management District and the County of Orange Health Care Agency/Local Enforcement Agency with the concurrence of the California Integrated Waste Management Board. With the proposed expansion, the Olinda Alpha Landfill will continue to operate as a Class III solid waste landfill. The landfill will not accept hazardous waste materials.

S3-2 The Olinda Alpha Landfill is not located on a contaminated hazardous waste site, nor is the site included on any federal, state, regional or local regulatory agency list as a contaminated hazardous waste site.

S3-3 Comments noted. Refer to responses to comments S3-1 and S3-2, above, and S3-10, below.

S3-4 Comments noted. Refer to responses to comments S3-and S3-2, above, and S3-10, below.

S3-5 Comments noted. Refer to responses to comments S3-1 and S3-2, above, and S3-10, below.

S3-6 As indicated in the DEIR, page 1-1, Section 1.1.2 Project Location, the Olinda Alpha Landfill is surrounded by open space to the north and northwest, the Firestone Boy Scout Reservation to the north and northeast, Chino Hills State Park to the east and southeast, Olinda Ranch housing development to the south, and the future (i.e., approved not yet constructed) Tonner Hills housing development to the southwest. The Brea Green Recycling Facility (i.e., green waste recycling facility) is located immediately south of the landfill entrance. There are no contaminated properties or hazardous waste sites located immediately adjacent to the Olinda Alpha Landfill.

S3-7 The proposed project does not include the demolition of any buildings or structures that could contain asbestos or lead-based paints.

S3-8 Dirt being disposed at Orange County solid waste landfills is screened daily by landfill Waste Inspectors (WI), who regularly inspect the dirt stockpile areas. The WI's survey the dirt piles for petroleum or chemical odors (i.e., fuels/solvents/pesticides/chemicals) and for unusual discoloration (i.e., petroleum/metals/chemicals). Soil samples from suspect dirt piles may be field-tested with a portable "hydrocarbon vapor tester" to

determine the presence of flammable vapors, which would indicate whether or not the dirt pile was contaminated with a fuel or solvent. If a dirt pile is suspected of being contaminated with any hazardous or toxic material or substance; then the WI will attempt to identify the transporter in order to determine where the dirt came from and the identity of the generator. Acceptance of dirt loads from the generator will be stopped. The WI will then relay this information to an IWMD Materials Regulation Specialist (MRS), who will contact the generator and determine if the dirt is acceptable or not. If the transporter/generator cannot be identified, then the disposition of the contaminated soil becomes the responsibility of the landfill. Determination of the acceptability for disposal of suspect soil is made by an MRS who visits the site where the soil is being generated and inspects the soils in much the same way as the WI. Additionally, the MRS will direct the generator in the taking of soil samples under a "Chain of Custody" to be analyzed by an appropriate test method. In determining if the soil is acceptable, IWMD follows guidelines and limitations set forth by California EPA/DTSC and the California Regional Water Quality Control Board – Santa Ana Region. Also, various County and city departments may direct generators of soils which are suspected of contamination, to contact an MRS directly. The MRS will determine the acceptability for landfill disposal of those soils using procedures similar to those mentioned above. As a result of existing procedures, soils are properly sampled and disposed of in accordance with appropriate practices.

S3-9 Health risk assessments for both stationary and mobile sources were included in the DEIR, Section 5.6 Air Quality. The stationary and mobile source health risk assessments determined that the proposed project would not result in any significant impacts to human health.

S3-10 The Olinda Alpha Landfill operation does not and will not generate hazardous waste. However, if hazardous materials are brought to the landfill, they are removed and temporarily stored on-site. As stated in the DEIR, page 4-21, Section 4.5.5 Waste Composition, the Olinda Alpha Landfill operation has an existing hazardous materials screening program. This hazardous materials screening program includes monitoring refuse loads for hazardous materials by an inspector as each load is unloaded at the working face. The program also involves the random selection of commercial refuse vehicles at the scale house, which are then directed to a designated area for waste load inspection. Refuse is then spread from the load out in the designated load-checking area and visually inspected for hazardous materials. Vehicles identified as carrying prohibited wastes (i.e., hazardous materials, liquid wastes and other non-Class III wastes) are turned away. Hazardous materials that are segregated from the wastes through the load-check program or are found at the landfill working face are collected and stored temporarily at an on-site hazardous materials storage area. The hazardous waste storage area is specifically designed for hazardous waste storage and has secondary containment. This hazardous waste storage area is operated by Clean Harbors, under contract to IWMD. Hazardous wastes are stored on-site for a maximum of 90 days and are transported to a licensed treatment facility. The storage and removal of hazardous wastes at the project site is undertaken in compliance with Title 22 regulations. IWMD will continue to

comply with all pertinent federal, state and local regulations for the temporary storage and removal of hazardous materials.

S3-11 Comments noted. Refer to response to comment S3-10.

S3-12 Comments noted. Refer to response to comment S3-10.

S3-13 Hazardous waste treatment would not occur as part of the proposed project.

S3-14 IWMD will coordinate with the California Regional Water Quality Control Board (RWQCB) – Santa Ana Region to revise the existing National Pollutant Discharge Elimination System (NPDES) permit and Waste Discharge Requirements (WDRs) for the Olinda Alpha Landfill in accordance with Federal and State requirements for the protection of water quality.

S3-15 Comments noted. Refer to responses to comments S3-1 and S3-2. Demolition would not occur as part of the proposed project.

S3-16 Comments noted. No response necessary.

WILDLIFE CORRIDOR CONSERVATION AUTHORITY

407 W. IMPERIAL HWY, SUITE H, PMB 230, BREA, CALIFORNIA 92821
TELEPHONE: (310) 589-3230
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S4

August 2, 2004

Ray Hull
County of Orange Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, California 92703

Comments on Draft Environmental Impact Report for Regional Landfill Options for Orange County Strategy – Olinda Alpha Landfill Implementation

Dear Mr. Hull:

The Wildlife Corridor Conservation Authority (WCCA) has reviewed the Draft Environmental Impact Report (DEIR) #588 for Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation. WCCA was created to provide for the proper planning, conservation, environmental protection and maintenance of the habitat and wildlife corridor between the Whittier-Puente Hills and the Cleveland National Forest in the Santa Ana Mountains. With respect to the proposed project, WCCA's primary goals are to preserve the wildlife movement areas in addition to other ecological, recreational, and visual resources within the Puente-Chino Hills. In this letter, WCCA reiterates many of the same comments previously submitted in WCCA's November 6, 2002 and February 6, 2004 letters on the Notices of Preparation. The DEIR does not adequately address the comments in WCCA's previous letters. In summary, the Final Environmental Impact Report (FEIR) should include the establishment of a mitigation fund for land acquisition/preservation/management to offset project-related and cumulative significant adverse impacts to biological, recreational, and aesthetic resources.

S4-1

The proposed project consists of the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's near-term solid waste disposal needs. Specifically, the Olinda Alpha landfill would be expanded vertically 115 feet and the existing refuse footprint would be expanded approximately 33 acres in the northeast part of the existing property boundary. The project would extend the life of the Olinda Alpha Landfill from its permitted closure date of 2013 to 2021. According to the DEIR, direct impacts would be incurred to the following plant communities: 10.6 acres (ac.) of cut/slope revegetation, 16.9 ac. of toyon-sumac chaparral, 0.2 ac. of ruderal non-native grassland, 1.3 ac. coast live oak woodland, and 4.0 ac. of coastal sage scrub. Specifically, the project will result in

S4-2

direct project impacts such as these, and will delay the use of the site as a natural regional park. S4-2

Need for Emphasis on Waste Reduction

According to the DEIR, the California Integrated Waste Management Act requires each city and county to submit a Source Reduction and Recycling Element. The goals and objectives relevant to the proposed project at Olinda Alpha Landfill include maximizing the use of all feasible source reduction, recycling, and composting options, and developing and implementing programs for source reduction, recycling, and composting (p. 5.1-7). The FEIR should explicitly identify the measures that will be implemented to achieve these goals and objectives. Waste reduction would help reduce environmental impacts associated with the landfill expansion. S4-3

Recreational Impacts

The project would result in significant impacts to recreational resources. The landfill property is designated on the County of Orange Master Plan of Regional Recreational Facilities and the City of Brea General Plan as a future County natural regional park. The extension of the landfill closure date to 2021 could delay two proposed trails on the site. The DEIR (p. 5.1-7) states that delay of the use of the site for recreational use for at least eight years is short and would not be considered a significant adverse impact. This delay is not short, and it is considered a significant adverse impact. Other potential park uses could also potentially be delayed. S4-4

Visual Impacts

Additional viewshed analysis is warranted in the FEIR, including additional analysis of viewshed impacts from Chino Hills State Park. The DEIR states that views of the proposed expansion from locations in the Firestone Boy Scout Reservation and Chino Hills State Park, which currently have views of the existing landfill operations, would be similar to views with the permitted landfill. However, the views of the landfill would be of a higher profile (DEIR, p. 5.8-11). WCCA recommends that in the FEIR include a before and after line-of-site analysis specifically of views from the North Ridge Trail and South Ridge Trail in Chino Hills State Park, and from the Firestone Boy Scout Reservation. This analysis should consider views which will be impacted. S4-5

The additional viewshed analysis should also address the following questions. Will there be significant adverse visual impacts to park users during the period that the revegetated landfill areas are growing (e.g., four years as mentioned in the DEIR)? S4-6 Would adverse view impacts be limited to only two weeks out of the year when the additional waste is S4-7

being stockpiled, as described for the two viewpoints analyzed in the DEIR, before the stockpiling becomes hidden from view? Are there any areas from Chino Hills State Park or the Firestone Boy Scout Reservation where the expanded landfill will be visible, where it was not visible before? Are there any other views of active landfill operations from Chino Hills State Park, or the Firestone Boy Scout Reservation? If so, it appears that these views would continue for an additional eight years under the project. Prolonging the adverse views of the active landfill from these parks and other public viewing areas could be considered a significant adverse impact. S4-7

As stated in WCCA's previous letter, this expanded viewshed analysis should include line-of-sight pre- and post-project analyses from Lambert Road, and State Routes 55, 57, and 91. S4-8

Impacts to Biological Resources

The proposed project would result in the direct loss of wildlife habitat onsite, as well as a loss of buffer to adjacent open space land and wildlife habitat. The DEIR indicates that several sensitive wildlife species will be adversely affected. Habitat restoration is proposed for direct impacts to 4.0 acres of coastal sage scrub and 10.4 acres of cut/slope revegetation. S4-9

The DEIR (p. 5.12-11) also states that the eight year postponement of the landfill property for conversion to the regional park would delay the time frame for additional wildlife access and movement through the area. This is a significant project-related, and cumulative adverse environmental impact.

The following statement is incorrect (DEIR, p. 8-5): "The Tonner Hills PC in conjunction with the landfill expansion, would not contribute to adverse impacts to biological resources." Contrary to what is stated in the DEIR, the proposed landfill expansion *would* contribute to cumulative adverse impacts related to biological resources. Habitat restoration is also proposed for the Tonner Hills Planned Community project site, and habitat restoration can be a useful mitigation approach. However, there are uncertainties with the success of restoration, there are temporal losses of habitat values, and the habitat quality of the restored site may not be as high as the quality of habitat at the impacted site. The overall losses of habitat from the Tonner Hills Planned Community will result in significant adverse biological impacts. The Tonner Hills Planned Community and the subject landfill project will result in significant adverse cumulative impacts to biological resources. S4-10

Comments Regarding Tonner Canyon Road

WCCA concurs with the IWMD's approach regarding not proposing the use of Tonner Canyon Road for any landfill purposes. According to the DEIR (p. 2-19), "the current proposed expansion project at Olinda Alpha Landfill does not include any project components or analysis related to the extension of Tonner Canyon Road or the use of Tonner Canyon Road for access to the landfill through the life of this project." Based on substantial biological studies in the area, we anticipate that uses of Tonner Canyon Road, such as for landfill operations purposes, in this ecologically sensitive area, have the potential to compromise the functionality of the wildlife corridor. S4-11

Need for Mitigation Fund for Land Acquisition/Preservation/Management

Although much of the Olinda Alpha Landfill project site is currently disturbed from existing landfill operations, the Olinda Alpha Landfill essentially abuts Tonner Canyon to the north and west. To reiterate from WCCA's November 2, 2002 letter on the NOP, Tonner Canyon is a critical wildlife movement area that supports numerous sensitive ecological resources. Chino Hills State Park and Carbon Canyon are located to the east of the landfill site. As described above, the Olinda Alpha Landfill expansion and extension of landfill closure date potentially would result in numerous significant adverse ecological, recreational, and visual impacts. To adequately mitigate those impacts, the FEIR must include a mitigation measure that establishes a fund to pay for land acquisition and management in the concerned portion of the Chino Hills. S4-12

Establishment of a mitigation fund is a proven vehicle for offsetting the adverse impacts associated with operation of a landfill. Specifically, the Puente Hills Landfill Native Habitat Authority (Habitat Authority) was established as a joint effort with the County of Los Angeles, Sanitation Districts of Los Angeles County, the community of Hacienda Heights, and the City of Whittier as mitigation for adverse impacts associated with operation of the Puente Hills Landfill. The funding for the Habitat Authority comes from a per ton solid waste disposal fee assessed on users of the landfill. The Habitat Authority's success is evident in that it manages approximately 3,810 acres of preserved public open space, of which 1,862 is owned by the Habitat Authority in the western portion of the wildlife corridor. S4-13

The mitigation measures in the FEIR should include the requirement to generate sufficient funding to acquire natural land contiguous to or in the near vicinity of the Chino Hills core habitat. This mitigation fund should also be available for management, maintenance, and establishment of minimal support facilities on the protected land. Similarly, the Habitat Authority has the ability to utilize those tipping fees for acquisition, restoration, and/or maintenance of open space (underlining added for emphasis). The tipping fee should be established and adjusted to provide full mitigation for all possible impacts. S4-14

The FEIR must provide enough detail to ensure that this mitigation fund will be expended for land acquisition and preservation in a timely manner. This land shall also be available for passive recreational uses such as hiking. The mitigation measures should also require that the land be acquired, and that recreational facilities and/or opportunities be provided, within two years of permitting. The mitigation measures in the FEIR should state that in the event of non-compliance with this timeframe, additional mitigation funds and/or acreage shall be required. S4-15

To reiterate, the FEIR should include the establishment of a mitigation fund for land acquisition/preservation/management to offset significant project-related and cumulative adverse environmental impacts to biological, recreational, and aesthetic resources. Thank you for the opportunity to comment. Please contact Judi Tamasi of our staff at (310) 589-3230 ext. 121 if you have any questions. S4-16

Sincerely,

Steve Feld
Chair

S4 RESPONSES TO COMMENTS FROM THE WILDLIFE CORRIDOR CONSERVATION AUTHORITY DATED AUGUST 2, 2004

S4-1 Comments noted. Refer to response to comment S4-12, below, regarding establishment of a mitigation fund.

S4-2 Comments noted. No response necessary.

S4-3 The Source Reduction and Recycling Element (SRRE) for Orange County is a countywide plan that addresses source reduction and recycling throughout the County, at all sources of waste generation. The Orange County SRRE was approved in 1995 and is available for review at IWMD's main office. The SRRE goals and objectives cited on page 5.1-7 in the DEIR are the most relevant to the landfills in Orange County, including the Olinda Alpha Landfill, and implementation measures to achieve those goals are included in the Orange County SRRE. Waste reduction programs are already in place throughout Orange County and the current waste diversion rate is 42 percent as noted on page 5.1-7. However, even with a higher diversion rate, there will still be a need for landfill capacity in Orange County into the future. In addition to the SRRE for Orange County, all cities in California participate in source reduction, recycling, composting and waste reduction programs in order to increase their diversion rates. The proposed landfill expansion at Olinda Alpha Landfill will be needed, even with higher diversion rates, as explained in detail in Section 4.3 (History and Evolution of the Proposed Project) in the DEIR.

S4-4 Refer to Section 5.11.4 (Potential Impacts) in the DEIR that indicates that the proposed project will not result in significant adverse impacts related to recreation resources. Specifically, Section 5.11 discusses the planned passive use of a regional park on the Olinda Alpha Landfill site after termination of landfilling.

The County of Orange Resources and Development Management Department/Harbors, Beaches and Parks (RDMD/HBP) provides administrative, planning and operational services for the County regional recreation facilities system, including regional parks. Funding for RDMD/HBP is provided primarily from a percentage of property tax revenues dedicated to the regional recreation system. RDMD/HBP Capital Project funds are allocated within its Five-Year Capital Plan and annual HBP Fund budget. RDMD/HBP capital funding is very limited at this time and for the foreseeable future due to reductions in prior levels of RDMD/HBP annual property tax funding by actions of the state Legislature: by $4.5 million in 1992, by $4.0 million in 1996 (for 20 years), both amounts also increasing each year by county property assessed valuation increases, and in adopting the State's FY 2004/05 budget, by an added $3.6 million for each of the next two fiscal years. These losses of previous annual funding levels have resulted in capital project funding being limited almost exclusively to the availability of grant funding from non-County sources.

The Five-Year Capital Plan is updated annually. County regional park programs and construction of other potential recreational improvements are identified and budgeted annually according to this Five-Year Capital Plan. Olinda Alpha Landfill is currently designated on the County Master Plan of Regional Recreational Facilities as a proposed regional park. The Five-Year Capital Plan is presented to the County Executive Office for approval as part of the County's annual budget and financial planning process. The Olinda Alpha Landfill does not appear in the current (or any past) HBP Five-Year Capital Plan for the dual reasons that it will not be available for conversion to a regional park within the next five years and that there is no capital funding currently available for the creation of a new regional park.

County regional parks are designed for passive, open space use; in contrast, urban community parks provide for active recreational uses. If the needs assessment for a regional park indicates that active recreational programs and facilities are needed over and above those traditionally provided by the County regional park system, the local municipality park and recreational planning authority (e.g. city) and its processes may be afforded the opportunity to use a part of a County regional park for local recreation purposes if the city is interested in funding and implementing such facilities/programs. The primary goal of the County Regional Recreational Park programs is to accommodate Orange County's regional recreational needs.

As examples, the County has provided rent-free leased land to cities for active community uses within regional parklands (e.g. Mile Square Park in Fountain Valley and Yorba Regional Park in Yorba Linda), with these local municipalities providing the capital project expense, programming and operations of these facilities.

The IWMD will begin preparation of a Final Closure and Post-Closure Maintenance Plan approximately five years prior to the cessation of waste acceptance at Olinda Alpha Landfill. These documents will be submitted to the CIWMB two years prior to the planned landfill closure as required per CCR, Title 27. The Closure Plan, indicating final end use, must be approved by regulatory agencies prior to initiation of landfill closure activities. During the five-year period prior to the last date of waste acceptance, the RDMD/HBP will consider including the Olinda Regional Park in its Five-Year Capital Plan, subject to available funding and other competing needs. If funded, the process will involve a needs analysis for regional, and as appropriate, local uses undertaken in cooperation with adjacent cities and interest groups. A definitive cost study will also be conducted as part of this process once the proposed uses are established.

No specific uses for this park, other than its identification as a passive use regional park, have been identified at this time. Therefore, it is not known what amenities and activities might be provided at this park in the future and when this park will be implemented. Section 5.11 in the DEIR indicates that the extension of the landfill operations from 2013 to approximately 2021 would delay this planned park use; however, because this park is not currently programmed and specific funding is not identified, this is not considered a significant adverse impact and no mitigation is necessary. It should be noted that a variety of recreational opportunities for the public are already available near the Olinda

Alpha Landfill including the Chino Hills State Park, the County of Orange Carbon Canyon Regional Park, as well as community and neighborhood parks. Additionally, the City of Brea has approved a new sports park, to be located near the intersection of Valencia Avenue and Birch Street. This new sports park is being funded with $9.4 million provided by the County to the City of Brea according to the Memorandum of Understanding between the County and the City.

Section 5.11 in the DEIR also indicates that implementation of three trails in the area would be delayed if the landfill operations continue to approximately 2021. These trails are currently conceptual alignments, as shown on Figure 5.11-2 in the DEIR. There was a printing error in the DEIR and some copies may not have included Figure 5.11-2. A copy of that figure is attached, following the last page of the responses to comments letter S4, as an information item. As shown in Figure 5.11-2, the proposed Tres Hermanos Trail will be predominately aligned through the landfill property, connecting to the Tonner Ridge Trail to the southwest and the proposed Chino Hills Trail to the northeast. Because this trail is predominately aligned through the landfill property, and it would not be available until the regional park is constructed and operating, the trail implementation would also be delayed under the proposed project. Similarly, implementation of segments of the proposed Chino Hills and Diamond Bar Trails would also be delayed, for those trail segments on the landfill property. These trails are shown conceptually on the County and City plans and clearly are intended to be implemented concurrently with or after the implementation of the regional park use on the landfill property. Further, delay in the implementation of these trails would not adversely affect access to other open space areas such as Chino Hills State Park and the open space along Tonner Ridge because other trails are available in the area. Therefore, the delay in the implementation of these proposed trails/trail segments is not considered to be a significant adverse impact of the proposed project. It should be noted that multi-use trails already exist near the Olinda Alpha Landfill, including the North Ridge Trail and Telegraph Canyon Trail in Chino Hills State Park.

It is not clear what "Other potential park uses…" are referenced in the last part of this comment. The DEIR clearly indicates that the proposed project would result in delays in the implementation of the regional park and three trails/trail segments, but as described in the DEIR and above, these impacts are not considered to be significant.

S4-5 The nearest location on the North Ridge Trail from which the proposed landfill would be visible is approximately 1.5 miles from the landfill. The nearest location on the South Ridge Trail from which the proposed landfill would be visible is greater than 1.5 miles from the landfill. As stated in the text, the differences between the 1,300 foot and 1,415 foot elevations would be more difficult to discern from more distant view points than those used for the visual simulations. This is because the landfill would appear as a much smaller element in views from more distant locations. Views of the proposed landfill from points on the North Ridge and South Ridge Trails would also include many other urbanized uses in the view. Landfill operations may be visible from points on these trails where intervening topography does not obscure the view. However, operations that could

include trucks, trash and daily cover application would be extremely small elements of the view and would be difficult to discern because of the distance of the viewer from the operations. Therefore, visual impacts of the expansion from Chino Hills State Park south of Carbon Canyon Road would not be considered to be adverse.

As discussed in the DEIR, locations in Chino Hills State Park north of Carbon Canyon Road and the Firestone Boy Scout Reservation that have views of current landfill operations would continue to have views of operations under the proposed landfill. These locations are from elevations where topography does not obstruct the view into the landfill. These views of the operations would be extended for eight years until the proposed landfill is closed. However, the views of operations would be the same as currently exist. Because the quality of the view will not change, the impact would be considered less than significant.

S4-6 Mitigation measure AS-1 requires the revision of the existing Landscape Master Plan (LMP) to include the proposed landfill expansion. The LMP includes a phased interim landscape plan that requires that slopes be seeded annually as they are constructed. The seed mixes to be applied will introduce vegetation consistent with the final landscape plan. This will provide a similar visual appearance between the interim slopes and the ultimate closure slopes. As described in the EIR, it would take approximately four years for vegetation planted on the slopes to reach the level of maturity shown in the visual simulations in the EIR. However, in the first rainy season following seeding, plants will germinate and begin to grow. This rainy period generally occurs during the winter/early spring of the year. As the plants become established, the slopes will change in appearance from bare soil to vegetative cover. This change will be visible in the first year following seeding, although there will still be bare ground that is not yet covered by vegetation. As the plants continue to increase in size and number, the cover of the slopes will reach the appearance of the visual simulations. Because the slopes will be seeded annually and the view of unvegetated slopes will be temporary, this impact would be less than significant.

S4-7 As described in the EIR text, the south edge of each new lift will be constructed from east to west across the landfill in a series of cells approximately 18 to 20 feet high. Each cell will be composed of trash that is compacted and covered daily with soil or other approved cover material. This operation activity will be visible from viewpoints south of the landfill for approximately two weeks until the cells comprising the south edge of the lift are complete across the landfill. Once the south edge of the lift is complete, continuing operations to the north will be hidden behind the front cells (front edge of the lift) for about 10 months until the entire lift is complete. Then work on the next lift would begin and operations would be visible for approximately two weeks until they are hidden behind the south edge of the new lift. This same process would continue until landfilling is complete. This procedure screens views of landfill operations from viewpoints to the south of the landfill.

In locations to the north and east of the landfill where operations would be visible, the operations would be seen on a year-round basis because construction of the cells along the south edge of each lift would only hide operations from view points to the south.

As described in the text, there are points in Chino Hills State Park where the proposed landfill will be visible where the permitted landfill (1,300 foot elevation) would not be visible. Locations above the 1,300 foot elevation in Chino Hills State Park north of Carbon Canyon Road that do not currently have views of the landfill operations to the west will have views of the proposed 1,415 foot landfill expansion where intervening topography does not obscure views. From these locations, the proposed expansion will appear as a narrow band on the horizon line of the existing view. As the vegetation on the slopes become established, the expansion will appear as a ridge in the background of the view beyond the hills and ridges closer to the viewer. As stated previously, mitigation measure AS-1 requires that the slopes be vegetated prior to closure as part of the interim Landscape Plan. Views from these elevated locations in the Park include existing urbanized uses to the south, southwest and west. The impact of the proposed expansion on these views would not be considered adverse because the proposed expansion will be a small, narrow element of the view scene which includes urban elements; and will appear to be an open space ridge when the vegetation becomes established.

There may also be locations in the Firestone Boy Scout Reservation where the proposed landfill will be visible where the permitted landfill (1,300 foot elevation) would not be visible. As described above for locations in Chino Hills State Park, the impact of the proposed expansion on these views would not be considered to be adverse because the proposed expansion will be a small, narrow element on the horizon of the view scene and will appear to be an open space ridge when the vegetation becomes established.

As described earlier in response to comment S4-5, existing views of the operations would be extended for eight years until landfilling is terminated. However, the views of operations would be the same as currently exist. Because the quality of the view will not change, the impact would be considered less than significant.

S4-8 SR 55, SR 57 and SR 91 are not identified as scenic routes and generally do not provide scenic vistas in the vicinity of the landfill. At the closest point, the landfill is 1.5 miles from SR 57. It is 5.75 miles from the closest point on SR 91 and 6 miles from SR 55. From these distances the landfill will appear as a small part of the overall view scene which includes many other urbanized uses. The Landfill would be even less noticeable for motorists traveling at non-rush-hour speeds of approximately 65 miles per hour. This is because the elements in the view change rapidly at this speed. The landfill would be visible for a short period of time before it passes out of the motorists view. No significant aesthetic impacts would occur.

The landfill is a little more than 0.5 mile from the closest point on Lambert Road. This is approximately the same distance from the landfill as view point 1 at the edge of Carbon Canyon Road shown in the EIR on Figure 5.8-2. Carbon Canyon Road becomes Lambert

Road at the intersection with Valencia Avenue, approximately 0.25 mile west of view point 1. The appearance of the proposed landfill from Lambert Road and Valencia Avenue would be similar in mass and cover color and texture to visual simulation 1B in Figure 5.8-4 in the EIR. The change is visual quality from the permitted 1300 foot height shown in visual simulation 1A on Figure 5.8-4 to the proposed height in visual simulation 1B was found to be less than significant as described in the EIR. Likewise, the change in visual quality between the permitted and proposed heights of the landfill from Lambert Road and Valencia Avenue would be less than significant.

In addition, travelers on area roads, with the exception of designated scenic routes, are generally considered to be transient viewers and less sensitive to changes in views. Therefore, detailed viewshed analyses were not conducted for views from these roads.

S4-9 CEQA requires that environmental impacts be evaluated against existing conditions. Since much of the landfill is devoid of native plant communities, there is limited dispersion through the site. Plant communities provide cover for wildlife movement which is restricted to the eastern portion of the site and limited. Vegetative cover is an important element along dispersion corridors since it provides escape cover (Jones and Stokes 1974). The landfill is devoid of substantial cover. Expansion of the landfill will temporarily restrict the buffer zone, however, upon final closure of the landfill the enhanced revegetation projects will increase the value of the buffer.

Section 5.12 in the DEIR clearly indicates that the landfill property is currently not conducive to wildlife movement. The text on page 5.12-11 regarding wildlife movement with implementation of the proposed project states "The expansion of the landfill will postpone closure and reuse of the property from 2013 to 2021. After closure of the landfill, the site is proposed for conversion to a passive use regional park. The existing conditions at the landfill do not provide suitable habitat or dispersion qualities for wildlife movement. However, it is anticipated that post-closure conditions (i.e. hydroseeded slopes and greenbelts) would provide more suitable conditions for wildlife movement. The suitability and value of the planned regional park to wildlife movement will depend on the specific park development plan and the recreation uses implemented on the site. In particular, the amount of vegetation restored to natural conditions and the degree of recreation use would influence suitability for wildlife movement." Therefore, the closure delay of the landfill and the implementation of the regional park will not affect existing wildlife movement in the area because wildlife do not currently use the landfill for movement. However, after landfill closure, wildlife will benefit from the additional movement opportunities when the regional park is functioning. The delay of this benefit is not a significant adverse impact, either for the project or cumulatively, because wildlife currently have other movement opportunities in the area and do not currently use the landfill site for movement.

S4-10 The cumulative impacts analyses were based, in part, on the findings of environmental documents (EDs) for other projects including the City of Brea General Plan and the Tonner Hills Planned Community (PC). As result, the cumulative impacts analyses considered the effects of those projects, as documented in those EDs, in conjunction with

the impacts of the proposed landfill expansion. Based on that analysis, the Tonner Hills PC will result in a net increase in coastal sage scrub (CSS) and southern arroyo willow woodland. The proposed landfill expansion includes mitigation to address the adverse project impacts related to CSS and other plant communities, with those impacts mitigated to below a level of significance. Restoration projects are a proven strategy to mitigate impacts to existing habitat. Section 5.12.5 of the DEIR addresses assurance at successful restoration with the commitment to maintenance and monitoring goals. Therefore, the proposed landfill expansion will not contribute to cumulative adverse impacts on biological resources after mitigation has been incorporated into the landscape. No remaining unavoidable significant adverse biological resources impacts are identified. However, as noted in the discussion in Cumulative Impacts, Section 8.0, page 8-5, the potential municipal use of land owned by the City of Industry to the north of the landfill could contribute to cumulative impacts on biological resources in this area. Because the proposed landfill expansion includes mitigation to reduce the project related adverse impacts on biological resources to below a level of significance, the proposed landfill expansion will not contribute to cumulative adverse impacts in this area.

S4-11 Comments noted. No response necessary.

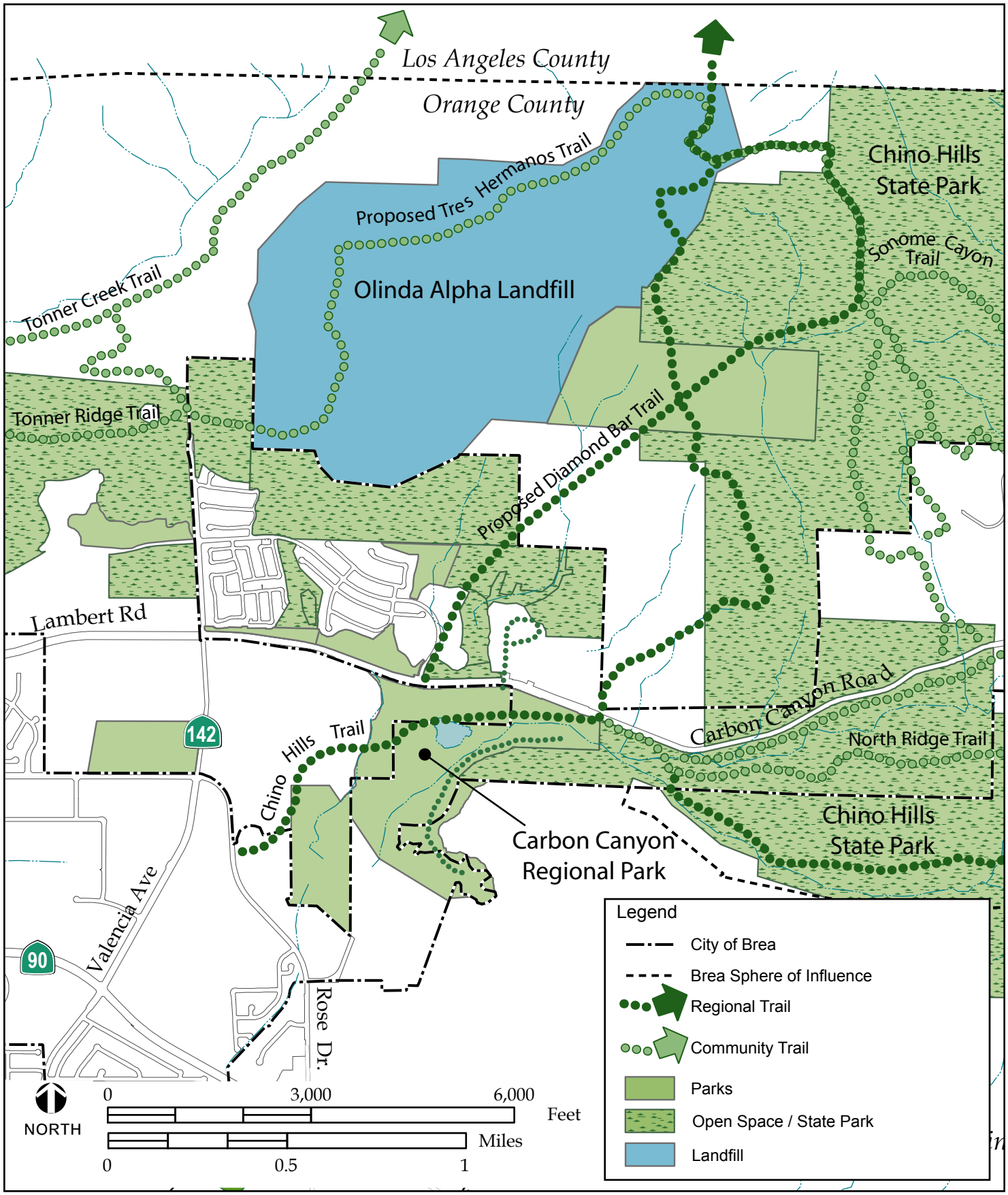
S4-12 As documented in the DEIR, adverse impacts on surrounding open space are anticipated to be limited to visual and lighting impacts which will be mitigated to below a level of significance as discussed in Section 5.8 (Aesthetics) in the DEIR. The impacts of the proposed project related to biological resources and recreation and mitigation measures to address significant adverse project impacts are identified in the DEIR. A mitigation fund is not proposed or required for the landfill expansion project in the DEIR.

S4-13 Comments noted. No response necessary.

S4-14 Tipping fees at all landfills in the Orange County system are set forth per terms of Waste Disposal Agreements (WDA) between the County of Orange and each city and sanitation district in the County. An increase in tipping fees to financially support an environmental mitigation fund for the sole purpose of acquiring, restoring and/or maintaining open space in the vicinity of the Olinda Alpha Landfill would not be possible until the term of the current WDAs expire (2010) and would be subject to negotiation among all WDA participants.

S4-15 Comments noted. Refer to response to comment S4-12, above.

S4-16 Comments noted. No response necessary. Refer to responses S4-4 to S4-10, S4-12 and S4-14, above.



Source: City of Brea General Plan (2003), County of Orange General Plan (2000) and P&D Consultants, Inc. (2004).

Figure 5.11-2

Riding and Hiking Trails in the Vicinity of the Olinda Alpha Landfill

State of California • The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 657-0676 * Fax (951) 657-2736

Arnold Schwarzenegger, *Governor*
Ruth Coleman, *Director*

S5

July 30, 2004

County of Orange
Integrated Waste Management Department
Public information Office
Attn: Ray Hull
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Re: Draft Environmental Impact Report (DEIR) SCH #2004011055
Regional Landfill Options for Orange County (RELOOC) Strategic Plan
Olinda Alpha Landfill Implementation

Dear Mr. Hull:

The Inland Empire District of the Department of Parks and Recreation (State Parks) appreciates the opportunity to comment on the aforementioned project. S5-1

State Parks is a State Agency as defined by the California Environmental Quality Act (CEQA) § 21082.1, a Responsible Agency (PRC § 21069) and a Trustee Agency as used by CEQA, its Guidelines and as defined by CCR § 15386 for the resources affected by this proposed project. Our mission is to provide for the health, inspiration, and education of the people of California by helping preserve the state's extraordinary biodiversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation. S5-2

As the office responsible for the stewardship of Chino Hills State Park (CHSP), we have an interest and concern about contemplated alterations of land use adjacent to the park. The proposed project is located at the last known viable habitat linkage point of the Chino Hills to the western Puente/Whittier Hills. State Parks is interested in seeing this connection remain fully functional. The long-term health of CHSP is dependent on the health of the regional ecosystems because the biotic boundaries of the park extend beyond its jurisdictional boundaries. S5-3

We appreciate your efforts at developing short- and long-term strategies regarding waste management. Based on our review of the DEIR, we have found that the proposed vertical and horizontal expansion of the Olinda Alpha Landfill will result in significant impacts to resources within CHSP. We offer the following comments for your consideration. S5-4

GENERAL COMMENTS

The protected public lands in the Puente-Chino Hills and the Santa Ana Mountains represent a tremendous public investment in open space and the protection of biodiversity. Over 200 million dollars has been invested to date in the Puente-Chino Hills alone to protect and restore natural areas. Countless numbers of volunteer hours from community groups and individuals have been and continue to be dedicated in restoring and interpreting this priceless area to the 15 million people that live within a short distance of these natural areas. Tens of thousands of people each year visit these areas annually to and find relief from the hectic pace of every day life and to rejuvenate their spirits. S5-5

The effort to preserve the Puente-Chino Hills has generated tremendous support. Supporters include conservation and other grass roots groups, local governments and joint power authorities, state and federal agencies, and state and federal legislators. S5-6

As described in the DEIR, the County proposes to extend the life of the landfill from 2013 to 2021 and expand the landfill vertically 115 feet and horizontally to encompass 33 acres within the County's current landfill property. S5-7

The continued operation of the landfill beyond 2013 will result in significant impacts to the ecosystem and the community. In summary, we: S5-8

- Oppose expansion and extension of the Olinda Alpha Landfill; S5-9
- Recognize that due to economic and political realities, no landfill in southern California has ever closed before it reached capacity; S5-10
- Oppose further acquisition of land at the Olinda Landfill by Orange County Integrated Waste Management beyond the current ownership for future use as landfill borrow or fill sites; S5-11
- Believe adequate mitigation must be negotiated to cope with the negative impacts of hosting a landfill; S5-12
- Support increased mitigation and enforcement for trash truck impacts along Valencia Avenue; S5-13
- Support establishment of a mitigation fund for acquisition of open space and other appropriate measures related to landfill impacts; S5-14
- Support creation of a transfer station to eliminate traffic from individual trash haulers; S5-15
- Oppose a new access road in Tonner Canyon as duplicative, economically wasteful and irreparably damaging to the long term bipartisan regional effort to protect the remaining undeveloped hills. S5-16

State Parks would like to know in quantifiable terms where soil and fill material will come from. Further clarification is necessary to ensure that appropriate soil and fill material is used so as not to compromise the integrity of the ecosystem and present unknown impacts to the community. S5-17

We recommend that the plant palette be limited to locale native species only. This will prevent ornamental and non-native plants from displacing and destroying native vegetation, especially in riparian areas. S5-18

State Parks recommends that a tipping fee be established based on percentage rather than a flat rate prior to finalizing negotiations for the extension. The funds should be used to acquire and/or develop land in the Puente-Chino Hills to help offset significant impacts to the ecosystem. S5-19

MITIGATION MEASURES

Surface Water Hydrology

- H-2, dealing with drainage. We are concerned about the potential environmental effects of runoff from the project. The DEIR needs to address runoff and should be clearly defined in order to avoid off-site impacts, especially to current and/or future habitat areas. S5-20

- H-6, Lack of rehabilitation. Mitigation measures should be expanded to include areas off-site that may be negatively impacted by erosion. It has been our experience on similar projects that sedimentation and nonnatural flows may cumulatively impact and disturbed areas of native vegetation. S5-21

Transportation and Circulation

- T-1 and T-2 should include provisions to add a Class 1 bike lane from Imperial Highway to Carbon Canyon Road on Valencia Avenue. This stretch of road is currently a hazard for cyclists due to trash trucks. A Class I lane would help in buffering cyclists and pedestrians from trash trucks. Additionally, adequate signage should be installed directing potential bike route users to this new amenity S5-22

Aesthetics

- AS-1, B-1 should provide for more certain time frames for revegetation of disturbed area and include provisions to coordinate with State Parks and/or other trustee agencies in developing a plant palette consisting of local natives. We ask that only native species be used for, screening and re-vegetation in theses areas and the areas adjacent to them. We also request that plant seeds and propagules be of local provenance. S5-23

Cultural and Scientific Resources

- C-1 should include a provision to coordinate with State Parks, given the proximity of the project site to CHSP and our responsibility to provide high quality education opportunities, we request that State Parks be given copies of all reports, and that the County ask the repository entity to cooperate with State Parks in making information and remains available for educational programs. S5-24

Biological Resources

- B-1, B-2 should include provisions that indicate if no area on-site is appropriate, then off-site mitigation measures within CHSP, should be explored and be used to mitigate permanent habitat loss. State Parks staff will work with the County and CDFG to determine the appropriateness of our participation and to evaluate the mitigation proposal including mitigation ratios, and other mitigation measures proposed to replacement and compensate for areas of permanent habitat loss. S5-25

Thank you again for the opportunity to comment and for your serious consideration. For further discussion, please feel free to contact me or Russ Dingman, District Planner at (661) 726-1669. S5-26

Sincerely,

Ron Krueper

FOR RON KRUEPER
PARK SUPERINTENDENT

Gary Watts
District Superintendent

S5 RESPONSES TO COMMENTS FROM THE CALIFORNIA DEPARTMENT OF PARKS AND RECREATION DATED JULY 30, 2004

S5-1 Comments noted. No response necessary.

S5-2 Comments noted. No response necessary.

S5-3 Refer to response to comment S4-9, earlier in this Responses to Comments Report.

S5-4 As indicated in Section 5.12 in the DEIR, after the implementation of identified mitigation measures, the proposed project would not result in any adverse impacts to biological resources.

S5-5 Comments noted. No response necessary.

S5-6 Comments noted. No response necessary.

S5-7 Comments noted. No response necessary.

S5-8 Refer to response to comment S5-4, above and comments R3-2 through R3-15,

S5-9 Opinion noted. No response necessary.

S5-10 Comments noted. No response necessary.

S5-11 Opinion noted. Refer to page 4-1 in the DEIR which indicates that the proposed project would be entirely within the existing boundary of Olinda Alpha Landfill. No expansion of the landfill, outside the existing property boundary, and no acquisition of land outside the existing property boundary, is proposed as part of this project.

S5-12 Opinion noted. Refer to Table 1-1 in the DEIR which lists the mitigation measures included as part of the proposed landfill expansion.

S5-13 Opinion noted. Mitigation T-1 proposes modifications to southbound Valencia Avenue approaching Imperial Highway that include one additional southbound left-turn lane and reconfiguring the remaining lanes to achieve a Level of Service Level D, compared to a Level of Service Level E without these proposed mitigations. Additionally, mitigation measure N-5 proposes a road noise reduction program which may include reduction of road speed limits along the segment of Valencia Avenue north of Carbon Canyon Road, construction of a sound wall adjacent to affected residences and installation of rubberized asphalt on Valencia Avenue north of Carbon Canyon Road.

S5-14 Opinion noted. Refer to response to comments S4-12 and S4-14, earlier in this Responses to Comments Report, for discussion of the mitigation fund suggestion.

S5-15 IWMD is currently conducting a self-haul waste characterization study to determine the make-up of waste hauled to County landfills by non-commercial waste haulers with the ultimate goal of developing strategies to divert self-haulers to facilities other than the landfills. An additional transfer station in the vicinity of the Olinda Alpha Landfill may not be practicable given that several transfer stations are already located throughout the north and central regions of the county.

S5-16 Refer to Section 2.3.3 (Tonner Canyon Road) in the DEIR which clearly indicates that the proposed project does not include the provision of an alternative access to the landfill via a new access road in Tonner Canyon.

S5-17 As indicated in the DEIR, dirt being disposed at Orange County solid waste landfills comes from various sources, typically construction sites. It is screened daily by landfill Waste Inspectors (WI), who regularly inspect the dirt stockpile areas. The WI's survey the dirt piles for petroleum or chemical odors (i.e., fuels/solvents/pesticides/chemicals) and for unusual discoloration (i.e., petroleum/metals/chemicals). Soil samples from suspect dirt piles may be field-tested with a portable "hydrocarbon vapor tester" to determine the presence of flammable vapors, which would indicate whether or not the dirt pile was contaminated with a fuel or solvent. If a dirt pile is suspected of being contaminated with any hazardous or toxic material or substance; then the WI will attempt to identify the transporter in order to determine where the dirt came from and the identity of the generator. Acceptance of dirt loads from the generator will be stopped. The WI will then relay this information to an IWMD Materials Regulation Specialist (MRS), who will contact the generator and determine if the dirt is acceptable or not. If the transporter/generator cannot be identified, then the disposition of the contaminated soil becomes the responsibility of the landfill. Determination of the acceptability for disposal of suspect soil is made by an MRS who visits the site where the soil is being generated and inspects the soils in much the same way as the WI. Additionally, the MRS will direct the generator in the taking of soil samples under a "Chain of Custody" to be analyzed by an appropriate test method. In determining if the soil is acceptable, IWMD follows guidelines and limitations set forth by California EPA/DTSC and the California Regional Water Quality Control Board – Santa Ana Region. Also, various County and city departments may direct generators of soils which are suspected of contamination, to contact an MRS directly. The MRS will determine the acceptability for landfill disposal of those soils using procedures similar to those mentioned above. As a result of existing procedures, soils are properly sampled and disposed of in accordance with appropriate practices.

S5-18 As noted in mitigation measure AS-1, the plant palettes that will be used for revegetation on the site will be from the Olinda Alpha Landscape Master Plan (LMP) that was developed in 1994 in consultation with the City of Brea and the Brea Citizens Advisory Board, and the revised LMP prepared to include the proposed expansion. The LMP identifies native and drought tolerant plant materials for potential use on the landfill property. An important consideration is the use of plant materials over landfilled areas because they cannot have root systems which could damage the final cover over the

landfilled areas. Non-native invasive species will not be used. In the future, as part of the regional park planning, the plant palettes may be modified to accommodate recreation uses in certain parts of the landfill property. Because the plant palette in the LMP is predominately drought tolerant and native species, these plant materials would generally be consistent with the plant materials in the adjoining State Park.

S5-19 Refer to response to comments S4-12 and S4-14, earlier in this Responses to Comments Report, for discussion of the mitigation fund suggestion.

S5-20 The DEIR, Section 5.4.4, presents information on potential impacts associated with surface water runoff. Because the on-site detention/desilting basins were designed to receive developed condition peak flows and release at pre-developed flows, the proposed project will not result in increased storm water discharge greater than that which would have occurred without the project. Although the developed peak Q will change from the peak associated with the permitted landfill design, the basins have sufficient capacity to limit the run-off out of the basins to pre-developed conditions; thus resulting in no additional impact to downstream drainage tributaries due to the expansion project.

S5-21 The DEIR, Section 5.4.4.2, discusses the on-site erosion control measures implemented at the site now and proposed for the project which include maintaining a 2 to 3 percent slope on all exposed surfaces; designing benches with drains at 40-foot intervals; placing fiber rolls on the slopes in between the benches; using processed green material (PGM) on slopes; using sand bags at strategic locations at the site prior to the winter season and grading benches and decks to have positive flow to downdrains. The amount of silt picked up on the active landfill surface will be reduced further by the two existing detention/desilting basins. These measures, along with NPDES permit compliance, will minimize potential impacts of erosion and soil loss to a less than significant level.

S5-22 The provision of bicycle lanes on Valencia Avenue as requested in this comment is outside the jurisdiction of the IWMD. This segment of Valencia Avenue is shown on Figure CD-10 (Bike Plan) in the City of Brea General Plan as a proposed Class 1 bikeway. Class 1 bikeways are physically separated from roads by space or a physical barrier. This segment of Valencia is shown on the Orange County Transportation Authority Commuter Bikeways Strategic Plan (1995) as a Class II bikeway which is an on road, striped facility. The existing traffic on Valencia Avenue includes both landfill related traffic and other area traffic. The proposed project will not change the number of truck trips to/from the landfill although it will extend the period during which this truck traffic occurs, from 2013 to approximately 2021. Because the proposed project will not result in a change in traffic on Valencia Avenue compared to existing conditions, there will be no new adverse impact on this street segment and no mitigation is required.

S5-23 The part of measure AS-1 to revegetate disturbed areas as soon as possible does not cite specific time frames because the amount of time between when a specific area is originally disturbed and when it can be revegetated will vary depending on a large

number of factors including how large the disturbed area is, how the landfilling/decking are conducted in the disturbed area, how soil is excavated for fill, the rate of landfilling and many other factors which cannot be reduced to a single time frame. The current practice at Olinda Alpha Landfill is to revegetate areas soon after landfilling or other disturbance activities are complete. This practice would continue in the landfill expansion areas.

The timing of the implementation of revegetation under measure B-1 will be dependent on the negotiations with CDFG and the phasing of landfilling activities in the expansion area.

Plant materials for revegetation areas will be of local origin, as feasible and as consistent with the requirements of the CDFG permit.

S5-24 Measure C-1 indicates that salvaged and collected cultural resources material will be sent to a designated museum for curation and retention. Typically, cultural resources material is retained in the County in which it is found; therefore, it is anticipated any cultural resources material found in the landfill expansion area would be housed in designated repository in Orange County. Chino Hills State Park is not in Orange County and, therefore, would not be the repository of first choice for materials from the landfill site. No repository is cited by name in this measure because the designated repositories or museums may change over time based on the capacity of an individual repository to accept and curate resources. At the time any resources are recovered from the Olinda Alpha Landfill expansion area, they will be curated in the appropriate repository as noted in measure CR-1. Should the State Park wish to display or use those cultural materials, it will be the responsibility of the State Park and the repository/museum to come to agreement about the use of those materials at the State Park. It is not within the jurisdiction of the IWMD to ask the repository/museum to release materials to the State Park.

Mitigation measures C-1 and C-3 are revised by reference to include the following: "Any reports generated as part of the activities in this mitigation measure will be provided to the State Park at the same time they are provided to the repository. However, reports provided to the State Park may exclude information not generally provided to the public in cultural resources reports."

S5-25 Measures B-1 and B-2 do not specify revegetation sites because the actual sites and mitigation ratios would be identified in consultation with CDFG. It is anticipated that the revegetation sites would be within the landfill property. In the event that the revegetation requirements cannot be met within the landfill property, the IWMD and CDFG would work together to identify suitable sites, which potentially could include sites within Chino Hills State Park. Discussions with the CDFG and compliance with the intent of mitigation measures B-1 and B-2 are the responsibilities of IWMD.

S5-26 Comments noted. No response necessary.

California Integrated Waste Management Board

Linda Moulton-Patterson, Chair
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Terry Tamminen
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

S6

July 30, 2004

Mr. Ray Hull
County of Orange - Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: SCH No. 2004011055: Draft Environmental Impact Report for Regional Landfill Option for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation (Solid Waste Facilities Permit No. 30-AB-0035) Orange County

Dear Mr. Hull:

Thank you for allowing the California Integrated Waste Management Board's (Board) staff to provide comments for this proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process. S6-1

Board staff has reviewed the environmental document cited above and offers the following project description, analysis and our recommendations for the proposed project based on our understanding of the project. If the Board's project description varies substantially from the project as understood by the Lead Agency, Board staff requests incorporation of any significant differences in the Final Environmental Impact Report. S6-2

PROPOSED PROJECT DESCRIPTION

The Regional Landfill Option for Orange County effort is a long range strategic planning program initiated by the County of Orange Integrated Waste Management Department. The purpose of Regional Landfill Option for Orange County is to assess the County's existing disposal system capabilities and develop viable short and long term solid waste disposal options for the County. As part of the endeavor, the County is considering a number of short-term improvements to existing municipal solid waste landfills operated by the Integrated Waste Management Department. S6-3

The proposed project site is located within the existing Olinda Alpha Landfill property located at 1942 North Valencia Avenue in unincorporated Orange County, near the City of Brea. The Olinda Ranch housing development is located south of the site and the future Tonner Hills housing development is proposed to be located to the southwest. The Brea Green Recycling Facility is located immediately south of the landfill entrance. S6-4

The landfill is open Monday through Saturday from 6:00 AM to 7:00 AM for transfer trucks and 7:00 AM to 4:00 PM for all commercial and non-commercial deliveries. Commercial haulers both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed, limited to Orange County residents. Only municipal solid waste, soil, asphalt, processed green waste and tires are accepted. S6-5

Importation of municipal solid waste from Los Angeles, San Bernardino and Riverside counties will cease in 2015, unless Olinda Alpha closes in 2013. It is anticipated that the truck trip reduction that occurs with the cessation of the importation of waste will be offset by an increase in truck trips required for the importation of cover material. S6-6

The proposed project includes both a vertical and a horizontal expansion. There will be no change in the landfill boundary. The peak or maximum elevation will be increased from the current permitted elevation of 1300 feet above mean sea level to a peak or maximum elevation of 1415 feet above mean sea level for a net increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill property. This modification would expand the disposal footprint by an estimated 33 acres. The extent of the horizontal or lateral expansion will be determined after additional geotechnical field data is obtained prior to construction. The horizontal or lateral expansion would occur prior to the vertical expansion. S6-7

The expanded landfill would accommodate an additional 25.7 MM cubic yards or 14.2 MM tons of municipal solid waste based on a 5:1 refuse to soil ratio with a 1333 lb/yd^3 refuse density. The proposed project would not result in any increase to either the maximum permitted daily tonnage, the annual average permitted daily tonnage or the peak or maximum number of vehicles entering the site on a daily basis. S6-8

BOARD STAFF'S COMMENTS

As a Responsible Agency for Solid Waste Facilities Permit concurrence, Board staff will conduct an environmental analysis for this project, using the Draft Environmental Impact Report developed by the Lead Agency, in accordance with Title 14, California Code of Regulations (14 CCR), Section 15096. To assist in our review of the Draft Environmental Impact Report for Solid Waste Facilities Permit concurrence purposes, Board staff request that the following comments and questions be considered and addressed in the Final Environmental Impact Report. S6-9

For clarity and convenience, questions and comments that Board staff is seeking a specific response to will be *italicized* so the reader can more easily locate and respond to them. S6-10

Hours of Operation

The current Solid Waste Facilities Permit allows operation from 6:00 AM until 4:00 PM Monday through Saturday, which is generally similar to what is in the environmental document. The permit also allows for maintenance and special projects, 24 hours per day, 7 days per week. *Is it the intent of the operator to continue maintenance and special projects during this same time period?* S6-11

If it is the intent of the operator to operate (maintenance and special projects) on a 24 hours basis, please discuss any new or significant impacts from the nighttime and Sunday operations in the Final Environmental Impact Report. Please define the type of projects or activities that will be considered special project. S6-12

Horizontal Expansion

The wording of the environmental document regarding the horizontal expansion leave considerable room for expansion in excess of the estimated 33 acres. *The wording in question is the "extent of the lateral expansion will be determined after additional geotechnical field data is obtained." For clarification, what will the peak or maximum lateral expansion be? Board staff does not have an issue with estimated, but with the fact that the expansion will be determined after this document is certified.* S6-13

Peak Elevation and Peak Depth

The environmental document discusses a maximum or peak elevation of 1415 feet above mean sea level. *Is this the peak elevation of the landfill after placement of final cover or the peak elevation of waste? If the peak final elevation is to be higher than the indicated 1415 feet please disclose that elevation and discuss any new or significant impacts from the higher elevation.* S6-14

Currently Olinda Alpha Landfill's Estimated Max Refuse Depth is 375 feet. Is the estimated depth below ground surface or feet above mean sea level? Please indicate the Estimated Max Refuse Depth in feet above or below mean sea level. Will the horizontal or lateral expansion area depth of buried waste be lower that in the existing landfill disposal area? If it is deeper, please indicate the maximum depth above or below mean sea level. S6-15

Load Checking

Board staff did not find any reference to load checking in the environmental document. *Please describe the load checking procedures? Under what circumstances will load checking be performed, by whom, how often and disposition of material found?* S6-16

Tonnages

The peak or maximum daily tonnage is 8000 tons per day, limited to annual average of 7000 tons per day by a Memorandum of Understanding between the Integrated Waste Management Department and the City of Brea. *Is the annual average permitted daily tonnage the one established by the City of Brea or a different annual average permitted daily tonnage? If the annual average permitted daily tonnage is another tonnage please so indicate.* S6-17

All material that passes over the scale and/or enters the landfill must be analyzed for in the environmental document. The Board as a Responsible Agency is concerned with the landfill's ability to handle and process all materials that are delivered to the landfill for disposal, beneficial use, recycling for other uses or processes. S6-18

Soil and contaminated soil that is to be brought to the landfill from sources outside the landfill boundary and the vehicles used to deliver the soil must be analyzed for in the draft environmental documents. Note: soil that is to be used for daily cover and contaminated soil that is to be used for alternative daily cover is not counted against the maximum or peak daily tonnages of material entering the landfill. S6-19

Please indicate in the Final Environmental Impact Report the peak or maximum daily tonnages of the other materials accepted, the "exempt commodity" such as asphalt, processed green waste and tires. If there are commodities or materials other than those previously indicated, please indicate what they are. Remember the peak number of vehicles entering the landfill also must include those vehicles that bring soil, exempt commodities or any other materials. The peak or maximum tonnage must include the weight of that material, less soil and contaminated soil used for daily and alternate daily cover. S6-20

The Solid Waste Facilities Permit may be written in such a manner that the peak municipal solid waste tonnage may be listed and there may be a separate listing or category for other materials. S6-21

As an example:

Permitted Tons per Operating Day	12000	Total: Tons per Day
Non-Hazardous – General	8000	Tons per Day
Other (asphalt, processed green waste and tires)	4000	Tons per Day

Types of Material Received and Material Processing

Board staff's understanding it that Olinda Alpha Landfill will only be receiving municipal solid waste, asphalt, processed green waste and tires. *Olinda Alpha will not be receiving such things as unprocessed green waste, wood waste, construction and demolition debris, inert waste, treated medical waste, asbestos or asbestos containing waste, anti-freeze, batteries, oil, paint, auto shredder waste, etc. There will be no processing or sorting of waste other than burying it in the landfill. There will be no sorting or chipping or grinding of waste.* S6-22

It will not be necessary for the issuance of a tire-handling permit for the landfill to receive tires; it will be necessary for the landfill to meet all the requirements that a tire handling facility must meet in the storage and handling of tires. S6-23

Alternative Daily Cover

The environmental document did not mention the use of alternative daily cover. The use of alternative daily cover and the types of alternative daily cover must be discussed if it is the intent of the operator use it. The mere fact that the types of alternative daily cover are mentioned in regulations does not in and of itself give permission to the operator to pick and choose the type they wish to use. There must be site-specific analysis for the different types of alternative daily cover that an operator may wish to use. S6-24

Landfill Boundary

The environmental document indicates that Olinda Alpha Landfill comprises 565 acres and the current solid waste facilities permit indicates that the Total Permitted Acreage is 667 acres. In the Final Environmental Impact Report, please explain the 102-acre difference. S6-25

Mitigation Measures

Significant impacts after mitigation to the environment have been identified in the area of Air Quality. Please forward the Statement of Overriding Considerations for Air Quality to the Board prior to its adoption by the approving agency. S6-26

As required by Public Resource Code (PRC), Section 21081.6, the Lead Agency should submit a Mitigation Reporting or Monitoring Program at the time of local certification of an Environmental Impact Report or adoption of a Negative Declaration. This plan should identify the environmental impacts associated with the proposed project, identify mitigation measures to reduce impacts to a less than significant level, identify agencies responsible for ensuring the implementation of the proposed mitigations, and specify a monitoring/tracking mechanism. PRC, § 21080 (c)(2) requires that mitigation measures "...avoid the effects or mitigate the effects to the point where clearly no significant effects on the environment would occur." The Mitigation Reporting or Monitoring Program is also required as a condition of project approval. PRC § 21081.6(b) also requires that "A public agency shall provide the measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures." S6-27

The Mitigation Reporting or Monitoring Program should also indicate that agencies designated to enforce mitigation measures in the Environmental Impact Report have reviewed the Mitigation Reporting or Monitoring Program and agreed that they have the authority and means to accomplish the designated enforcement responsibilities. S6-28

BOARD CEQA REVIEW

As a Responsible Agency under CEQA, Board staff's comments on environmental documents are intended to assist the Lead Agency in developing an environmental document that will be as complete and adequate as possible for use by the Lead Agency and all Responsible Agencies. S6-29

Board staff's comments are intended to help decision-makers 1) identify potential impacts from proposed projects; 2) determine whether any such impacts are significant; and 3) ascertain whether significant impacts can be mitigated to a level of insignificance in compliance with the CEQA statutes and guidelines. S6-30

When performing the initial review of a CEQA document such as a Draft Environmental Impact Report or Negative Declaration during the circulation process, the first analysis the Board staff must make, is to evaluate whether or not the proposed CEQA document clearly describes all phases of the project and assesses all potential primary and secondary impacts to the S6-31

environment and/or public health and safety that could occur if the proposed project is implemented. S6-31

When evaluating the adequacy of an environmental document for purposes of SWFP concurrence, Board staff must compare the design and operation of the facility as described in the proposed SWFP with the project as described and evaluated in the environmental document cited for CEQA compliance in the proposed SWFP. S6-32

In order for Board staff to evaluate and recommend whether or not the environmental document is adequate for use in the Board's permitting process, the proposed project must be described in sufficient detail for Board staff to understand and evaluate the proposed project, potential environmental impacts, proposed mitigation measures, and findings as presented by the Lead Agency. S6-33

When the proposed SWFP is received by the Board along with the citation of evidence of CEQA compliance by the Local Enforcement Agency (LEA), the second analysis performed by Board staff is to evaluate whether or not the CEQA evaluation in the cited environmental document supports the requested specifications, revisions, and/or conditions of the proposed SWFP. For instance, does the environmental document clearly describe and assess the potential air quality, water quality, geological impacts, traffic, noise, dust, vector and other health and safety impacts that can be associated with the proposed solid waste facility or changes in design and/or operation? When this type of information is included and addressed in the environmental document, the SWFP concurrence process is greatly facilitated. S6-34

After comparison of the cited CEQA document with the proposed SWFP, Board staff makes a recommendation to the Board regarding the adequacy of the CEQA document for the Board's SWFP concurrence purposes. The Board members make the final determination of the adequacy of the CEQA document for SWFP concurrence as well as whether or not to concur in issuance of the SWFP. S6-35

SUMMARY

The Board staff thanks the Lead Agency for the opportunity to review and comment on the Draft Environmental Impact Report and hopes that this comment letter will be useful to the Lead Agency in carrying out their responsibilities in the CEQA process. S6-36

The Board staff requests copies of any subsequent environmental documents including, the Final Environmental Impact Report, the Report of Facility Information/Report of Disposal Site Information, any Statements of Overriding Consideration, copies of public notices, and any Notices of Determination for this project. S6-37

Please refer to 14 CCR, § 15094(c) that states: "<u>If the project requires a discretionary approval from any state agency, the notice of determination shall also file with OPR</u> [State Clearinghouse]." S6-38

The Board staff requests that the Lead Agency provide a copy of its responses to the Board's comments at least ten days before certifying the Final Environmental Impact Report. Refer to PRC § 21092.5(a). S6-39

If the document is certified during a public hearing, Board staff request ten days advance notice of this hearing. If the document is certified without a public hearing, Board staff requests ten days advance notification of the date of the certification and project approval by the decision-making body. S6-40

If you have any questions regarding these comments, please contact me at 916.341.6728 or email at rseamans@ciwmb.ca.gov. S6-41

Sincerely,

Raymond M. Seamans
Permitting and Inspection Branch, Region 4
Environmental Review
Permitting and Enforcement Division
California Integrated Waste Management Board

cc: Tadese Gebre-Hawariat
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Suzanne Hambleton, Supervisor
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Patty Henshaw
County of Orange Health Care Agency
Environmental Health Division
2009 E Edinger Avenue
Santa Ana, CA 92705

S6 RESPONSES TO COMMENTS FROM THE CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD DATED JULY 30, 2004

S6-1 Comment noted. No response necessary.

S6-2 Comment noted. No response necessary.

S6-3 Comment noted. No response necessary.

S6-4 Comment noted. No response necessary.

S6-5 Comment noted. No response necessary.

S6-6 Comment noted. No response necessary.

S6-7 Comment noted. No response necessary.

S6-8 Comment noted. No response necessary.

S6-9 Comment noted. No response necessary.

S6-10 Comment noted. No response necessary.

S6-11 It is the intent of the operator to continue maintenance and special projects during this same time period.

S6-12 Similar to the existing landfill operation, the proposed project will only accept municipal solid waste Monday through Saturday, 6:00 AM to 4:00 PM. The landfill will not accept municipal solid waste on Sundays or during evening and nighttime hours. Therefore, no significant adverse environmental impacts would occur associated with Sunday, evening or nighttime operations.

Special projects would occur infrequently and as needed, and would include maintenance and repair work to landfill roads and drainage channels. Dirt is hauled to the wet deck stockpile occasionally on Sundays.

S6-13 The lateral expansion would expand the existing refuse footprint an estimated 33 acres within the existing property boundary of Olinda Alpha Landfill. After the geotechnical field data is obtained and detailed slope stability analysis is conducted, the actual lateral expansion may be less than 33 acres, but will not extend past the 33 acres identified in the DEIR. Therefore, the DEIR evaluated the worst case potential impacts of an expansion area of 33 acres.

S6-14 The maximum or peak elevation of 1,415 feet above mean sea level (amsl) discussed in the DEIR is the elevation of the landfill prior to placement of final cover. Final cover is not accounted for in the total airspace for the site until the landfill is within five years of closure. Natural settlement of landfill mass will likely create enough additional airspace to accommodate final cover volume.

S6-15 The estimated depth of refuse is the distance between the base of the landfill and the proposed final elevation. The maximum refuse depth cannot be presented in feet amsl since it is a measured difference between two elevations. Based on review of a pre-landfill topographic map and the proposed final grading plan, the proposed maximum refuse depth with the final landfill elevation set at 1,415 amsl will be approximately 490 feet (this is 115 feet greater than the 375 foot maximum depth of refuse for the currently permitted landfill design). The vertical expansion is to be placed over existing waste so this expansion area will not be lower than the existing landfill disposal area. The lateral expansion area is adjacent to the existing waste prism and the bottom elevation for that expansion is proposed at approximately 1,200 feet amsl which is not lower than the existing landfill disposal area base elevation.

S6-16 Load checking is discussed in the DEIR in Section 4.5.5, page 4-21, paragraph 2. This text provides a brief description of the load check program for the site and procedures for the disposition of the material found to be unacceptable. Information regarding load check frequency and who performs load check procedures is provided in the Section 4.5.5 in the DEIR. Load checks are performed on a minimum of one random load check per one thousand tons of waste received. Haulers are subject to load checks if their loads are considered suspicious, are from service areas outside the landfill's waste shed or if their trucks are not typically used for transporting municipal solid waste. Moreover, load checks are conducted on loads transported by previous offenders. A minimum of one designated landfill employee properly trained in the recognition, handling and management of hazardous waste (designated landfill employee) perform the load checks.

S6-17 The annual average permitted daily tonnage (7,000 TPD) for the site was established between the IWMD and the City of Brea as part of a Memorandum of Understanding agreement.

Table 5.5-1 on page 5.5-3 in the DEIR lists all the vehicle trips that were included in the traffic analysis. These include all refuse vehicles, exempt wastes, Brea green recycling facility trips, landfill employee vehicle trips, Getty Synthetic Fuel employee vehicle trips, Shepherd employee vehicle trips, on-site Salvage Company employee vehicle trips and other miscellaneous trips.

S6-18 All waste accepted at the site is discussed in Section 4.5.5, page 4-21 of the DEIR. The landfill accepts non-hazardous, Class III municipal solid waste in accordance with California Code of Regulations, Title 27, requirements and the site's current Solid Waste Facilities Permit. There are no violations and the proposed project is in compliance with all permits. Wastes to be accepted for the expansion project are not proposed to change from current permitted operations.

S6-19 Clean soil transported to the site from off-site sources is not proposed to be different than that currently accepted at the site. The traffic impact analysis conducted for the DEIR accounted for current traffic volumes across the scales including MSW, clean cover soil and processed green material (PGM) (see Section 5.5.1.2, Current Level of Traffic Generated By The Existing Landfill, of the DEIR).

S6-20 See response S6-18 and S6-19. The Olinda Alpha Landfill accepts and exempts non-contaminated, clean soil and processed green materials that are used for daily and alternative daily cover. Asphalt is also accepted as an exempted commodity and is used to construct wet-weather decks. The DEIR traffic study included both solid wastes and exempt wastes that will be received for the proposed project.

Olinda Alpha Landfill is the only Orange County landfill currently permitted to accept tires. IWMD contracts with a tire recycler to remove tires from the site and recycle them. Tires are not buried at the landfill. The storage and handling of tires is not proposed to change from the currently permitted operations.

S6-21 Comment noted. No response necessary.

S6-22 All materials currently accepted at the site are discussed in Section 4.5.5, page 4-21, of the DEIR. These wastes do include wood waste, construction and demolition debris, inert wastes, and autoclaved medical wastes. There will be no processing or sorting of wastes; however, salvaging will continue to be performed as discussed in Section 4.5.5. It should be noted that the proposed horizontal and vertical expansion project does not propose to change the waste stream currently permitted at the landfill.

S6-23 Comment noted. Refer to response to comment S6-20, above.

S6-24 Alternative daily cover (ADC) is mentioned in Section 4.4.1.6, page 4-12, of the DEIR in regards to odor control; however, no specific types of ADC are discussed. Currently, the site is permitted to use PGM and geosynthetic blankets for alternative daily cover in accordance with 27 CCR, Section 20690 (b)(3). No other alternative daily covers are used or planned to be used for the expansion project. It should be noted that the horizontal and vertical expansion project does not propose to change the permitted daily cover operations at the landfill; therefore, no discussion was included in the DEIR.

S6-25 The 1996 Solid Waste Facility Permit (SWFP) indicates a total permitted area of 667 acres. Subsequent to issuance of the 1996 SWFP, the County transferred and purchased property resulting in a current property area of 565 acres as documented in the December 2002 Report of Facility Information which is a conditioning document of an updated 2002 Solid Waste Facility Permit for the site. One hundred and two (102) acres of

landfill property were transferred to the County of Orange Harbors, Beaches & Parks for purposes of establishing a future County regional park in that location.

S6-26 The Statement of Overriding Considerations will be prepared as part of the Final EIR.

S6-27 Comment noted. The Mitigation Monitoring and Reporting Program for the project will be prepared as part of the Final EIR.

S6-28 Comment noted. The MMRP will identify the agencies responsible for enforcing the project mitigation measures.

S6-29 Comment noted. No response necessary.

S6-30 Comment noted. No response necessary.

S6-31 Comment noted. No response necessary.

S6-32 Comment noted. No response necessary.

S6-33 Comment noted. No response necessary.

S6-34 Comment noted. No response necessary.

S6-35 Comment noted. No response necessary.

S6-36 Comment noted. No response necessary.

S6-37 Comment noted. No response necessary.

S6-38 Comment noted. The Notice of Determination will be filed with both the County Clerk and the State Clearinghouse.

S6-39 Comment noted. No response necessary.

S6-40 Comment noted. No response necessary.

S6-41 Comment noted. No response necessary.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Arnold Schwarzenegger
Governor

Jan Boel
Acting Director

August 3, 2004

S7

Ray Hull
Orange County
320 North Flower Steet, Suite 400
Santa Ana, CA 92703

Subject: Regional Landfill Options for Orange County (RELOOC) Strategic Plan - Olinda Alpha Landfill Implementation EIR
SCH#: 2004011055

Dear Ray Hull:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on August 2, 2004, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly. S7-1

Please note that Section 21104(c) of the California Public Resources Code states that: S7-2

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly. S7-3

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. S7-4

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2004011055
Project Title Regional Landfill Options for Orange County (RELOOC) Strategic Plan - Olinda Alpha Landfill
Lead Agency Implementation EIR
Orange County

Type EIR Draft EIR

Description The proposed project includes both a vertical and a horizontal expansion of Olinda Alpha Landfill within the existing landfill property to meet the County's near term solid waste disposal needs. Project alternative includes out-of-county waste export and increased tons per day of municipal solid waste at active Orange County Landfills.

Lead Agency Contact

Name Ray Hull
Agency Orange County
Phone 714-834-7202 **Fax**
email
Address 320 North Flower Steet, Suite 400
City Santa Ana **State** CA **Zip** 92703

Project Location

County Orange
City Brea
Region
Cross Streets Lambert Road (South) and Valencia Avenue (Southwest)
Parcel No.
Township 3S **Range** 9W **Section** 8 **Base** Yorba

Proximity to:

Highways SR-57
Airports
Railways
Waterways
Schools
Land Use Public Facilities / Landfill Site (4(LS))
Z: General Agricultural (Public Facilities)

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Growth Inducing; Landuse; Noise; Other Issues; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wildlife; Biological Resources

Reviewing Agencies Resources Agency; Regional Water Quality Control Board, Region 8; Department of Parks and Recreation; Native American Heritage Commission; Office of Historic Preservation; Integrated Waste Management Board; Department of Fish and Game, Region 5; Department of Water Resources; California Highway Patrol; Caltrans, District 12; State Water Resources Control Board, Division of Water Quality; Department of Toxic Substances Control

Date Received 06/17/2004 **Start of Review** 06/17/2004 **End of Review** 08/02/2004

Note: Blanks in data fields result from insufficient information provided by lead agency.

S7 RESPONSES TO COMMENTS FROM THE STATE OF CALIFORNIA GOVERNOR'S OFFICE OF PLANNING AND RESEARCH DATED AUGUST 3, 2004

S7-1 Comment noted. No response necessary.

S7-2 Comment noted. No response necessary.

S7-3 Comment noted. No response necessary.

S7-4 Comment noted. No response necessary.

REGIONAL AND LOCAL AGENCIES

R1

CITY OF LAKE FOREST

July 26, 2004

Mr. Ray Hull
Integrated Waste Management Department
County of Orange
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: Draft Environmental Impact Report 588
Regional Landfill Options for Orange County Strategic Plan - Olinda Alpha Landfill Implementation

Dear Mr. Hull:

Thank you for the opportunity to review the subject document. Staff has reviewed the document and we have no comments associated with the construction and operation of the proposed project expansion of the existing Olinda Alpha Landfill. R1-1

If you have any questions, please contact Irene Kha, Acting Management Analyst, at (949) 461-3498. R1-2

Very truly yours,
CITY OF LAKE FOREST

For

Robert L. Woodings, P.E.
Director of Public Works/City Engineer

cc: Benjamin Siegel, Acting Assistant to the City Manager

25550 Commercentre Dr., Suite 100
Lake Forest, CA 92630
(949) 461-3400
City Hall Fax: (949) 461-3511
Building/Planning/Public Works Fax: (949) 461-3512

R1 RESPONSES TO COMMENTS FROM THE CITY OF LAKE FOREST DATED JULY 19, 2004

R1-1 Comment noted. No response necessary.

R1-2 Comment noted. No response necessary.

R2

COUNTY OF ORANGE
HEALTH CARE AGENCY

REGULATORY HEALTH SERVICES
ENVIRONMENTAL HEALTH

Excellence
Integrity
Service

JULIETTE A. POULSON, RN, MN
DIRECTOR

DAVID L. RILEY
ASSISTANT DIRECTOR

MIKE SPURGEON
DEPUTY AGENCY DIRECTOR
REGULATORY HEALTH SERVICES

STEVEN K. WONG, REHS, MPH
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ENVIRONMENTAL HEALTH

MAILING ADDRESS:
2009 EAST EDINGER AVENUE
SANTA ANA, CA 92705-4720

TELEPHONE: (714) 667-3500
FAX: (714) 972-0749
E-MAIL: ehealth@ochca.com

August 2, 2004

Raymond Hull, RELOOC Project Manager
County of Orange IWMD
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

Dear Mr. Hull,

Subject: **Comments on Draft Environmental Impact Report for RELOOC Strategic Plan – Olinda Alpha Landfill (SWIS No. 30-AB-0035) Implementation, Brea**

On July 1, 2004, the Orange County Solid Waste Local Enforcement Agency (LEA) received a copy Draft Environmental Impact Report (DEIR) No. 588 (State Clearinghouse No. 2004011055) analyzing the impacts of the proposed horizontal and vertical expansion of Olinda Alpha Landfill. After review, the LEA has the following comments: R2-1

1. Section 4.4.1, page 4-9: Estimate of 16 yd^3 as average amount of soil hauled by a truck seems rather high. Based on our experience, a maximum of 14 yd^3 per truck should be used in the calculations. R2-2
2. Section 5.10.4.2, Accidental Release of Landfill Gas and Leachate, page 5.10-3: Additional perimeter landfill gas monitoring probes may (not will) be required to be installed as a result of the proposed horizontal expansion. R2-3

Thank you for the opportunity to review this CEQA document. If you have any questions, please contact me. R2-4

Sincerely,

Ossama "Sam" Abu-Shaban, PE, DEE
Senior Civil Engineer
Solid Waste Local Enforcement Agency
Environmental Health

cc: Raymond Seamans, CIWMB

R2 RESPONSES TO COMMENTS FROM THE COUNTY OF ORANGE HEALTH CARE AGENCY DATED AUGUST 2, 2004

R2-1 Comment noted. No response necessary.

R2-2 A review of the County's scale records for fiscal year (FY) 2002/2003 indicates that there have been dirt loads brought to the landfill in excess of 16 cubic yards (cy). However, as commented on by the County of Orange Health Care Agency, the average is closer to 14 cy than 16 cy for large dirt hauling vehicles. Because the DEIR traffic analyses and projections are based on actual overall traffic counts conducted for the DEIR, traffic impact analysis included trucks carting soil. Therefore, there are no extra truck trips required to meet the demand of 480,000 cy per year projected for 2015 and the conclusion that future soil import will not generate more vehicles in the future than is currently hauling to the site is valid.

R2-3 Comment noted. The last paragraph on page 5.10-3 of the DEIR is corrected by reference to read: "may" instead of "will."

R2-4 Comment noted. No response necessary.

R3

City of BREA CALIFORNIA

Post-it® Fax Note 7671	Date 8-2	# of pages 3
To Ray Hull	From Charlie View	
Co./Dept. IWMD	Co. C of Brea	
Phone #	Phone # 990-2690	
Fax # 834-4057	Fax #	

August 2, 2004

Mr. Ray Hull
RELOOC Project Manager
County of Orange
Integrated Waste Management Department
320 N. Flower Street
Suite 400
Santa Ana, CA 92703

SUBJECT: COMMENTS ON RELOOC DEIR

Dear Mr. Hull:

I am writing in response to the County's Draft Environmental Impact Report (DEIR) for the RELOOC project. The City of Brea appreciates the opportunity to comment on this environmental impact analysis. We offer the following comments for your consideration: R3-1

Traffic –

1. The DEIR notes (page 5.5-27) the City's ability to provide for traffic control adjustments related to sports park/school activities. The DEIR should note that this area of Valencia Avenue is controlled by Caltrans and it holds jurisdiction over any such adjustments. Additionally, the DEIR should note the City's Traffic *Committee* rather than Commission as the body involved in these discussions within the City organization. R3-2

2. Additional discussion on page 5.5-28 regarding speed limits and left turn storage on select road segments needs to acknowledge Caltrans jurisdiction of Imperial Highway, as well as portions of Valencia Avenue. The City does not have primary jurisdiction over these road segments. R3-3

3. The DEIR should discuss and acknowledge that the anticipated future vehicle mix is envisioned to shift towards larger, transfer trucks and away from smaller carriers. This shift should be addressed within associated DEIR impact analysis. R3-4

4. Please clarify that truck trips associated with the future need (2015?) to haul in landfill cover materials are captured within the truck trip allocations contained within the DEIR traffic analysis. It would be our expectation that the proposed maximum truck trips associated with landfill operations include these trips and that combined totals not exceed proposed daily maximums for the facility. R3-5

5. The DEIR notes that truck route violations on Lambert Road have occurred historically. Mitigation measures designed to prevent this activity should be included as part of the Final EIR. For example, mitigation might include video surveillance equipment networked to City facilities to further curtail violations. R3-6

6. Mitigation measures should be proposed to provide for on-going funding for road maintenance and pavement repairs which may be needed during the life of the landfill. The key goal of this measure should be the timely identification and repair of any damage to streets which are routes to the landfill. Additionally, a final street and pavement rehabilitation program outlining work to be completed at final landfill closure should be provided. Each of these measures should include coordination and consultation with the City of Brea and Caltrans. R3-7

Aesthetics –

1. The discussion and exhibits within this section are somewhat general and do not provide the level of comprehensive analysis we feel is required to determine areas of impact and identify appropriate mitigation. The color viewshed simulation exhibits have high levels of contrast and grain and are hard to read. Additional, and refined, views should be identified both from within the Olinda Ranch project and at other critical locations within eastern Brea as a part of this analysis. R3-8

2. The proposed mitigation measure calling for revisions to the Landscape Master Plan (LMP) for the landfill is too general and more specific criteria for any plan revisions should be provided. The proposed mitigation calling for LMP revisions should include interim and final landscaping and should be written in a more detailed manner. Considerations for a variety of vantage points within the Olinda Ranch project and other surrounding areas should be integral to determining interim and final landscape needs and the crafting of this mitigation measure. R3-9

3. The aesthetic appearance of the landfill is an important consideration for the City—both during operations and at final closure. The DEIR focuses largely on final appearance and should be expanded to address aesthetics during the proposed operational period. Mitigation providing for landscape treatments during operations should also be provided, particularly for south facing slopes. R3-10

4. Final grading configurations for the landfill should serve to blend the site into the surrounding hillsides in as natural a configuration as possible, avoiding a more traditional, "manufactured", appearance. Final mitigation measure language should reflect this goal. R3-11

5. Final mitigation language should provide for City of Brea approval on all interim and final grading and landscaping designs and should be more specific regarding final expectations (i.e. treatments, materials, etc). R3-12

6. Please provide discussion and confirmation that the proposed third LFG flare is not visible beyond the landfill boundaries. R3-13

Noise –

Page 5.7-20 of the DEIR includes the following statement:

> *"Though the project will not increase noise above the existing conditions or the 65 dBA CNEL standard because it would not change the volume of traffic as it is occurring in 2004, the continuation of landfill activities due to the project at 2013 would result in a 12 dBA increase above the no project scenario. As such, the 12 dBA increase in noise is considered substantial and is a potentially significant adverse impact related to long term transportation noise."*

1. We feel that the proposed mitigation measure for the County to participate and provide for its "fair share" costs within any future City of Brea implemented noise reduction program does not conclusively address identified noise impacts (mitigation measure N-5). The EIR should provide for any necessary improvements (i.e. sound attenuation walls) within mitigation measures to resolve any identified impacts. These measures should provide for specific improvements, such as the rubberized paving treatments discussed within mitigation measure N-5, and such improvements should be provided for all critical areas of the haul route through the City of Brea. R3-14

2. The DEIR does not address nuisance level noise and vibration impacts anticipated for the project. This includes potential impacts from co-generation facilities as well as gas flaring—each the subject of complaints received by the City for existing landfill operations. The DEIR provides no measured data regarding vibration. A further, detailed, analysis of vibration issues should be provided. The City has received specific vibration complaints from residents near Imperial Highway and Placentia Avenue and this should be a specific focus area within the DEIR. R3-15

Thank you for the opportunity to comment on the DEIR. Feel free to reach me at (714) 990-7689 if you should have any questions regarding our comments. R3-16

Sincerely,

Charles View
Development Services Director

CC Tim O'Donnell, City Manager

R3 RESPONSES TO COMMENTS FROM THE CITY OF BREA DATED AUGUST 2, 2004

R3-1 Comment noted. Refer to responses to comments R3-2 to R3-16, below.

R3-2 Comments noted. The discussion on page 5.5-27 of the DEIR is corrected by reference to reflect Caltrans' involvement and jurisdiction over traffic control adjustments along Valencia Avenue. In addition, the discussion on page 5.5-27 of the DEIR is corrected by reference to read: "Committee" instead of "Commission."

R3-3 Comments noted. The discussion on page 5.5-28 of the DEIR is corrected by reference to reflect Caltrans' involvement and jurisdiction over traffic control along Imperial Highway and Valencia Avenue.

R3-4 As indicated in the DEIR, the proposed project would not include a tonnage increase. The Maximum Daily Permitted Tonnage for the proposed project would be 8,000 TPD with an annual average of 7,000 TPD, which is the same as the existing conditions. In addition, exempt waste tonnages, which currently average between 3,000 to 4,000 TPD, would be very similar for the proposed project. Currently, it is anticipated that in the future, the ratio of waste hauling vehicles (i.e., transfer, pacer and self-haul) transporting solid wastes to the Olinda Alpha Landfill will not substantially change from existing conditions.

R3-5 All potential trips into the landfill, as a result of this project, have been included in the Traffic impact analysis for the DEIR. The DEIR indicates on page 5.5-15, second and third paragraphs, that the analysis data was derived from traffic volumes across the scales which include MSW, dirt cover and green waste. Also, the end of the third paragraph on Page 5.5-15 clarifies that the permitted maximum daily and average daily tonnage per day limits apply only to MSW.

R3-6 Olinda Alpha Landfill waste hauling vehicle traffic is prohibited from utilizing Lambert Road, as indicated by signage on the 57 Freeway. The designated truck routes to the landfill include Imperial Highway and Valencia Boulevard. Truck traffic on Lambert Road west of Valencia Avenue in violation of the weight limitation is small and was not found to be a significant adverse impact of this project; therefore, no mitigation was deemed to be required. The DEIR mentions that these violations could be reduced by improving signage advising trucks of the limitation. Signing improvements were suggested as a preventive measure in lieu of "surveillance" of the violation activity after it has occurred. In addition, the California Highway Patrol and the City of Brea Police Department perform random inspections of commercial trucks on public roadways within the City of Brea. The drivers of vehicles that do not pass inspection are cited for violations.

R3-7 If the City and/or Caltrans (which based on the City's previous comments has jurisdiction over both Imperial Highway and over Valencia Avenue from Imperial Highway to

Lambert Road) has a program to provide funding for road maintenance and repairs, the IWMD would consider participation in the program on an equitable share basis.

R3-8 The existing conditions photographs and visual simulations in the aesthetic section in the DEIR were enlarged to allow the viewer to more clearly see the elements of the view. One photograph or view simulation is provided per page and these larger images are attached to this response. As noted in the text in the DEIR, in each simulation the permitted (1,300 foot) height of the landfill is shown first and the simulation of the proposed (1,415 foot) height is shown next from the same vantage point. This allows the reader to compare the visual difference between the permitted and proposed heights. The visual simulations show the view as it would appear approximately four years following revegetation of the slopes.

There are few locations within the Olinda Ranch development from which the landfill can be seen, because of intervening topography, vegetation or structures. Figure 5.8-4, View Simulation 1A and 1B, from north of Carbon Canyon Road looking past the Olinda Ranch Development with the landfill beyond, provides the most expansive view of the landfill from the Olinda Ranch area. For this reason, this view point was used for a view simulation. In response to this comment by the City of Brea, three additional viewshed simulations of the landfill have been provided in Attachment G of this document. The locations for viewshed simulations include a residential area located just south of the intersection of East Lambert Road/Sunflower Street, a viewshed simulation from Condor Avenue/Hawks Drive in Olinda Ranch and a viewshed simulation from the North Ridge Trail in Chino Hills State Park. Both Summer/Fall and Winter/Spring simulations of the landfill have been provided from these locations. The viewshed simulations show that the proposed expansion would obscure slightly more of the sky in the views, but otherwise the views of the currently permitted landfill elevations in the 2013 would be similar to the proposed project landfill elevations in the year 2021. Therefore, with implementation of mitigation measure AS-1, included in Section 5.8 (Aesthetics) of Draft EIR 588, the adverse visual impacts of the proposed expansion would be less than significant.

R3-9 The current Landscape Master Plan (LMP) incorporates detailed design requirements for both interim and final landscaping. The LMP identifies planting zones including north facing slopes, the deck, southeast facing slopes upper elevations, southwest facing slopes lower elevations and southwest facing slopes upper elevations. Specific plant species are identified for each of these areas to blend the landfill into the surrounding areas. The LMP also identifies phases and seed mixes for the interim Landscape Plan. Mitigation measure AS-1 requires that the LMP be expanded to include the proposed landfill expansion. The same amount of detail in the original LMP will be provided in the revised LMP that will include the expanded landfill. Specific areas of the expanded landfill will be identified for those landscape treatments designated in the original LMP for both interim and final landscape plans. The mitigation measure also requires the approval of the revised LMP by IWMD and the City of Brea.

R3-10 As described in Response to Comment R3-9, the Revised LMP will include requirements for interim landscape treatment. The existing LMP addresses south facing slopes and the Revised LMP will incorporate detailed design treatments to include the south facing slopes of the proposed landfill expansion area.

R3-11 The final grading plan for the landfill does incorporate a more undulating front face slope and two deck area mounds to reduce the appearance of a traditional, manufactured grading configuration while meeting operational requirements for drainage, optimizing the deck for potential future park uses and meeting the project objective of maximizing capacity. In addition, the revised Landscape Plan referred to in Mitigation Measure AS-1 intends to blend the landfill landscape with the adjacent native open space area.

R3-12 Mitigation measure AS-1 provides for City of Brea approval of the revised LMP that includes interim and final landscape plans. Refer to response to comment R3-8, above, for a discussion of the detail elements of the LMP and Revised LMP.

R3-13 The structures of the existing two enclosed gas flare stacksat the landfill are visible beyond the landfill boundaries from locations on Sandpiper Way in the northwest part of Olinda Ranch PC and from some homes further east of this street in the middle section of Olinda Ranch PC. The structure of the third gas flare stack would also be visible from these locations in Olinda Ranch. The third flare will be the exact same height as the two existing flares. However, similar to the two existing flares, the third flare will be within an enclosed stack (no visible flame) and will be painted with non-reflective tan paint that matches the surrounding terrain.

R3-14 Opinion noted. The County's participation in and funding of a Fair Share Program for noise mitigation constitutes an appropriate contribution to the noise exposure along roads used by project related traffic. It is considered appropriate because, while project traffic does contribute to significant adverse levels of traffic noise exposure, it is not the sole source of traffic noise. The landfill traffic is less than 2,000 daily vehicles out of a total of 50,000 to 61,000 total vehicles (or less than four percent of the total vehicles) on Imperial Highway from SR 57 to Valencia Avenue, about 10 to 17 percent of the total vehicles on Valencia Avenue between Lambert Road and Imperial Highway, and about 50 percent of the total vehicles on Valencia Avenue north of Lambert Road directly south of the landfill. Consequently, a proportional contribution to a Fair Share Program is considered appropriate to mitigate the proportional level of impacts attributable to the project.

R3-15 The Draft EIR assessed vibration impacts from on-road truck vibration based on methodologies and criteria developed by the Federal Transit Administration and Caltrans (1992 Technical Advisory). No attempt to factor out non-landfill truck traffic was made. Even so, applying these published sources to the known minimum distance between the roadway centerline and residences along the landfill access roads led to the conclusion in the Draft EIR that vibration from total traffic would be less than the threshold of human perception, and therefore absent.

IWMD contracted for additional research on vibration impacts in response to the City of Brea's comment that a more detailed study of vibration be undertaken. This study is included here as Attachment H to these responses. Field measurements of vibration on Imperial Highway and

Valencia were made in mid-September, 2004. Vibration sensor locations were chosen so that roadway vibration on homes closest to the road would be measured. Again, no attempt to factor out non-landfill traffic was made. This is important, because landfill traffic is less than four (4) percent of the total traffic on Imperial, about 10 to 17 percent of the traffic on Valencia between Imperial and Lambert, and about 50 percent of the total vehicles on Valencia north of Lambert.

Results of the field measurements for vibration and levels of perception (determined by the Federal Transit Administration) are as follows:

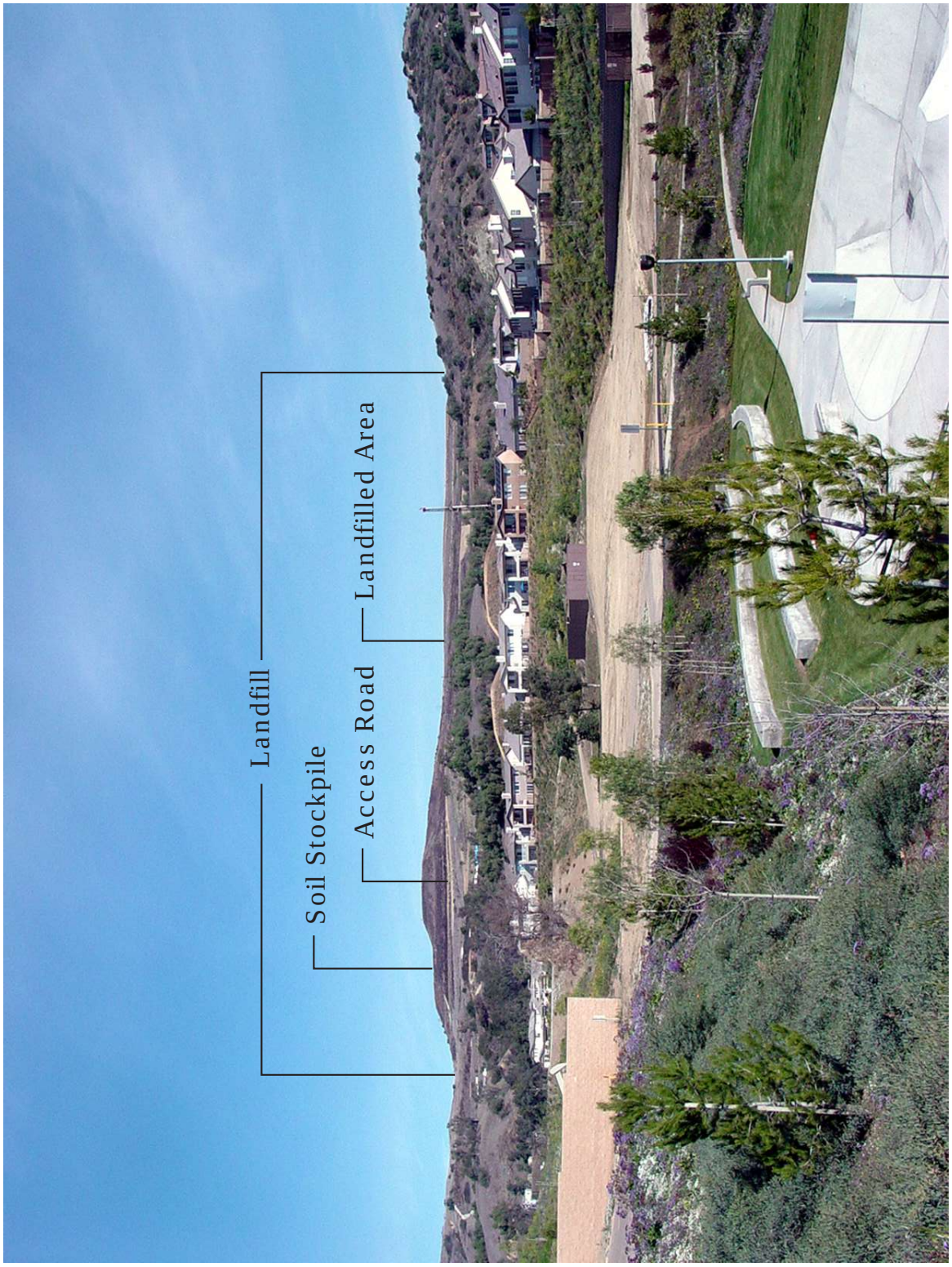
> South side of Imperial (N. Placentia Avenue). For residences closest to the roadway (highest reading): 63 VdB, which is below the level of perception.
>
> North side of Imperial (Castlegate Lane). For residences closest to the roadway (highest reading): 82 VdB, which is distinctly perceptible.
>
> Valencia Avenue north of Lambert (Santa Fe Road). For residences closest to the roadway (highest reading): 70 VdB, which is barely perceptible.
>
> Valencia Avenue north of Lambert (Sandpiper Way). For the residence closest to the roadway (highest reading): 79 VdB, which is distinctly perceptible.

No regulatory threshold for ground-borne vibrations or noise has been established.. For this project, the threshold level of significance is set at 84 VdB. Vibration readings of 85 VdB or above would be considered significant. Within the 75 VdB to 84 VdB range, the level of human annoyance strongly depends on the sensitivity of the individual and other factors, such as time of day. Some important considerations for landfill related truck traffic include:

- In contrast to some transit-caused impacts, vibrations from individual truck passes occur for a very short duration.
- Truck traffic is limited to a portion of the day (6 a.m. to 4 p.m.), and peak landfill related truck traffic occurs near the middle portion of the day.
- Truck traffic is at a lower level on Saturday, with none on Sunday.

Ground-borne vibrations below 85 VdB would be below the level at which most people would be strongly annoyed (1995, Federal Transit Administration), and would be well within the range of recommended daytime vibration for residential species in the American National Standards Institute (ANSI) S3.29-1983 "Guide to Evaluation of Human Exposure to Vibration in Buildings." Since none of the readings of roadway vibration from all vehicles exceed 84 VdB, the impact from vibration from landfill vehicles is determined to be less than significant, and no mitigation is necessary.

R3-16 Comment noted. No response necessary.



View 1. From north of Carbon Canyon Road looking north toward the Landfill.

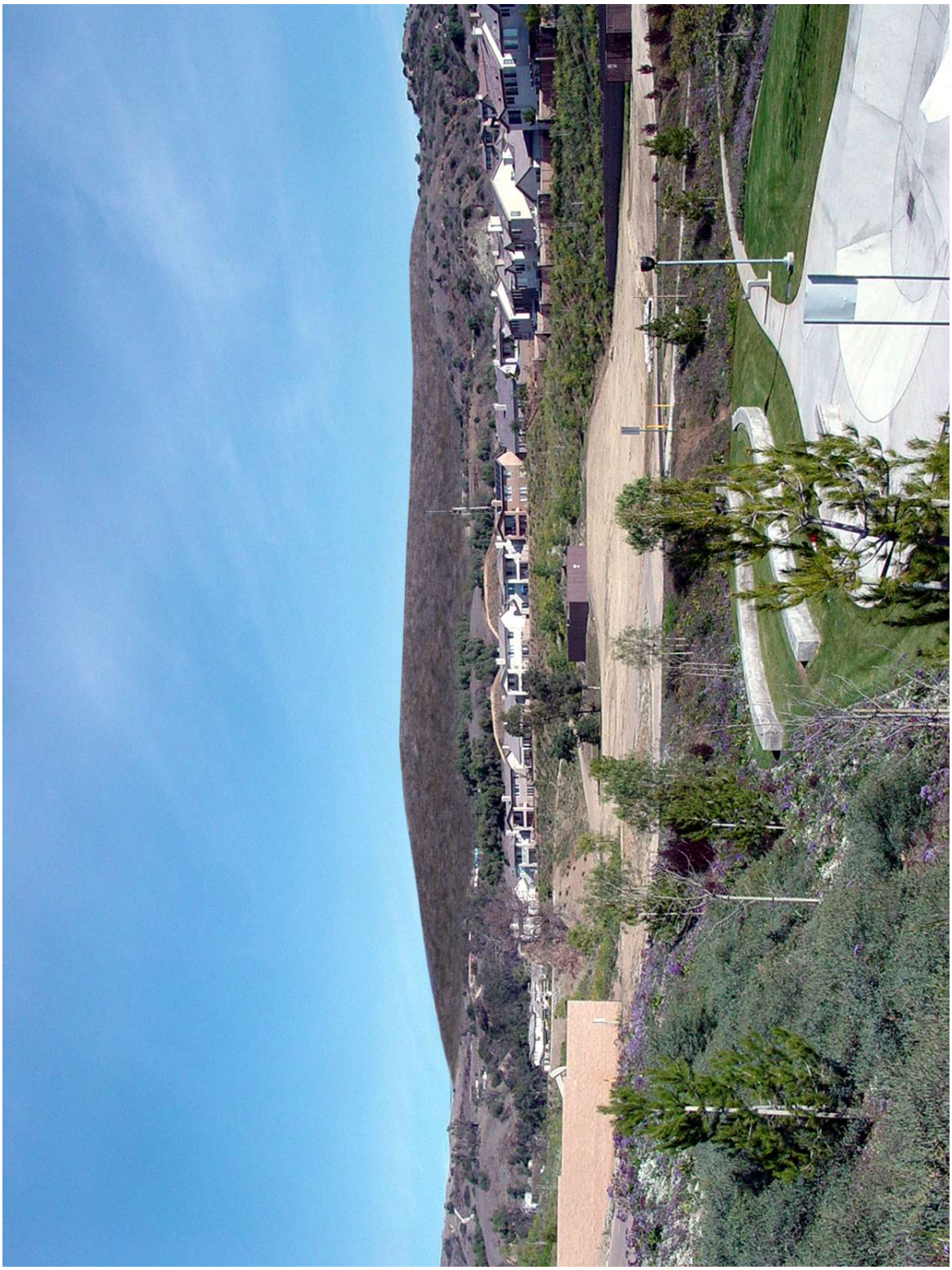
Source: P&D Consultants, Inc. (2004).

Figure 5.8-3
Existing Views

View 2. From Carbon Canyon Regional Park looking northwest toward the Landfill.

Source: P&D Consultants, Inc. (2004).

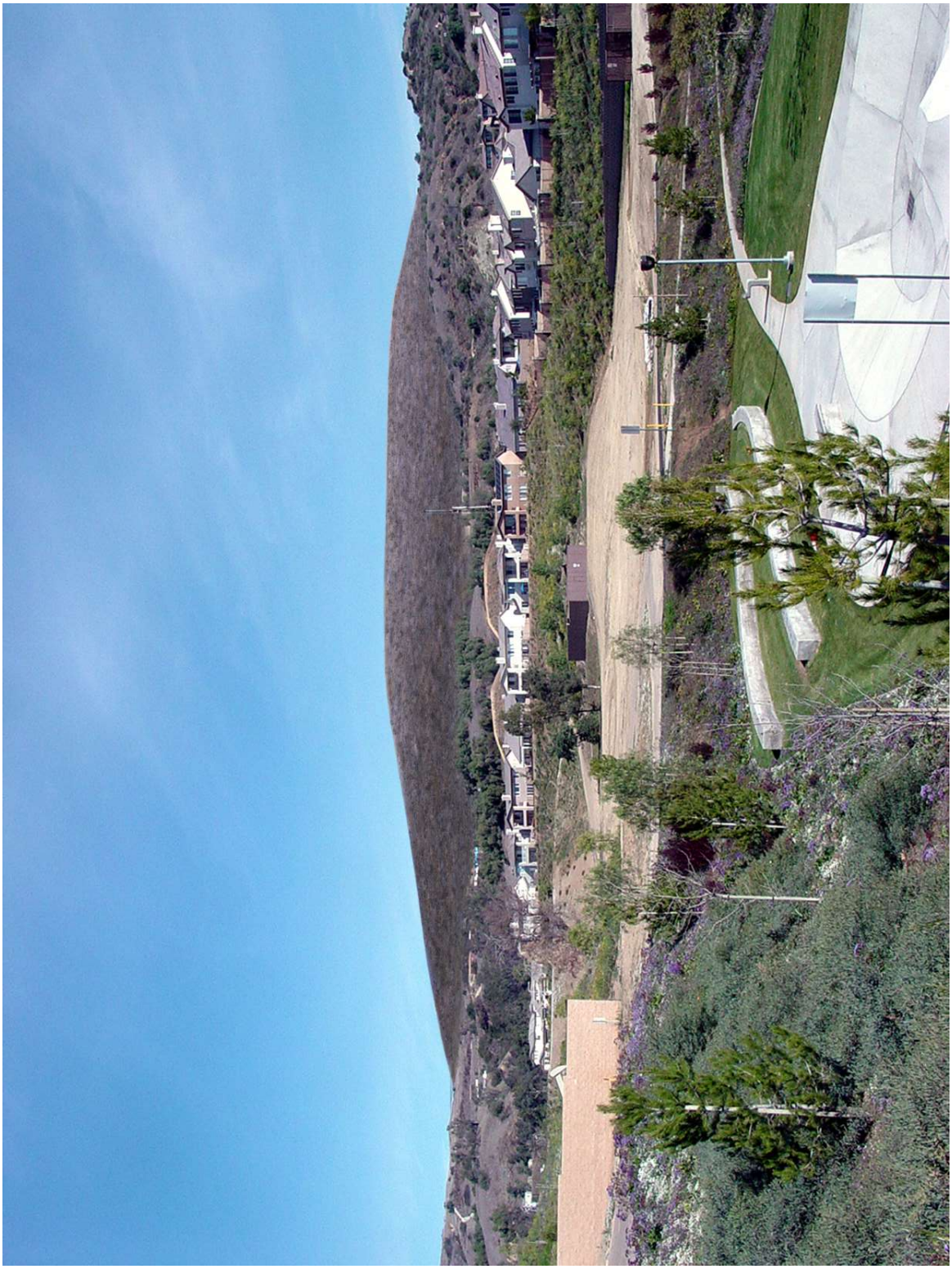
Figure 5.8-3
Existing Views



Visual Simulation 1A - Permitted (1300 foot) Landfill from north of Carbon Canyon Road looking north.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

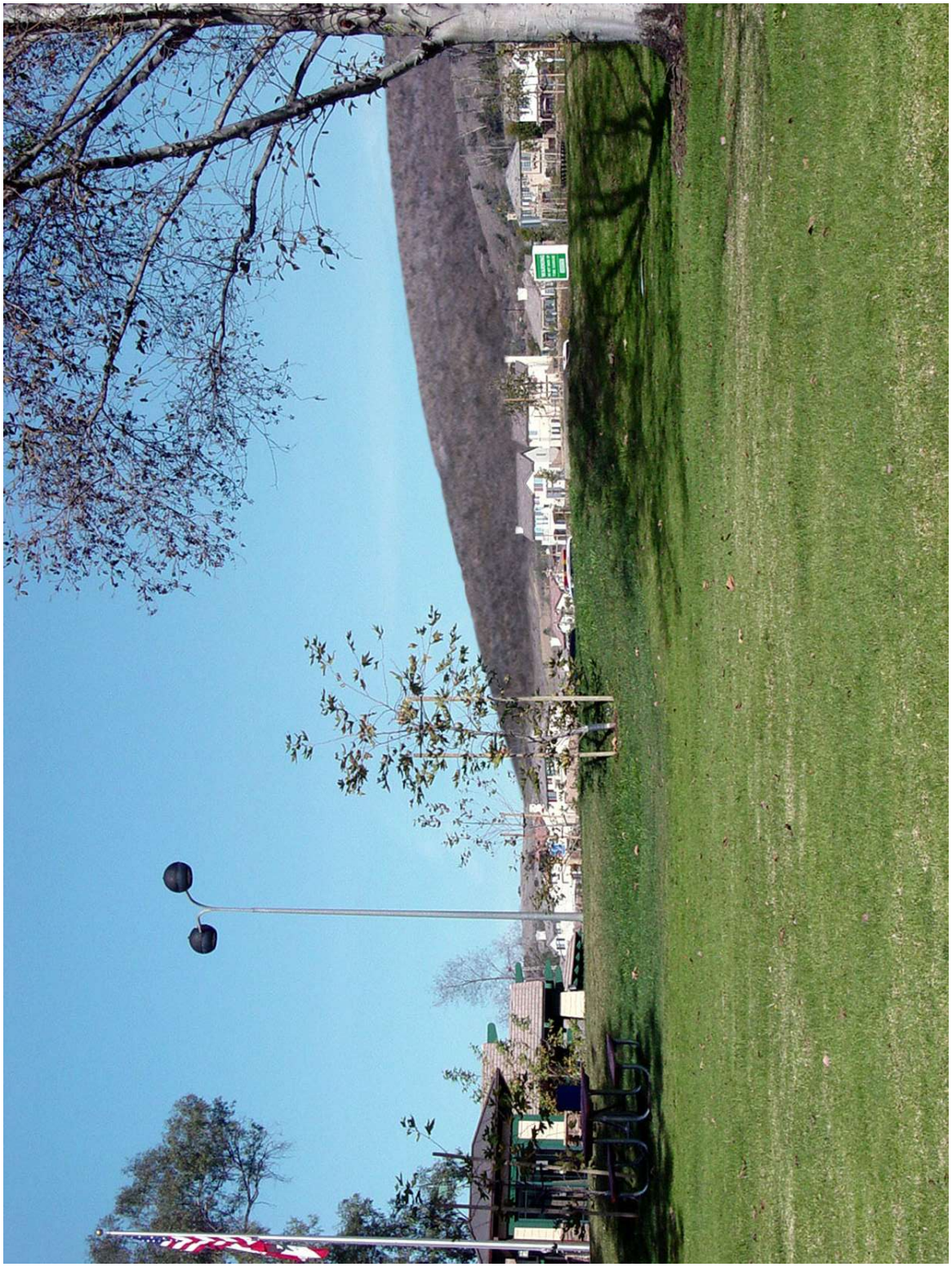
Figure 5.8-4
Visual Simulations



Visual Simulation 1B - Proposed (1415 foot) Landfill from north of Carbon Canyon Road looking north.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

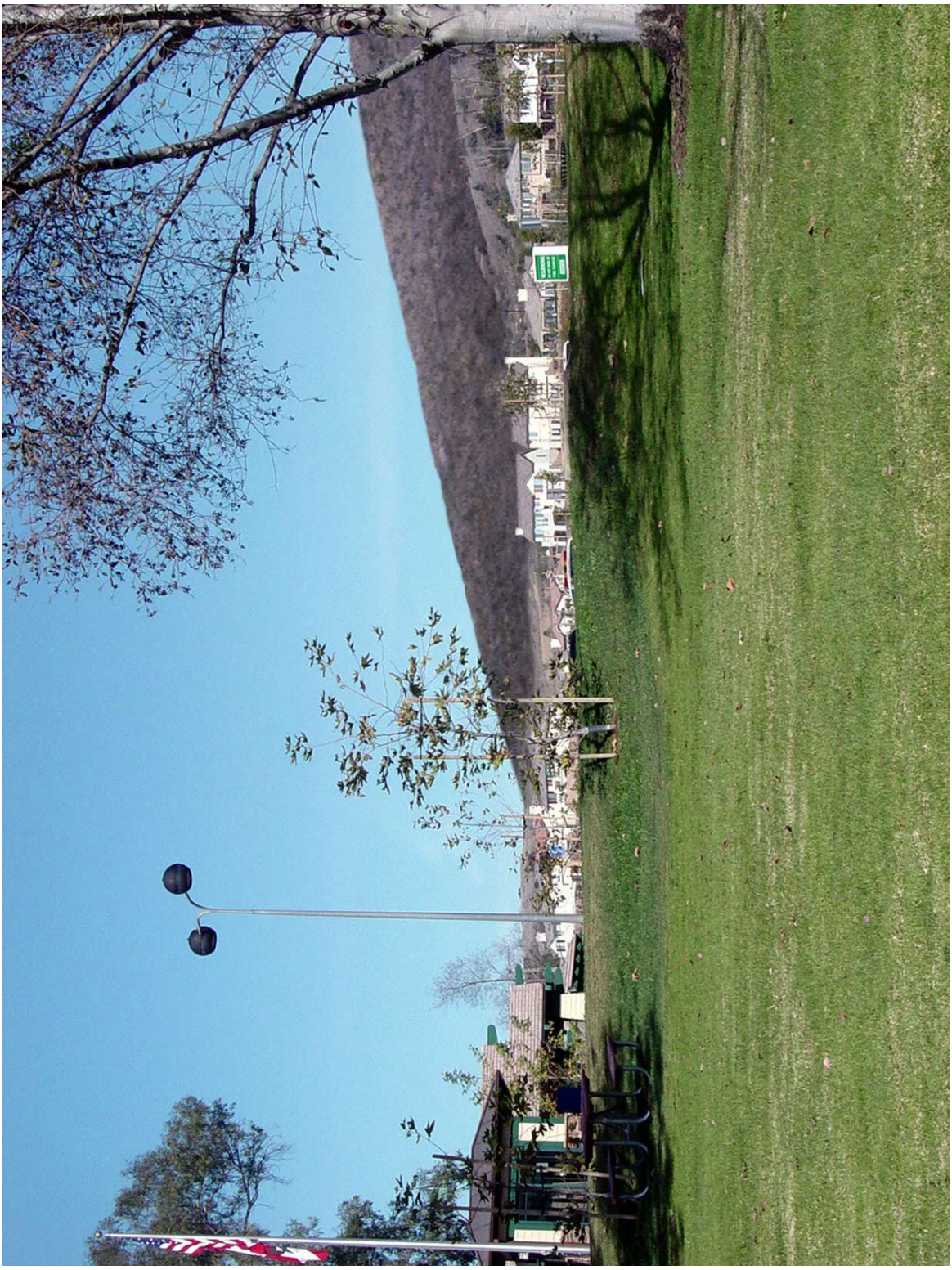
 Figure 5.8-4
Visual Simulations



Visual Simulation 2A - Permitted (1300 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

 Figure 5.8-4
Visual Simulations



Visual Simulation 2B - Proposed (1415 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

Figure 5.8-4
Visual Simulations

City of Anaheim
PLANNING DEPARTMENT

R4

August 4, 2004

Ray Hull, Project Manager
County of Orange
Integrated Waste Management Department
320 North Flower Street, Suite 400
Santa Ana, CA 92703

VIA E-MAIL

RE: DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE RELOOC STRATEGIC PLAN-OLINDA ALPHA LANDFILL IMPLEMENTATION

Dear Mr. Hull:

Thank you for the opportunity to review and comment on the above-referenced document. The Public Works Department has reviewed and offers the following comments: R4-1

We request that the Mitigation Measures presented in the DEIR be incorporated in both the Final EIR and its associated Mitigation Monitoring Plan/Program. R4-2

In addition to Mitigation Measures 5.3.5 Hydrogeology and Water Quality and 5.4.5 Surface Water Hydrology, impacts shall be mitigated by development and implementation of a Water Quality Management Plan, which shall include adequate treatment controls for surface water quality concerns and shall be designed, constructed and maintained as required in Chapter 7 of the Orange County Drainage Area Management Plan. R4-3

Should you have any questions regarding this comment, please contact Keith Linker, Principal Civil Engineer, at (714) 765-6821. R4-4

Sincerely,

Justin R. Powers
Associate Planner

Attachments

cc: Louie Vecchione, Streets and Sanitation Manager
Keith Linker, Principal Civil Engineer
Tina Truebe, Streets and Sanitation Contract Compliance Specialist

200 South Anaheim Boulevard
P.O. Box 3222
Anaheim, California 92803
TEL (714) 765-5139
www.anaheim.net

R4 RESPONSES TO COMMENTS FROM THE CITY OF ANAHEIM DATED AUGUST 4, 2004

R4-1 Comment noted. No response necessary.

R4-2 Comment noted. No response necessary.

R4-3 The County of Orange IWMD will coordinate with the County of Orange Watershed and Coastal Resources Division regarding compliance with requirements of Chapter 7 of the Orange County Drainage Area Management Plan.

R4-4 Comment noted. No response necessary.

DEVELOPMENT SERVICES DEPARTMENT

303 West Commonwealth Avenue, Fullerton, California 92832-1775

Telephone • (714) 738-6540
Fax • (714) 738-3110
Web site • www.ci.fullerton.ca.us

July 29, 2004

R5

Linda Hagthrop
County of Orange
Integrated Waste Management Department
Office of Public Affairs
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Subject: Review of Environmental Documents for the Regional Landfill Options for Orange County Strategic Plan – Olinda Alpha Landfill Implementation – Draft EIR 588

Dear Ms. Hagthrop:

Thank you for giving us the opportunity to review the DEIR. As previously communicated in our response to the Notice of Preparation, we encourage the continued incorporation of waste reduction strategies into landfill operating procedures as referenced in DEIR Section 5.1.1.5. R5-1

After reviewing the DEIR and Appendices, the City of Fullerton requests additional information to allow accurate evaluation of the proposed project in comparison with the alternatives. Specifically, this request is outlined below: R5-2

The regulations of the CEQA Guidelines require that "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly maintain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Further the Guidelines require that "the EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." R5-3

ANALYSIS OF THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE

DEIR Section 6.7 indicates that "the proposed project is the environmentally superior alternative" and presents Table 6-1 comparing the environmental impacts of all project alternatives. R5-4

The City of Fullerton has the following specific comments regarding this comparison as it relates to the environmental parameters of transportation and circulation, air quality, and noise. R5-5

Transportation and Circulation –

DEIR Table 6-1 identifies the three alternatives as having impacts that can be mitigated to a level of significance "2" and impacts that cannot be mitigated to a level of insignificance "3". The corresponding discussion of the impacts in Section 6.0 does not provide adequate information to support these conclusions. CEQA Guidelines require that "if an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed." R5-6

Air Quality –

DEIR Section 1.1.3.1 states that "it is anticipated that the truck trip reduction (approximately 100 trips per day) that occurs with the cessation of MSW importation at Olinda Alpha Landfill will offset the increase in truck trips required for the transport of cover material." Any difference in vehicle miles traveled for these trips should be incorporated into Table 5.C in Section 5.0 of the Air Quality Analysis in Appendix G. R5-7

DEIR Section 1.1.4.1 states that "the proposed project would not result in any increase to either the maximum daily permitted tonnage or the annual average daily tonnage limits for this landfill." The DEIR also notes that under the proposed project, MSW importation would end in 2015. Any additional in-county waste truck trips as a result of the additional available capacity should be incorporated into Table 5.C in Section 5.0 of the Air Quality Analysis in Appendix G. R5-8

DEIR Table 6-1 identifies the three alternatives as having impacts that can be mitigated to a level of significance "2" and impacts that cannot be mitigated to a level of insignificance "3". The corresponding discussion of the impacts in Section 6.0 does not provide adequate information to support these conclusions. CEQA Guidelines require that "if an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed." R5-9

DEIR Table 6-1 identifies the proposed project as having impacts on air quality that can be mitigated to a level of insignificance. DEIR Section 10 specifically states that "the proposed project will result in an unavoidable adverse air quality impact after mitigation as noted in the analysis in Section 5.0." Table 6-1 would be more accurately presented showing both impacts that can be mitigated to a level of insignificance "2" and impacts that cannot be mitigated to a level of insignificance "3". R5-10

Section 5.0 of the Air Quality Analysis in Appendix G assumes long-term impacts of the three alternatives with no supporting analysis. An analysis identical to that prepared for the proposed project in Table 5.C should be prepared separating the existing operations from the incremental effects of the alternatives. R5-11

Noise –

DEIR Table 6-1 identifies the three alternatives as having impacts that can be mitigated to a level of significance "2" and impacts that cannot be mitigated to a level of insignificance "3". The corresponding discussion of the impacts in Section 6.0 does not provide adequate information to support these conclusions. CEQA Guidelines require that "if an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed." The Noise Impact Analysis in Appendix H indicates a "regional relocation" of the "noise and vibration associated with vehicles R5-12

carrying municipal solid waste." It identifies no impacts that cannot be mitigated to a level of insignificance. R5-12

ANALYSIS OF THE ALTERNATIVES TO MEET THE PROJECT OBJECTIVES

DEIR Section 1.1.5 identifies as one of the project objectives to "maintain adequate revenues and local control of waste disposal to provide consistent and reliable public rates and fees." DEIR Section 6.3.3 states that the No Project Alternative does not meet this objective due to the necessary MSW exportation out of the County landfill system. DEIR Sections 6.4.3 and 6.5.3 summarizing alternatives 2 and 3 appropriately do not indicate the failure of the alternatives to meet this objective as no MSW exportation out of the County landfill system is required under either of these alternatives. DEIR Table 6.2 would then seem to incorrectly indicate that alternatives 2 and 3 do not meet the project objective of maintaining adequate revenue and local control. R5-13

If you should have questions regarding this response, please call me at (714) 738-6884. R5-14

Sincerely,

Heather Sowers
Assistant Planner

Cc: Joel W. Rosen, AICP, Chief Planner

R5 RESPONSES TO COMMENTS FROM THE CITY OF FULLERTON DATED JULY 29, 2004

R5-1 Comment noted. No response necessary.

R5-2 Comment noted. No response necessary.

R5-3 Comment noted. No response necessary.

R5-4 Comment noted. No response necessary.

R5-5 Comment noted. Refer to responses to comments R5-6 to R5-13, below.

R5-6 As described in Section 6.0 of the DEIR, after 2013 all three alternatives would need to divert existing truck traffic serving the Olinda Alpha Landfill to other in-County and/or out-of-County landfills. After 2013, the truck traffic would have to travel a longer distance or more frequently to other alternative landfill locations to dispose of municipal solid waste (MSW) diverted from Olinda Alpha Landfill. The road system serving the alternative landfill locations would experience an increase in traffic which would then result in an increase to air quality and noise impacts. This is reflected in Table 6-1. However, because the exact truck travel routes to alternative landfill locations are undefined at this time, these impacts cannot be quantified and as such, they are identified as 2/3. In addition, the environmental parameters and associated impacts discussed under the proposed project were also discussed for each of the alternatives in Section 6.0.

R5-7 There are approximately 98 daily vehicle trips (one way) associated with soil importation with an average trip length of nine miles. The soil importation trips were assumed to occur in-county with an average trip length of nine miles. This equates to 882 daily vehicle miles traveled (VMT). It should be noted that these 98 daily vehicle trips will occur once importation of MSW ceases in 2015. There are approximately 100 out-of-county (importation of MSW) trips on a daily basis to the landfill with an average trip length of 30 miles. The out-of-county trip lengths were based on the IWMD's Management of High Tonnage Days analysis. This equates to 3,000 daily VMT. Consequently the 3,000 VMT associated with out-of-county importation of MSW is greater than the 882 VMT associated with soil hauling. Because VMT associated with the out-of-county haul trips were higher than the soil importation trips, air pollutant emissions associated travel emissions from the out-of-county haul trips would likewise be higher as compared to the emissions associated with soil hauling.

The VMT associated with both soil importation and out-of-county importation trips were evaluated qualitatively. Use of a net difference in emissions and VMT due to the cessation of the out-of-county trips and start of soil importation, as requested by the commenter, would not have produced a worst-case analysis in terms of maximum air pollutant generation from project activities and, as such, was not used. To obtain a worst-case analysis, emissions associated with out-of-county trips, which are higher than

emissions associated with soil importation, were incorporated into Table 5.C in Section 5.0 of the air quality technical analysis.

R5-8 The analysis of air quality impacts associated with emissions from waste haul trips were evaluated based on a worst-case approach. In light of this, the analysis included out-of-county importation trips and not the in-county trips that would replace them after importation ceases in 2015. Out-of-county importation trips are longer (average 30 miles) as compared to in-county trips and because of this would generate more air pollutant emissions than shorter in-county vehicle trips. As such, the emissions inventory included in DEIR Section 1.1.4.1 represents the worst-case approach as recommended by the South Coast Air Quality Management District (SCAQMD).

R5-9 Comment noted. Refer to response to comment R5-6, above.

R5-10 As described in Section 5.6 (Air Quality), construction and operation of the proposed project will result in unavoidable significant adverse impacts related to air quality after mitigation. Table 6-1 on page 6-22 of the DEIR is corrected by reference to read: "3" instead of "2."

R5-11 As described in Section 5.0 of Appendix G, all three alternatives would result in the need to divert waste/refuse trucks trips to other in-County or out-of-County landfills, therefore increasing the total daily vehicle miles traveled by these trucks. It is known that vehicle emissions are partly proportional to the vehicle miles traveled (VMT), so higher VMT would result in higher vehicle emissions. Therefore, long term air quality impacts for the alternatives would be worse than for the proposed project and would be negative for the region. The exact truck routes to divert waste/refuse to alternative landfill locations are undefined at this time, but the relationship between VMT and vehicle emissions is known. Under the CEQA, alternatives do not have to be analyzed at the same level of detail as the proposed project, but CEQA does require meaningful detail in the discussion of alternatives. This detail is provided in Section 6.0 of the DEIR.

R5-12 As described in Section 6.0, all three alternatives have the potential for increased noise impacts on sensitive receptors located along the travel routes of trucks hauling MSW to other in-County and out-of-County landfills after Olinda Alpha Landfill closes in 2013. The destinations and routes of travel for diverted MSW subsequent to the closure of Olinda Alpha Landfill is speculative. The potential for these impacts to occur would be dependent on the routes traveled (unknown at this time) by these trucks in Orange County and/or on the routes to out-of-County landfills and therefore, impacts from these alternatives are identified as 2/3. In addition, noise associated with on-site construction and landfill operations would cease to occur at Olinda Alpha Landfill after 2013 but would increase at alternative landfills accepting the diverted MSW.

The discussion in Appendix H regarding noise impact analysis states "Regionally, noise and vibration associated with vehicles carrying municipal solid waste would be relocated along routes to other landfills accepting municipal solid waste that was previously destined for Olinda Alpha Landfill." Therefore, the potential for these adverse impacts to

occur would be dependent on the routes traveled (unknown at this time) by these trucks in County and/or on the routes to out-of-County landfills. Therefore, these alternatives are identified as 2/3.

R5-13 The following discussion is added by reference to page 6-23 of the DEIR to clarify which objectives may be met by alternatives 2 and 3. Table 6-2 will be revised to identify alternatives 2 and 3 as being able to meet the fourth objective "Maintaining adequate revenue and local control of waste disposal to provide consistent and reliable public rates and fees."

R5-14 Comment noted. No response necessary.

BUSINESSES, GROUPS AND ORGANIZATIONS

HILLS FOR EVERYONE

B1

Southern California communities
organized to protect the Puente - Chino Hills

Los Angeles County
Orange County
Riverside County
San Bernardino County

July 31, 2004

Ray Hull
County of Orange,
IWMD
320 North Flower Street, Suite 400
Santa Ana, CA 92703

Re: Draft Environmental Impact Report (DEIR) for the RELOOC Strategic Plan Implementation-Olinda Alpha Landfill Implementation, SCH #2004011055

Dear Mr. Hull:

Hills For Everyone provides the following comments on the aforementioned project. We are a non-profit organization whose mission is to protect, preserve, and restore the environmental resources and natural environs of the Puente-Chino Hills and surrounding areas for the enjoyment of current and succeeding generations and to initiate, sponsor, promote, organize, and carry out plans, programs, and activities that will tend to favor these ends.

B1-1

As you are aware, regional efforts to save the Puente-Chino Hills have been underway for 25 years. In the western Puente Hills, 4,000 acres have been purchased as open space, while 13,000 acres have been established as permanent open space within Chino Hills State Park. Well over $200 million dollars in private and public funds have been invested in these efforts. This hillside system then connects to the Coal Canyon Ecological Reserve, the Cleveland National Forest and the Irvine Company dedication below the Riverside (91) freeway. (See enclosed map)

As described in the DEIR, the County proposes to extend the life of the landfill from 2013 to 2021 and expand the landfill vertically 115 feet and horizontally to encompass 33 acres within the County's current landfill property.

B1-2

The continued operation of the landfill beyond 2013 will result in significant impacts to the ecosystem and the community. In summary, we:

B1-3

- Do not support expansion and extension of the Olinda Alpha Landfill;
- Recognize that due to economic and political realities, landfills do not close until they reach capacity;

- Support establishment of a mitigation fund for acquisition of open space and other appropriate measures related to landfill impacts on the surrounding natural protected lands; B1-4
- Oppose further acquisition of land at Olinda Landfill by Orange County Integrated Waste Management beyond the current ownership for future use as landfill borrow or fill sites; B1-5
- Oppose a new access road in Tonner Canyon as duplicative, economically wasteful and irreparably damaging to the long term bipartisan regional effort to protect the remaining undeveloped hills; B1-6
- Believe adequate mitigation must be negotiated to cope with the negative impacts of hosting a landfill; B1-7
- Support increased mitigation measures such as hardscape (e.g. sound walls) and softscape (e.g. water features like a "babbling brook" often used in apartment complexes near freeways to eclipse traffic noise) along Valencia Avenue; B1-8
- Support increased enforcement for trash truck impacts along Valencia Avenue; B1-9
- Support elimination of self haulers to reduce truck traffic; B1-10
- Support later hours for landfill operation on Saturday; B1-11
- Support deadline for use of reduced emission vehicles hauling trash. B1-12

A tipping fee should be established based on percentage rather than a flat rate prior to finalizing negotiations for the extension. The funds should be used to acquire and/or restore land in the Puente-Chino Hills to help offset significant impacts to this ecosystem and the delayed opening of the Olinda (Landfill) Wilderness Park scheduled to be completed at the close of operations. B1-13

It is unclear where soil and fill material will come from. Further clarification is necessary to ensure that appropriate soil and fill material is used so as not to compromise the integrity of the neighboring ecosystem and present unknown impacts to the community. B1-14

A plant palette should be developed for use when replacing and/or installing plants in cooperation with the California Department of Parks and Recreation, Inland Empire District (State Parks), (951) 657-0676. B1-15

Mitigation Measures

H-2, dealing with drainage, should be clearly defined in order to avoid off-site impacts, especially to current and/or future habitat areas. B1-16

As identified in H-4, "adhering" to requirements imposed by regulatory agencies hardly counts as an effort toward resolving drainage impacts. B1-17

H-6 should be expanded to include areas off-site that may be impacted by erosion. B1-18

T-1 and T-2 should include provisions to add a Class 1 bike lane from Imperial Highway to Carbon Canyon Road on Valencia Avenue. This stretch of road is currently a hazard for cyclists due to trash trucks. A Class 1 bike lane would help in buffering cyclists and pedestrians from trash trucks. Additionally, adequate signage should be installed directing potential bike route users to this new amenity. B1-19

AQ-1a (SCAQMD) should provide for more certain time frames for revegetation of disturbed areas. The plant palette should consist of local natives coordinated with State Parks, as previously mentioned. B1-20

AS-1, B-1 should include provisions to coordinate with State Parks and other trustee agencies to develop a plant palette consisting of local natives.

C-1 should include a provision to coordinate with State Parks on the preservation of cultural artifacts at the planned Chino Hills State Park Visitor Center in Carbon Canyon. B1-21

B-1, B-2 should include provisions that indicate if no area on-site is appropriate, then an off-site area within Chino Hills State Park should be used for revegetation. B1-22

Again, thank you for the opportunity to comment. Please include us on a mailing list for distribution of all future materials regarding this project. B1-23

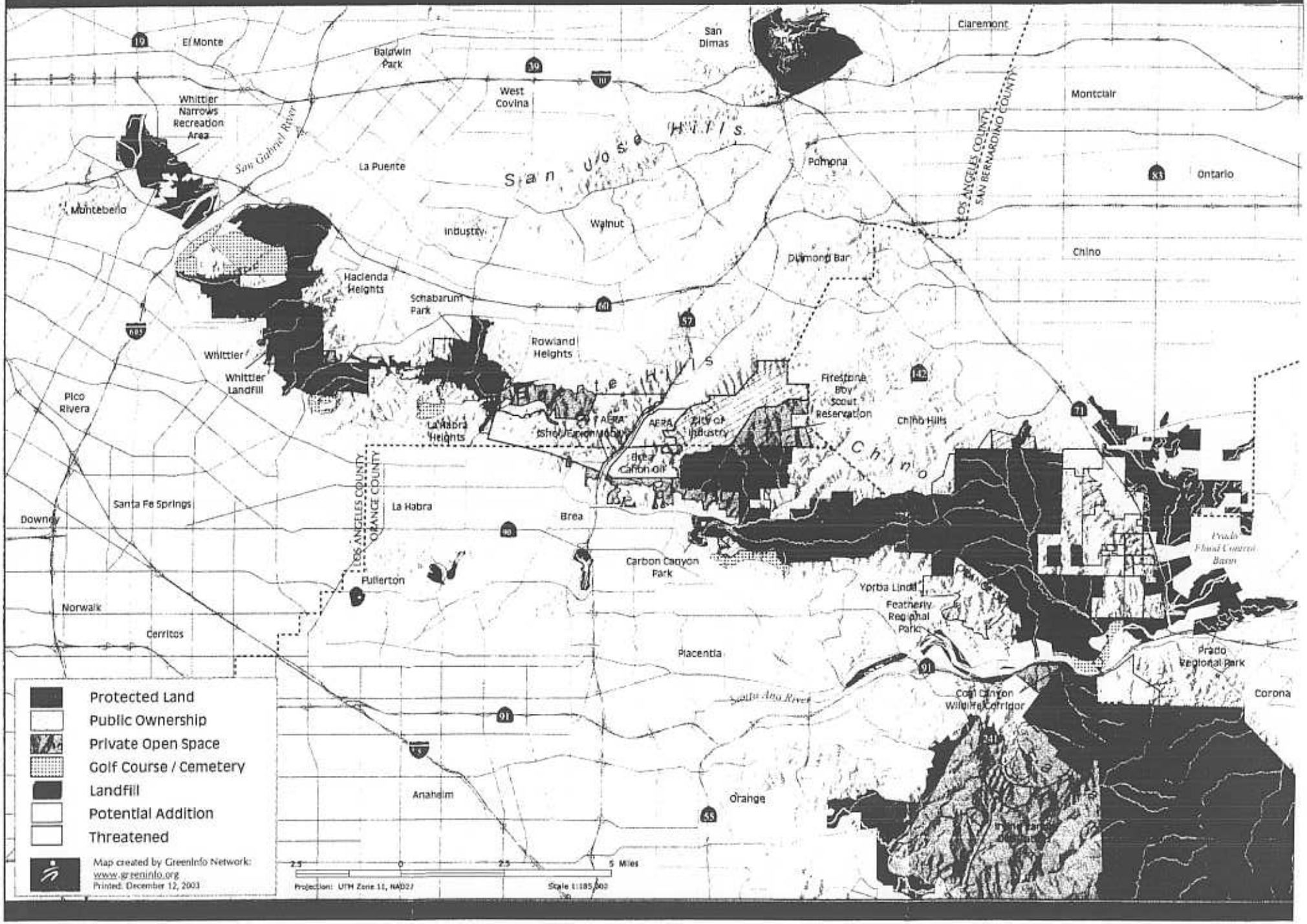
Sincerely,

Claire Schlotterbeck

Claire Schlotterbeck
Executive Director

Enclosure

Open Space in the Puente-Chino Hills Wildlife Corridor



B1 RESPONSES TO COMMENTS FROM HILLS FOR EVERYONE DATED JULY 31, 2004

B1-1 Comments noted. No response necessary.

B1-2 Comments noted. No response necessary.

B1-3 Comments noted. No response necessary.

B1-4 Comments noted. Refer to response to comment S4-12, earlier in this Responses to Comments Report.

B1-5 Comments noted. Refer to response to comment S5-11, earlier in this Responses to Comments Report.

B1-6 Comment noted. Refer to response to comment S5-16, earlier in this Responses to Comments Report.

B1-7 Comments noted. Refer to response to comment S5-12, earlier in this Responses to Comments Report.

B1-8 Refer to mitigation measure N-5 in Section 5.7 (Noise) which addresses potential noise impacts along Valencia Avenue. Softscape features are not typically provided along roads but may, as noted in the comment, be provided with in developed areas to provide white or background noise. No softscape features are proposed as part of the mitigation for the proposed project.

B1-9 Comments noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report.

B1-10 Comments noted. Refer to response to comment S5-15, earlier in this Responses to Comments Report.

B1-11 The hours of operation for the Olinda Alpha Landfill were established in response to the City of Brea's request to ease transportation congestion during peak hours. Current hours of operation are not proposed for change.

B1-12 South Coast Air Quality Management District (SCAQMD) establishes emission rates for trash trucks and other vehicles. It is presently studying new rules. If such rules are adopted, they will apply to trucks going to Olinda Alpha Landfill. IWMD supports the SCAQMD's efforts to reduce emissions, and will comply with relevant rules, but it has no role in setting emission levels for trucks.

B1-13 Comment noted. Refer to responses to comments S4-4, S4-12 and S4-14, earlier in this Responses to Comments Report.

B1-14 Comments noted. Refer to response to comment S5-17, earlier in this Responses to Comments Report.

B1-15 Comments noted. Refer to response to comment S5-18, earlier in this Responses to Comments Report.

B1-16 Comments noted. Refer to response to comment S5-20, earlier in this Responses to Comments Report.

B1-17 A substantial part of the NPDES permit is related to the definition and implementation of the Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMPs) that are required to manage and control stormwater drainage on the landfill site. Measure H-4 indicates the IWMD's continued commitment, as part of the proposed expansion, to develop and implement the required SWPPP and BMPs, consistent with the existing NPDES permit and any permit modifications as part of the proposed project, to avoid and/or reduce adverse water quality impacts associated with the proposed project. This measure is included to document that the expanded landfill will comply with the NPDES permit conditions which address potential surface water quality impacts of the proposed project.

B1-18 Comments noted. Refer to response to comment S5-21, earlier in this Responses to Comments Report.

B1-19 Comments noted. Refer to response to comment S5-22, earlier in this Responses to Comments Report.

B1-20 Comments noted. AQ-1 has no relation to revegetation. Refer to response to comment S5-23, earlier in this Responses to Comments Report, regarding AS-1 and B-1.

B1-21 Comments noted. Refer to response to comment S5-24, earlier in this Responses to Comments Report.

B1-22 Comments noted. Refer to response to comment S5-25, earlier in this Responses to Comments Report.

B1-23 Comments noted. No response necessary.

GENERAL PUBLIC

Flores, Jerry

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Wednesday, June 30, 2004 8:23 AM
To: Freeman, Roger; Richmond, Bob; Arnau, John; Flores, Jerry; Christine Arbogast (E-mail)
Cc: McClanahan, Suzanne; Goss, Jan; Lowry, Dave
Subject: FW: Olinda Alpha Landfill Expansion

P1

Comments on RELOOC Draft EIR 588 received from Warren Collier at SaveBrea.org.

-----Original Message-----
From: Amirhosseini, Susan On Behalf Of OAL, RELOOC
Sent: Wednesday, June 30, 2004 8:02 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

Forwarding message received in the RELOOC in box.

-----Original Message-----
From: Warren Collier [mailto:collier@mac.com]
Sent: Tuesday, June 29, 2004 8:52 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks. P1-1

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size. P1-2

The DEIR also does not provide a slope stability report on the landfill expansion, and puts the heath and safety of the residents who live below the landfill and the workers at the landfill in danger. The DEIR clearly points out that "assumptions" were used to create this report based on a past project that only studied the height of the landfill to 1,300 feet. This project will add millions of tons of waste to landfill and apply additional pressures on the foundations and buttress holding back the fill to the height of 1,400 feet. A major earthquake could break the south buttress and trigger a landslide, and the south face of the landfill sits along the Whittier fault line. P1-3

The Final EIR must contain the actual project slope stability report based on the proposed project, and not previous assumptions to ensure the safety of homeowners and workers in the area. A draft report must be completed and circulated to the public before its inclusion into the final EIR. If safe slope stability cannot be obtained, then this project cannot proceed, and that is why it must be included in the final EIR. P1-4

As for the dump truck traffic going to the landfill through Brea's city streets, the DEIR completely disregarders the resident's demands to have it removed! Numerous residents through letters and comments at the public scoping meeting, suggested a western access road alternative. The DEIR looked at the Tonner Canyon Road option, giving us a four-page explanation why it couldn't be done based on other projects, and did not look at any other alternatives to eliminate landfill traffic. This shows that IWMD has NO desire to change the access road. If landfill traffic is not removed from the core of Brea, this project should NOT be done! These trucks are noisy, dangerous, and smelly, they destroy the aesthetics of our city, and add congestion to our roads. Many people are worried that someday a person will get killed by one of these garbage trucks. P1-5

The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous. P1-6

Thank you for your time. Go to SaveBrea.ORG for more info!

Sincerely,

Warren Collier
3680 Skylark Way
Brea, CA 92823

714-961-6896

P1 RESPONSES TO COMMENTS FROM WARREN COLLIER DATED JUNE 29, 2004

P1-1 The future Olinda Regional Park is not being taken back. To date, no specific acreage for the future regional park on the Olinda Alpha Landfill property has been designated. No specific uses for this park, other than its identification as a passive use park following closure of the landfill, have been identified at this time. The County of Orange Resources and Development Management Department/Harbors, Beaches and Parks (RDMD/HBP) provides administrative, planning and operational services for the County regional recreation facilities system, including regional parks. Funding for RDMD/HBP is provided primarily from a percentage of property tax revenues dedicated to the regional recreation system. RDMD/HBP Capital Project funds are allocated within its Five-Year Capital Plan and annual HBP Fund budget. RDMD/HBP capital funding is very limited at this time and for the foreseeable future due to reductions in prior levels of RDMD/HBP annual property tax funding by actions of the state Legislature: by $4.5 million in 1992, by $4.0 million in 1996 (for 20 years), both amounts also increasing each year by county property assessed valuation increases, and in adopting the State's FY 2004/05 budget, by an added $3.6 million for each of the next two fiscal years. These losses of previous annual funding levels have resulted in capital project funding being limited almost exclusively to the availability of grant funding from non-County sources.

The Five-Year Capital Plan is updated annually. County regional park programs and construction of other potential recreational improvements are identified and budgeted annually according to the Five-Year Capital Plan. Olinda Alpha Landfill is currently designated on the County Master Plan of Regional Recreational Facilities as a proposed regional park. The Five-Year Capital Plan is presented to the County Executive Office for approval as part of the County's annual budget and financial planning process. The Olinda Alpha Landfill does not appear in the current (or any past) HBP Five-Year Capital Plan for the dual reasons that it will not be available for conversion to a regional park within the next five years and that there is no capital funding available for the creation of a new regional park.

County regional parks are designed for passive, open space use; in contrast, urban community parks provide for active recreational uses. If the needs assessment for a regional park indicates that active recreational programs and facilities are needed over and above those traditionally provided by the County regional park system, the local municipality park and recreational planning authority (e.g. city) and its processes may be afforded the opportunity to use a portion of a County regional park for local recreation purposes if the city is interested in funding and implementing such facilities/programs. The primary goal of the County Regional Recreational Park programs is to accommodate Orange County's regional recreational needs.

As examples, the County has provided rent-free leased land to cities for active community uses within regional parklands (e.g. Mile Square Park in Fountain Valley and

Yorba Regional Park in Yorba Linda), with the local municipalities providing the capital project expense, programming and operations of these facilities.

The IWMD will begin preparation of a Final Closure and Post-Closure Maintenance Plan approximately five years prior to the cessation of waste acceptance at Olinda Alpha Landfill. These documents will be submitted to the CIWMB two years prior to the planned landfill closure as required per CCR, Title 27. The Closure Plan, indicating final end use, must be approved by regulatory agencies prior to initiation of landfill closure activities. During the five-year period prior to the last date of waste acceptance, the RDMD/HBP will consider including the Olinda Regional Park in its Five-Year Capital Plan, subject to available funding and other competing needs. If funded, the process will involve a needs analysis for regional and, as appropriate, local uses undertaken in cooperation with adjacent cities and interest groups. A definitive cost study will also be conducted as part of this process once the proposed uses are established.

The original March 10, 1992 Memorandum of Understanding (MOU) between the County of Orange and the City of Brea for expansion of the Olinda Alpha Landfill in accordance with NOCLATS EIR 523 required the establishment of "temporary park uses on non-operating areas of the Olinda/Olinda Alpha Landfill so long as the safety of the public and landfill operations can be maintained." (Section F). This section of the MOU also required that the County "prepare a General Development Plan for ultimate recreational uses" following closure of the landfill. A Community Advisory Committee (CAC) was established to meet with the County. The CAC provided the County and City with input on desired active park uses for the landfill at public workshops.

Ultimately, the County determined that joint activities of landfill and temporary public park use were not possible due to public safety considerations. However, there is no change in the policy commitment by the County and the City to the development of the park. The City and County entered into negotiations resulting in the 2nd and 3rd Amendments to the MOU. These Amendments provided for City development of an off-site sports park prior to landfill closure in lieu of active park use on the landfill after closure. Funds have been provided to the City by the County for development of the City's sports park as follows:

$4.0 Million – Property Acquisition
$1.5 Million – Planning and Design
$3.9 Million - Construction

$9.4 Million – Total funds provided to City of Brea for Sports Park

MOU Amendment Number 3, Paragraph F.1.b also states that the County will redesign the Olinda Regional Park as a Natural Regional Park.

As a result of these negotiations between the County and the City regarding the sports park, in August 2002, the City of Brea prepared an Environmental Impact Report for the development of a new sports park located immediately northwest of the intersection of

Valencia Avenue and Birch Street. The City of Brea subsequently approved this project in November 2002. Construction of the new sports park is anticipated to occur in the near future.

P1-2 Opinion noted. Refer to response to comment P1-1, above.

P1-3 Appendix L in the DEIR contains the "Slope Stability Evaluation of Proposed Lateral/Vertical Expansion Olinda Alpha Landfill" (GeoLogic Associates, May 11, 2004) which is discussed in the Section 5.2 of the DEIR. As identified in Section 5.2.6, potential impacts related to geology and soils will be less than significant with the implementation of the identified mitigation measures.

Data from the past project were used for the current analyses (see DEIR pg. 5.2.7, where it states: "Engineering analyses of proposed cut and fill slopes and final landfill slopes were performed using engineering data obtained during previous landfill development investigations". The only assumptions stated in the Slope Stability Evaluation (DEIR Appendix L) were the worst-case assumptions concerning geometrics of the critical claystone beds on the site. Future, design-level investigations and analyses could, in fact, determine that these assumptions were overly conservative. Section 5.2.5 of the DEIR makes reference to such future investigations and analyses to verify these assumptions.

Recent analyses conducted for the lateral/vertical expansion determined that potential seismic displacements for the highest, southern facing slope of the vertical expansion during the Maximum Credible Earthquake were less than one inch, well within acceptable limits (see Attachment 2 of DEIR Appendix L).

P1-4 As stated above, DEIR Appendix L contains a slope stability report. This report was based on the proposed project, and the only assumptions made were worst-case assumptions.

P1-5 As discussed in detail in Section 2.3.3 in the DEIR, the use of an extension of Tonner Canyon Road as an access route to Olinda Alpha Landfill is not proposed as part of the landfill expansion plan. Access to the landfill under the proposed expansion plan will continue to be via existing Valencia Avenue. The Tonner Canyon extension as shown in the Orange County Transportation Authority Master Plan of Arterial Highways (MPAH) and the City of Brea Master Plan of Roadways (MPR) is proposed for deletion from the MPAH and the MPR as requested by the City. In 1994, the County of Orange completed the "Project Report and Preliminary Summary of Environmental Impacts, Landfill Access Road Alternatives, Olinda/Olinda Alpha Landfill Vertical Expansion Project" which evaluated four landfill access alternatives and concluded that Valencia Avenue is the environmentally superior and preferred alternative for access to the landfill. Improvements to Valencia Avenue constructed since 1997 provide the necessary capacity on Valencia Avenue to adequately serve the landfill. The County Board of Supervisors approval of the Tonner Canyon Planned Community in 2002 did not include an extension

of Tonner Canyon Road. For these reasons, the proposed expansion project at Olinda Alpha Landfill does not include any project components or analysis related to extension of Tonner Canyon Road or the use of Tonner Canyon Road for access to the landfill through the life of this project.

P1-6 Comment noted. Refer to response to comment P1-5, above.

FW: Dump the Trucks at OAL!

Flores, Jerry

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Monday, July 19, 2004 1:28 PM
To: Freeman, Roger; Richmond, Bob; Arnau, John; Christine Arbogast (E-mail); Flores, Jerry
Cc: McClanahan, Suzanne; Hall, Robin; Lowry, Dave; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P2

Ray Hull
Manager, Strategic Projects
Integrated Waste Management Department
Phone (714) 834-7202
Fax (714) 834-4057
ray.hull@iwmd.ocgov.com

-----Original Message-----
From: Amirhosseini, Susan On Behalf Of OAL, RELOOC
Sent: Monday, July 19, 2004 8:00 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: jayanthi iyengar [mailto:Jiyengars@hotmail.com]
Sent: Sunday, July 18, 2004 7:36 AM
Subject: Dump the Trucks at OAL!

Tucks have started going to the dump site b4 the 6.00 am time.On saturdays it would be great if the timing be pushed back to 8 am for that would let the residents of brea have a peaceful weekend morning a privelege robbed from us on the weekdays.That would really show how much the city council cares for its residents. P2-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P2-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P2-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P2-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P2-5

Sincerely,

jayanthi iyengar
3627 sandpiper way
brea, CA 92823

714-993-7869

P2 RESPONSES TO COMMENTS FROM JAYANTHI IYENGAR DATED JULY 18, 2004

P2-1 Comment noted. The hours of operation for the Olinda Alpha Landfill were established in response to the City of Brea's request to ease transportation congestion during peak hours. Current hours of operation are not proposed for change.

P2-2 Opinion noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P2-3 As discussed in Section 5.5 (Transportation and Circulation) of the DEIR, the only intersections that would experience traffic impacts are Imperial Highway and Valencia Avenue and Imperial Highway and Kraemer Boulevard. Mitigation measures identified in Section 5.5.6 (Level of Significance After Mitigation) would mitigate the adverse traffic impacts of these intersections to below a level of significance.

P2-4 As discussed in Section 5.6 (Air Quality) of the DEIR, landfill construction operations would generate emissions exceeding the SCAQMD daily construction emissions thresholds. Implementation of the identified mitigation measures would reduce the construction related emissions as required by SCAQMD, but project related PM_{10} emissions would still exceed SCAQMD thresholds and would constitute a significant short term adverse impact on regional air quality. During landfill operations, the project would result in a continuation of emissions over a longer period of time which would exceed emissions thresholds for the operation of the proposed project. Mitigation measures would not result in reductions in emissions which would be below the SCAQMD operation phase thresholds. Consequently, the operational phase of the proposed project would result in significant adverse air quality impacts.

However, under the No Project Alternative, it should be understood that on-site equipment use at the other in-County and out-of-County landfills will be expected to be the same as those used for Olinda Alpha Landfill because quantities of municipal solid waste (MSW) that would still need to be disposed of after closure of Olinda Alpha Landfill will be the same. In addition, under the No Project Alternative, there would be a greater travel distance to transport MSW from the Olinda Alpha Landfill service area to other landfills which would result in a greater generation of air pollutant emissions. Therefore, the proposed project would have less air quality impacts than the No Project Alternative.

P2-5 Comments noted. Refer to response to comment P1-1, earlier in this Response to Comments Report.

Flores, Jerry

From: Amirhosseini, Susan [Susan.Amirhosseini@iwmd.ocgov.com] on behalf of OAL, RELOOC [RELOOC-OAL@iwmd.ocgov.com]
Sent: Monday, July 19, 2004 10:55 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Wrong message was sent!

P3

-----Original Message-----
From: Tammy Martinez [mailto:tammymartinez@earthlink.net]
Sent: Monday, July 19, 2004 10:53 AM
To: OAL, RELOOC
Subject: Wrong message was sent!

Hello -

Hopefully you'll get this correction. I do not agree with the message below, I think the dump should stay open with access as it currently is. I think it's ridiculous for those homeowners to want these restrictions and changes. A new road would be an environmental disaster, moving the dump to another site in Orange County just adds trucks to another neighborhood and increases traffic somewhere else, and I don't want to incur higher fees. P3-1

The dump was there, the planned extension was in place - these homeowners bought homes under these conditions - live with it. No one was lied to, no one deceived - don't change the playing field now. P3-2

Thanks,
Tammy Martinez
tammymartinez@earthlink.net

P3 RESPONSES TO COMMENTS FROM TAMMY MARTINEZ, DATED JULY 19, 2004

P3-1 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P3-2 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

Flores, Jerry

From: Amirhosseini, Susan [Susan.Amirhosseini@iwmd.ocgov.com] on behalf of OAL, RELOOC [RELOOC-OAL@iwmd.ocgov.com]

Sent: Monday, July 19, 2004 7:59 AM

To: Hull, Ray; Hagthrop, Linda

Subject: FW: Olinda Alpha Landfill

P4

-----Original Message-----
From: Terri Daxon [mailto:daxoncomm@earthlink.net]
Sent: Friday, July 16, 2004 1:22 PM
To: RELOOC-OAL@iwmd.ocgov.com
Subject: Olinda Alpha Landfill

I am in support of the needed extension and expansion of the Olinda Alpha Landfill. I am also very much against any plans to construct a road for trash haulers, or anyone else, through Tonner Canyon.

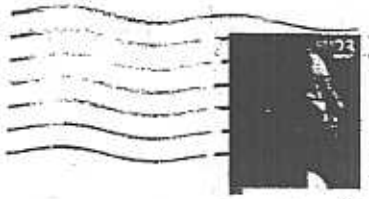
P4-1

Sincerely,
Teresa B. Daxon
679 Buttonwood Dr
Brea

P4 RESPONSES TO COMMENTS FROM TERESA B. DAXON DATED JULY 19, 2004

P4-1 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

M. SCHLOTTERBECK
171 COZUMEL CT.
LAGUNA BEACH, CA
92651



RECEIVED
JUL 28 2004
IWMD

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

P5

92703+5000

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension. P5-1
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon. P5-2
- I support establishment of a mitigation fund to buy open space in the Brea region. P5-3
- I support increased traffic mitigation along Valencia Avenue. P5-4

Name MELANIE SCHLOTTERBECK

Address 171 COZUMEL CT.

City LAGUNA BEACH E-Mail OCPARKBUILDER@YAHOO.COM

P5 RESPONSES TO COMMENTS FROM MELANIE SCHLOTTERBECK DATED JULY 28, 2004

P5-1 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P5-2 Comment noted. Refer to Section 2.3.3 (Tonner Canyon Road) in the DEIR which indicates that the proposed project does not include the provision of an alternative access to the landfill via a new access road in Tonner Canyon. Your comment will be forwarded to the decision makers.

P5-3 Comment noted. Refer to response to comment S4-12 for discussion of the mitigation fund suggestion. The DEIR includes mitigation measures for all significant adverse impacts of the project, as summarized in Table 1-1. Your comment will be forwarded to the decision makers.

P5-4 Comments noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

Flores, Jerry

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Monday, August 02, 2004 10:19 AM
To: Flores, Jerry; Arbogast, Christine; Huard-Spencer, Christine
Cc: McClanahan, Suzanne; Hall, Robin; Freeman, Roger; Richmond, Bob; Arnau, John; Lowry, Dave
Subject: FW: Response to Olinda Landfill Expansion DEIR

P6

August 1st, 2004

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

Mr. Hull,

I would make the following observations regarding the DEIR on the Olinda Landfill Expansion:

- I support the Olinda Landfill expansion and extension] P6-1
- DEIR should update the information regarding the alternate access road to the landfill in Tonner Canyon] P6-2
- I support the use of mitigation funds for an alternate access road to the landfill in Tonner Canyon if the DEIR indicates that there is possible mitigation of most issues dealing with human life] P6-3
- I support increased traffic mitigation along Valencia] P6-4
- I support mitigation to reduce diesel fumes] P6-5
- I support reducing self-hauling from going to the landfill] P6-6
- I support resurfacing Valencia Avenue with a rubberized surface designed to dampen vibration and be quieter overall] P6-7
- I support building sound walls along housing tracts bordering Valencia, and add sound- and safety-barriers at the Sports Park and new school] P6-8
- I support establishing pedestrian safety zones at Valencia and Lambert/Birch and other primary intersections. Also at the Sports Park and new school] P6-9
- I support reducing traffic speeds on Valencia with strict enforcement; with funding coming from IWMD to pay for the added policing] P6-10
- I support adjusting Saturday operating hours, opening and closing one hour later] P6-11
- I oppose establishment of a mitigation fund to buy open space in the Brea region] P6-12

Ralph Heimann
1374 Quail Lane
Brea, CA 92821

714-529-0588

P6 RESPONSES TO COMMENTS FROM RALPH HEIMANN DATED AUGUST 1, 2004

P6-1 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P6-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report and to Section 2.3.3 in the DEIR.

P6-3 Comment noted. Refer to Section 2.3.3 (Tonner Canyon Road) in the DEIR which clearly indicates that the proposed project does not include the provision of an alternative access to the landfill via a new access road in Tonner Canyon.

P6-4 Comment noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

P6-5 As identified in Section 5.6.6 (Level of Significance After Mitigation) of the DEIR, during the operational phase, the project would result in a continuation of emissions over a longer period of time which would exceed emissions thresholds for the operation of the proposed project. Mitigation measures would not result in reductions in emissions which would be below the SCAQMD operation phase thresholds. Your comment will be forwarded to the decision makers.

P6-6 Comment noted. Refer to response to comment S5-15, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

P6-7 As identified in Section 5.7.5.2 (Traffic Noise Impacts) of the DEIR, mitigation measure N-5 could potentially include construction of sound walls adjacent to the affected residences and/or installation of rubberized asphalt concrete on Valencia Avenue north of Carbon Canyon Road. Your comment will be forwarded to the decision makers.

P6-8 Comment noted. Refer to response P6-7 Your comment will be forwarded to the decision makers.

P6-9 As discussed in Section 5.5 (Transportation and Circulation) of the DEIR, the only intersections that would experience traffic impacts are Imperial Highway and Valencia Avenue and Imperial Highway and Kraemer Boulevard. Mitigation measures identified in Section 5.5.6 (Level of Significance After Mitigation) would mitigate the adverse

traffic impacts of these intersections to below a level of significance. Your comment will be forwarded to the decision makers.

P6-10 Comment noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

P6-11 Comment noted. Refer to response to comment S5-12, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

P6-12 Comment noted. Refer to response to comment S5-14, earlier in this Responses to Comments Report. Your comment will be forwarded to the decision makers.

Flores, Jerry

P7

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Monday, August 02, 2004 10:20 AM
To: Flores, Jerry; Arbogast, Christine; Huard-Spencer, Christine
Cc: McClanahan, Suzanne; Hall, Robin; Freeman, Roger; Richmond, Bob; Arnau, John; Lowry, Dave
Subject: FW: Dump the Trucks at OAL!

It used to be that I was primarily concerned about the traffic, but now other issues are have equalled the traffic concern. My children have been having respiratory problems this summer, I suspect that it might be from playing in our front yard which is only 200-300 feet from Valencia Avenue. When we are in our yard it constantly smells of exhaust. I have lived near a freeway before and this smells worse. My children have been experiencing difficulty taking deep breathes without wheezing. We have no history of asthma in our family. P7-1

Valencia Avenue is the dirtiest street I have ever seen. There is constantly trash on it that falls off the trucks. This trash is not picked up, but is thrown onto medians or into the nearby open space where it is still visible from the road. This is also harmful to the environment as I saw a huge chunk of polystyrene sit in open space for two weeks and it is still there! No one in the public sector seems to notice or care about this very dirty street. P7-2

On a weekly basis a hauler parks in my neighborhood. Whether it is to fix his truck or communicate with his company or to even eat lunch they park on Sandpiper or Partridge and a majority of the time let their truck idle while they conduct their business. This is dangerous to the small children who live on these streets in two ways. First, it is never safe to have a large truck driving through a residential neighborhood, especially one with small children playing in their yard. Second, the amount of exhaust wafting through the neighborhood and into our houses can choke children. My children gasp for breath after one of these incursions. P7-3

I would also like to add that there have been incidents of truck drivers harassing female residents as they get their exercise on the jogging path along Valencia. The wolf whistles, crude comments and even pulling over to pursue an encounter are frightening and SHOULD NOT be occuring in a nice residential neighborhood such as Olinda Ranch. I have been approached and feared for my safety. I now no longer walk on Valencia, jogging path or no. Also when I see a hauler pull into our neighborhood I immediately escort my children inside our house fearing for our safety. It is sad that I don't even feel safe on my own street in broad daylight in a neighborhood of upper-middle class homes. This along with the concerns listed in the form letter below make me hope that somebody is listening will take positive action for the residents of Brea regarding the landfill. P7-4

We would move, but we really cannot afford to and also this house was built for us. We picked out everything in it to make us, as a young family, happy. We knew about the landfill before we moved in and we knew it was supposed to close in 2013. It is much worse than anyone ever portrayed to us when we did our research pre-buy. This is not buyers remorse or ignorance on our part. This is simply that such traffic should never be allowed to go through any residential neighborhood. P7-5

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P7-6

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P7-7

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P7-8

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P7-9

Sincerely,

Tina Johnson
660 Partridge Drive
Brea, CA 92823

714-961-1707

P7 RESPONSES TO COMMENTS FROM TINA JOHNSON DATED AUGUST 2, 2004

P7-1 Comment noted. As discussed in Section 5.6 (Air Quality) of the DEIR, the primary health risk from heavy duty trucks is diesel particulate exhaust. A screening level health risk analysis was conducted for existing and proposed residences along Valencia Avenue north of Carbon Canyon Road leading to the landfill property. The results of the screening level analysis show that existing and proposed residences along Valencia Avenue would be exposed to an unmitigated inhalation cancer risk of one to two in a million assuming a five year exposure period, which is lower than the ten in a million threshold. As further detailed in the Air Quality Technical Report, the risk of exposures was assessed in five year increments from five to 20 year exposures. With up to 20 years of exposure, the risk would go up to eight in a million, still below the ten in a million threshold. Exposures of less than 20 years would result in a risk of less than 8 in a million. Because the proposed project would extend the landfill operation by eight years (2013 to approximately 2021), no significant health risk would occur for existing and proposed residences along Valencia Avenue leading to the Olinda Alpha Landfill from landfill-related truck traffic.

In addition, a screening level health risk assessment was conducted for the on-site landfill gas (LFG) flare system and equipment exhaust. Based on the current landfill operations, the inhalation carcinogenic health risk was found to be less than one in a million at a distance of 500 feet. The closest existing or planned residences are more than 1,500 feet from the LFG flare system, and more than 4,200 feet from the future expansion area. This range of health risk is lower than the ten-in-a-million threshold recommended for residential uses.

Similarly, the screening level health risk assessment conducted for the on-site flare system and heavy-duty, diesel-driven equipment exhaust showed that the level of health risk is less than one in a million for all receptors with a distance of 500 feet or more from these activities. Because the closest existing and proposed residences are more than 1,590 feet from the flare system and more than 4,200 feet from the future expansion area, potential health risks for these residents would be small and less than significant.

P7-2 Comment noted. Caltrans is responsible for litter control on Valencia Avenue from Lambert/Carbon Canyon to Imperial. IWMD is responsible for Valencia Avenue north of Lambert/Carbon Canyon and has maintenance workers inspect and clean that part of the road on a daily basis. In addition, the City of Brea contracts to have the road swept once a week.

P7-3 Comment noted. Refer to response to comment P7-1, above. Refuse trucks are not allowed to park on Olinda Ranch streets. The City of Brea Police Department patrols the Olinda Ranch area on a daily basis.

P7-4 Comment noted. No response necessary.

P7-5 Comment noted. No response necessary.

P7-6 Comment noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P7-7 Comment noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P7-8 Comment noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P7-9 Comment noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Flores, Jerry

P8

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Monday, August 02, 2004 10:24 AM
To: Flores, Jerry; Arbogast, Christine; Huard-Spencer, Christine
Cc: McClanahan, Suzanne; Hall, Robin; Freeman, Roger; Richmond, Bob; Arnau, John; Lowry, Dave
Subject: FW: OC and Brea Resident's Written Comments on the Draft Environmental Impact Report (DEIR) for the proposed expansion of the Olinda Alpha Landfill

Please include my opposition to a road in Tonner Canyon as part of the public record of the Draft Environmental Impact Report on the landfill expansion in Brea. P8-1

I am a resident of Brea. We Breans have long accepted trash truck traffic on Valencia leading to the landfill, and we can live with the consequences. Mitigation efforts have been responsible and reasonable, and for that we thank the county. P8-2

We do not want a road in Tonner Canyon, regardless of any new mitigation that may be proposed. P8-3

Tonner Canyon provides a unique opportunity for open space preservation, and to build a road would destroy that opportunity forever. Tonner Canyon is the last vital link joining huge and unique tracts of open space across several counties, leveraging the ownership and influence of state, county, and city entities that have spent decades with the clear intent of preserving open space for the good of everyone. P8-4

Additionally, a road in Tonner Canyon wastes millions of dollars of taxpayer money that was recently spent improving the current access route. It would jeopardize millions of potential private, federal, and state funding that is being set aside for the Wildlife Corridor that has been proposed through Tonner Canyon. P8-5

The residents of Olinda Ranch DO NOT represent the views of most of the people of Brea, nor of North Orange County. They are recent residents of the area, who purchased their homes with full knowledge, disclosure, and daily awareness that they were buying in a neighborhood below a landfill, alongside a busy access road providing access to that landfill. To allow their voices to represent Brea is to bow to a special interest group, rather than to serve the district as a whole. P8-6

Please join me and many other residents, the vast majority of whom are blissfully unaware of the plan, in opposing a road in Tonner Canyon. P8-7

Thank you,
David Villancio-Wolter
Brea Resident
(714) 671-0252

P8 RESPONSES TO COMMENTS FROM DAVID VILLANCIO-WOLTER DATED AUGUST 2, 2004

P8-1 Comment noted. Refer to response to comment P1-5 earlier in this Responses to Comment Report. Your comment will be forwarded to the decision makers.

P8-2 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P8-3 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P8-4 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P8-5 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P8-6 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

P8-7 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

Flores, Jerry

From: Hull, Ray [Ray.Hull@iwmd.ocgov.com]
Sent: Tuesday, August 03, 2004 8:34 AM
To: Flores, Jerry; Christine Arbogast (E-mail)
Cc: McClanahan, Suzanne; Hall, Robin; Richmond, Bob; Arnau, John; Freeman, Roger; Lowry, Dave; Goss, Jan
Subject: FW: Olinda Alpha Extension/Mitigation

P9

FYI

Mr. Fullington sent a cc: of this e-mail to Supervisor Campbell.

-----Original Message-----
From: Hagthrop, Linda
Sent: Monday, August 02, 2004 5:11 PM
To: Hull, Ray
Cc: Amirhosseini, Susan
Subject: FW: Olinda Alpha Extension/Mitigation

-----Original Message-----
From: Mrladycat@aol.com [mailto:Mrladycat@aol.com]
Sent: Monday, August 02, 2004 4:46 PM
To: RELOOC-OAL@iwmd.ocgov.com
Cc: billcampbell@ocgov.com
Subject: Olinda Alpha Extension/Mitigation

Integrated Waste Management District
RELOOC-OAL
RE: DEIR, OLINDA ALPHA
Gentlemen,

I have previously adddressed your body in person. However, I feel it necessary to re-confirm my thoughts regarding this project and accompanying DEIR. First, let me say, I am taken by the shrewdness of IWMD in its methodology of extending the Olinda Alpha Landfill over the years. I mean, lets see, it was supposed to close three or four times by now. Yet, you keep coming back to the 'Brea Well,' only its not for water, its time and acreage; inch by inch by inch. Very clever, I mean lets see, by getting the people of Brea to go along each ten to fifteen years the life of the landfill has been extended exponentially versus the original contractual agreement with the City of Brea. Second, let me say, how many years of serving the County of Orange must the City endure? Is (52) years not enough? Thirdly, Has the County of Orange done any calculations regarding how much money the City of Brea has saved the County by agreeing to these numerous extensions? Yes, we know how much it was going to cost the county to develope one or two other locations evaluated in your RELOOC project. Lets say, upwards of one hundred million dollars. Fourthly, the City of Brea has matured since the 1992 MOU was agreed upon with the county. Eighteen Hundred trash truck trips per day on Imperial and Valencia are no longer desired by many of the Cities residents. Yet, your DEIR devotes a grand total of some four pages to mitigating the trash truck route. Why, does your EIR drafted in 1997 devote chapters to 'Alternate Routes' accessing the Landfill and in 2004 we get a brief reference. TOTALLY UNACCEPTABLE!!! P9-1

We are not interested in placating the 'HILLS FOR EVERYONE' group and we do not expect your DEIR to do so either. We simply request a 'thorough' evaluation to be done to incorporate a "PRIVATE ACCESS ROAD" off the Tonner Canyon Offramp to the Landfill. P9-2

This 'PRIVATE ACCESS ROAD' is NOT an Arterial (4) lane Highway with a bridge over Valencia, but rather a simple (2) lane road of sufficient strength to carry trash trucks 'ONLY' until 2021 should the Landfill be extended until then. Please, we do not want to hear all the negatives as to why the area is not conducive to such a road as detailed to the ninth degree in the 97 EIR. Because if this is true, then certainly the soil is not capable of supporting over a (100) foot increase in height supggested by this new EIR. Which brings me to my final point. Where in the DEIR is their a soil analysis of the slopes to be generated to increase the height by over (100) feet. This will be a 'MUST" before this project can go forward. If the soil is so unstable as to support a PRIVATE ACCESS ROAD", there is no way it will support a (100) foot increase in height suggested for the rennovated new extended facility. I would appreciate your answers to my questions. P9-3

Cordially,

Keith E. Fullington
481 Peppertree Dr.
Brea, Ca. 92821
(714) 529-8020

P9 RESPONSES TO COMMENTS FROM KEITH E. FULLINGTON DATED AUGUST 3, 2004

P9-1 Opinions noted. No response necessary. Your comment will be forwarded to the decision makers.

P9-2 Comment noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P9-3 Comment noted. Refer to response to comments P1-5 (access road) and P1-3 (slope stability), earlier in this Responses to Comments Report.

P10

Dean y Elida Whinery

Y Cristóbal

342 S. Madrona Ave.
Brea, Calif. 92821
(714) 990-4246
E-mail: tiodean@hotmail.com

A.P. 15, La Higuera
Calvillo, Ags. CP 20800
México

31 July 2004

Ray Hull
County of Orange
Integrated Waste Mgt. District
320 N. Flower St., Ste. 400
Santa Ana, Calif. 92703

Sir:

In response to the Draft EIR on the Olinda Landfill Expansion, please accept my thoughts and concerns as follows: P10-1

I oppose any effort to build a road through rustic Tonner Canyon because (1) I believe such a road would hazardous to the environment; (2) the cost of building such a road adequate for use by heavy trucks would be excessive, due to serious seismic concerns; and (3) such a road would be much more useful for out-of-county haulers than in-county users, and bring even more traffic onto the already busy, narrow, and often dangerous Brea Canyon Road. With Orange County facing ever-shrinking space for landfill, it seems we should be discouraging use from neighboring counties. P10-2

While I am not opposed to extending the time of use for the Olinda site, I do have very strong reservations about any further expansion. P10-3

I urge establishing some sort of fund that would assure open space through the Chino Hills adjacent to Brea, in perpetuity. P10-4

Finally, although the NIMBY syndrome is very evident in the area, I recognize that the dump was there long before many, if not most, of the complainers arrived. However, as a resident of central Brea, I am painfully aware of the great number of trash trucks on our major thoroughfares. Thus, I would urge increased mitigation on Valencia Avenue and connecting roadways. P10-5

Sincerely,

R. Dean Whinery B.

P10 RESPONSES TO COMMENTS FROM R. DEAN WHINERY B. DATED JULY 31, 2004

P10-1 Comment noted. No response necessary.

P10-2 Comment noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P10-3 Comment noted. No response necessary.

P10-4 Comment noted. Refer to response to comment S5-12, earlier in this Responses to Comments Report

P10-5 Comment noted. No response necessary.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:01 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P11

-----Original Message-----
From: Jim Dower [mailto:djdower@adelphia.net]
Sent: Sunday, July 18, 2004 3:36 PM
Subject: Dump the Trucks at OAL!

Truck route would be approriate given future school plans. P11-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P11-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P11-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P11-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P11-5

Sincerely,

Jim Dower
183 Morning Glory
Brea, CA 92821

714.816.6330

P11 RESPONSES TO COMMENTS FROM JIM DOWER DATED JULY 18, 2004

P11-1 Comment noted. No response necessary.

P11-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P11-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P11-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P11-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:01 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P12

-----Original Message-----
From: Art Hutton [mailto:spectral52@aol.com]
Sent: Sunday, July 18, 2004 5:41 PM
Subject: Dump the Trucks at OAL!

The only real solution to this obnoxious and unwanted traffic on Imperial Hwy. is to eliminate it. Why must the citizens of Brea be exposed to this outraegeous and unsafe flow of trash and garbage through our main traffic artery? Why aren't the politicians, who we have elected to office, looking after the best interests of those who have put them in office? Get these trucks off of our city roads!! P12-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P12-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P12-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P12-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P12-5

Sincerely,

Art Hutton
211 St. Crispen Ave.
Brea, CA 92821

P12 RESPONSES TO COMMENTS FROM ART HUTTON DATED JULY 18, 2004

P12-1 Comment noted. No response necessary.

P12-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P12-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P12-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P12-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:02 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P13

-----Original Message-----
From: Wm. Holtzen [mailto:holtzen@adelphia.net]
Sent: Sunday, July 18, 2004 9:19 PM
Subject: Dump the Trucks at OAL!

I fully agree with the letter above. As a first time home owner with a house that backs up to Valencia I experience the noise), pollution, smell, and trash that is brought in by these trucks daily starting at 6am or early. What also concerns me is that I regularly hear the sound of truck brakes locking up or skidding to a stop. I believe it won't be long before there is a serious accident.
I understand that the Brea landfill is needed but that does not mean that this route must be used. PLEASE consider an alternate route such as Toner.

Thank you. P13-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P13-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P13-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P13-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P13-5

Sincerely,

Wm. Holtzen
435 Hummingbird Dr
Brea, CA 92823

714-879-3901 x1243

P13 RESPONSES TO COMMENTS FROM WM. HOLTZEN DATED JULY 18, 2004

P13-1 Opinion noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report.

P13-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P13-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P13-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P13-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 11:37 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P14

-----Original Message-----
From: Andra Cullen [mailto:acrefai@bakemarkwest.com]
Sent: Monday, July 19, 2004 11:07 AM
Subject: Dump the Trucks at OAL!

The last thing that we need in Brea is an increase in traffic. It's a beautiful city and should remain to be so. I moved to Brea from Ohio 3 years ago and absolutely fell in love with the city. P14-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P14-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P14-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P14-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P14-5

Sincerely,

Andra Cullen
253 Mountain Ct
Brea, CA, CA 92821

714-256-1010

P14 RESPONSES TO COMMENTS FROM ANDRA CULLEN DATED JULY 19, 2004

P14-1 Comments noted. Opinion noted. No response necessary.

P14-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P14-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P14-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P14-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 1:06 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P15

-----Original Message-----
From: AL BERTULLI [mailto:beval@adelphia.net]
Sent: Monday, July 19, 2004 12:14 PM
Subject: Dump the Trucks at OAL!

THIS SHOULD BE YOUR NUMBER ONE PRIORITY.

P15-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

P15-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished.

P15-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built.

P15-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

P15-5

Sincerely,

AL BERTULLI
5610 WESHAM PLC.
BREA, CA 92821

562 6970370

P15 RESPONSES TO COMMENTS FROM AL BERTULLI DATED JULY 19, 2004

P15-1 Comments noted. Comment noted. No response necessary.

P15-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P15-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P15-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P15-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 4:39 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P16

They sent this message 6 times. I am only forwarding one. (They are all the same.)

-----Original Message-----
From: Dr. and Mrs. Gary M. Piroutek [mailto:piroutek@aol.com]
Sent: Monday, July 19, 2004 4:37 PM
Subject: Dump the Trucks at OAL!

We have been residents of Brea for 25 years, and were told repeatedly that the landfill/dumpsite would be closed. That year for closure keeps being pushed farther into the future. The conditions are not adequate for keeping the landfill open longer. A new elementary school is scheduled to be built at the corner of Valencia and Birch streets with many threats of large trucks to our children. The quality of life with the added traffic, pollution, noise, and decreased park land will have a negative impact to the citizens of Brea and nearby Yorba Linda and Placentia residents. It is not reasonable to keep changing the dumpsite closure dates-As residents, we want to have confidence in the information that we are being told is correct; but continually changing the dates does not make this possible. P16-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P16-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P16-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P16-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P16-5

Sincerely,

Dr. and Mrs. Gary M. Piroutek
153 Morning Glory Street
Brea, CA 92821

(714) 524-6766

P16 RESPONSES TO COMMENTS FROM DR. AND MRS. GARY M. PIROUTEK DATED JULY 19, 2004

P16-1 Comments noted. Refer to response to comment S5-13 (noise impacts on Valencia Avenue), earlier in this Responses to Comments Report.

P16-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P16-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P16-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P16-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 20, 2004 11:06 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

P17

-----Original Message-----
From: Jack & Marianne Keating [mailto:jackeating@sbcglobal.net]
Sent: Tuesday, July 20, 2004 10:57 AM
Subject: Dump the Trucks at OAL!

We are both in our 70s. We moved here to be close to our children and grandchildren & because Brea is "The City of Trees". How about keeping the spirit of that theme and follow the will of the majority of citizens. It is bad enough that the hills are "disappearing" and the air is worse by the day and toe traffic is terrible. Please do what you "can do" to keep Brea a nice quiet, clean, healthy environment and a destination city for nice people will want to live. P17-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P17-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P17-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P17-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P17-5

Sincerely,

Jack & Marianne Keating
2066 Arts Ave
Brea, CA 92821

714-671-5977

P17 RESPONSES TO COMMENTS FROM JACK AND MARIANNE KEATING DATED JULY 20, 2004

P17-1 Opinions noted. No response necessary.

P17-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P17-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P17-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P17-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Hagthrop, Linda
Sent: Thursday, July 22, 2004 3:28 PM
To: Hull, Ray; Amirhosseini, Susan
Subject: FW: Dump the Trucks at OAL!

P18

-----Original Message-----
From: Cynthia & Ramon Valdez [mailto:2animals@sbcglobal.net]
Sent: Wednesday, July 21, 2004 2:01 PM
Subject: Dump the Trucks at OAL!

We chose this city to buy a home in because it seemed rather peaceful, however, with all these trucks coming through all the time it is not the peaceful haven we were expecting. P18-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P18-2

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished. P18-3

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P18-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P18-5

Sincerely,

Cynthia & Ramon Valdez
4322 Hillside Rd
Brea, CA 92823

714-572-2493

P18 RESPONSES TO COMMENTS FROM CYNTHIA AND RAMON VALDEZ DATED JULY 21, 2004

P18-1 Opinion noted. No response necessary.

P18-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P18-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P18-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P18-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

Hull, Ray

From: Hagthrop, Linda
Sent: Monday, July 26, 2004 9:14 AM
To: Hull, Ray
Cc: Amirhosseini, Susan
Subject: FW: Dump the Trucks at OAL!

P19

-----Original Message-----
From: rebecca vargas [mailto:varbecky1@cs.com]
Sent: Thursday, July 22, 2004 5:06 PM
Subject: Dump the Trucks at OAL!

my ashma is worse when the windows open, lots of dust on windows and furniture. when the trucks on valencia will sandwitch you in like the own the road. diesal toxic fumes bad P19-1

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill. P19-2

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Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built. P19-4

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994. P19-5

Sincerely,

rebecca vargas
3616 falcon way
brea, CA 92823

P19 RESPONSES TO COMMENTS FROM REBECCA VARGAS DATED JULY 22, 2004

P19-1 Comment noted. No response necessary.

P19-2 Comments noted. Refer to response to comment P1-5, earlier in this Responses to Comments Report.

P19-3 Comments noted. Refer to response to comment P2-3, earlier in this Responses to Comments Report.

P19-4 Comments noted. Refer to response to comment P2-4, earlier in this Responses to Comments Report.

P19-5 Comments noted. Refer to response to comment P1-1, earlier in this Responses to Comments Report.

P20

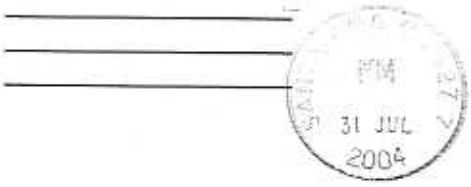
In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension.] P20-1
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.] P20-2
- ~~I support establishment of a mitigation fund to buy open space in the Brea region.~~
- I support increased traffic mitigation along Valencia Avenue.] P20-3

Name Gogi Berger

Address 1006 WOODCREST

City BREA E-Mail



RECEIVED
AUG 02 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

P20 RESPONSES TO COMMENTS FROM GOGI BERGER DATED AUGUST 2, 2004

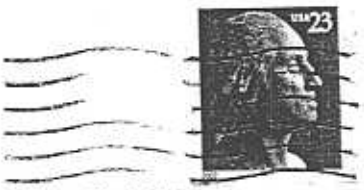
P20-1 Comment noted. No response necessary.

P20-2 Comment noted. Refer to Section 2.3.3 (Tonner Canyon Road) in the DEIR which indicates that the proposed project does not include the provision of an alternative access to the landfill via a new access road in Tonner Canyon.

P20-3 Comments noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report.

P21

Mr. Robert E. Zlotnik
520 Stone Canyon Way
Brea, CA 92821-2014



RECEIVED
AUG 02 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27703+5000

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension. P21-1
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon. P21-2
- I ~~support~~ oppose establishment of a mitigation fund to buy open space in the Brea region. P21-3
- I ~~support~~ oppose increased traffic mitigation along Valencia Avenue. P21-4

Name Robert E Zlotnik

Address 520 Stone Canyon Way

City Brea, Ca 92821 E-Mail

P21 RESPONSES TO COMMENTS FROM ROBERT E. ZLOTNIK DATED AUGUST 2, 2004

P21-1 Comment noted. No response necessary.

P21-2 Comment noted. Refer to Section 2.3.3 (Tonner Canyon Road) in the DEIR which indicates that the proposed project does not include the provision of an alternative access to the landfill via a new access road in Tonner Canyon.

P21-3 Comment noted. Refer to response to comment S4-12 for discussion of the mitigation fund suggestion. The DEIR includes mitigation measures for all significant adverse impacts of the project, as summarized in Table 1-1.

P21-4 Comments noted. Refer to response to comment S5-13, earlier in this Responses to Comments Report.

DO NOT CATER TO THIS SPECIAL INTEREST! HILLS FOR EVERYONE PUT THESE OUT. THEIR INTEREST IS NOT FOR THE PUBLIC GOOD. THEY ARE INVOLVED IN A SELFISH PURSUIT TO STEAL LAND WITHOUT COMPENSATION! P-22

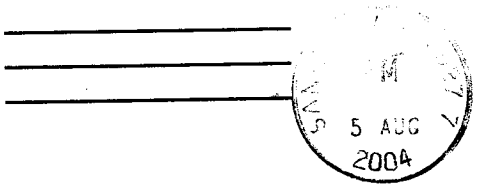
~~In response to the draft Environmental Impact Report on the Olinda Landfill Expansion please note that:~~

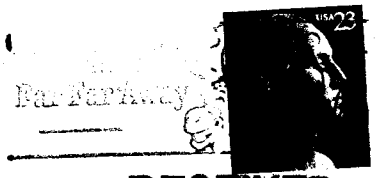
- ~~I oppose the Olinda Landfill expansion and extension.~~
- ~~I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.~~
- ~~I support establishment of a mitigation fund to pay upon sale in the Brea region.~~
- ~~I support increased traffic mitigation along Valencia Avenue.~~

Name MILES BUSH

Address 1339 WOODCREST AVENUE

City BREA E-Mail





RECEIVED
AUG 06 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

P22 RESPONSES TO COMMENTS FROM MILES BUSH DATED AUGUST 6, 2004

P22-1 Comment noted. No response necessary. Your comment will be forwarded to the decision makers.

APPENDIX A
INITIAL STUDY/ENVIRONMENTAL CHECKLIST AND NOTICE OF PREPARATION (NOP)

INITIAL STUDY

PROJECT TITLE: Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Olinda Alpha Landfill Implementation

LEAD AGENCY: County of Orange Integrated Waste Management Department

INITIAL STUDY NUMBER: 588

LEAD DIVISION: Office of Public Affairs

PROJECT CONTACT: Linda Hagthrop, Public Information Officer **PHONE:** (714) 834-4176

PROJECT LOCATION: The proposed project is within the Olinda Alpha Landfill located at 1942 North Valencia Avenue in unincorporated Orange County adjacent to and within the sphere of influence of the City of Brea. The Olinda Alpha Landfill is generally bounded by Lambert Road to the south and Valencia Avenue to the southwest. The Olinda Alpha Landfill is located on the following assessor parcels: 308-031-3, 7, 8, 9, 14, 15, 17, 22, 30, 31 and 308-021-3, 4, 12, 14.

PROJECT DESCRIPTION: The Regional Landfill Options for Orange County (RELOOC) is a long-range strategic planning program initiated by the County of Orange Integrated Waste Management Department (IWMD). The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long-term solid waste disposal options for the County. As part of that endeavor, the County is proposing short-term improvements to an existing municipal solid waste landfill operated by the County's IWMD. The proposed project includes the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's short-term solid waste disposal needs.

DECISION-MAKER: County of Orange Board of Supervisors

RESPONSIBLE/TRUSTEE AGENCIES INVOLVED:

Federal Agencies

U.S. Environmental Protection Agency (EPA).

State Agencies

California Integrated Waste Management Board.
California Water Resources Control Board.

Regional Agencies

Regional Water Quality Control Board - Santa Ana Region.
South Coast Air Quality Management District.

County Agencies

Orange County Health Care Agency (Solid Waste Local Enforcement Agency).
Orange County Board of Supervisors.
Orange County Fire Authority.
Orange County Planning Department.

City Agencies

City of Brea.

LAND USE ENTITLEMENT SUMMARY:

General Plan Land Use Designation:

Olinda Alpha Landfill

County of Orange designation - Public Facilities/Landfill Site (4(LS)).
City of Brea designation - Sanitary Landfill.

Zoning:

Olinda Alpha Landfill

County of Orange designation – General Agricultural (Public Facilities).
City of Brea designation – No zoning designation.

PREVIOUS ENVIRONMENTAL DOCUMENTATION:

Olinda Alpha Landfill:

Final EIR 523 for the North Orange County Landfill and Alternative Technologies Study (NOCLATS)

INITIAL STUDY DATE: January 8, 2004.

ENVIRONMENTAL ANALYSIS CHECKLIST

EIR Number 588 for the RELOOC Strategic Plan - Olinda Alpha Landfill Implementation Project

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
1. LAND USE & PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
2. AGRICULTURE. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☐	☒
3. POPULATION & HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
4. GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☒	☐	☐	☐
ii) Strong seismic ground shaking?	☒	☐	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☒	☐	☐	☐
iv) Landslides?	☒	☐	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
5. HYDROLOGY & WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Have a significant adverse impact on groundwater quality or otherwise substantially degrade water quality?	☐	☒	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒
6. TRANSPORTATION/CIRCULATION. Would the project:				
a) Result in an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
g) Conflict with adopted policies, plan or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?	☐	☐	☐	☒
7. AIR QUALITY. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
8. NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a private or public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working the project area to excessive noise levels?	☐	☐	☐	☒
9. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?	☐	☐	☐	☒
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
10. AESTHETICS. Would the project:				
a) Have a substantial adverse effect a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
11. CULTURAL/SCIENTIFIC RESOURCES, Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse changed in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒
12. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒
13. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒
14. HAZARDS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐
i) Include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?	☐	☐	☐	☒
15. PUBLIC SERVICES. Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☒	☐	☐	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☒	☐	☐	☐
v) Other public facilities?	☐	☐	☐	☒

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
16. UTILITIES & SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state and local statutes and regulations related to solid waste?	☐	☐	☐	☒
MANDATORY FINDINGS				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have possible environmental effects, which are individually limited but cumulatively considerable? ("cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐

ISSUES & SUPPORTING DATA SOURCES:	Potential Significant Impact	Less than Significant w/ Mitigation	Less than Significant Impact	No Impact
c) Does project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly	☒	☐	☐	☐

DETERMINATION:
Based upon the evidence in light of the whole record documented in the attached environmental checklist explanation, cited incorporations and attachments, I find that the proposed project:

COULD NOT have a significant effect on the environment, and a negative declaration (ND) will be prepared pursuant to CEQA Guidelines Article 6, 15070 through 15075. ☐

COULD have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures have been added to the project. A negative declaration (ND) will be prepared pursuant to CEQA Guidelines Article 6, 15070 through 15075. ☐

MAY have a significant effect on the environment, which has not been analyzed previously. Therefore, an environmental impact report (EIR) is required. ☒

Signature: _____

Planner: John Arnau
Environmental Services
Telephone: (714) 834-4107

NOTE: All referenced and/or incorporated documents may be reviewed by appointment only, at the County of Orange Integrated Waste Management Department, 320 N. Flower Street, Fourth Floor, Santa Ana, California, unless otherwise specified. An appointment can be made by contacting the CEQA Contact Person identified above.

Revised 2-5-03

ENVIRONMENTAL ANALYSIS CHECKLIST
Regional Landfill Options for Orange County (RELOOC) Strategic Plan – Olinda Alpha Landfill Implementation

1.0 LEAD AGENCY

The County of Orange will serve as the lead agency for the proposed Regional Landfill Options for Orange County (RELOOC) Strategic Plan - Olinda Alpha Landfill Implementation and the County's Integrated Waste Management Department (IWMD) will act as the designated lead agency in preparing notices, conducting public hearings and implementing California Environmental Quality Act (CEQA)-related processing requirements.

1.1 Discretionary Approvals

A number of discretionary approvals will be required as part of the project's approval and implementation. These discretionary approvals will be required from a variety of agencies and are anticipated to include the following:

County of Orange
- Certification of the Environmental Impact Report
- Grading permits.

California Regional Water Quality Control Board
- Storm Water Management Plans
- Revision to Waste Discharge Requirements

California Integrated Waste Management Board and Local Enforcement Agency (County of Orange Health Care Agency)
- Revision to Solid Waste Facility Permit.

South Coast Air Quality Management District
- Permits to construct – Gas Control Systems.
- Permits to Operate – Gas Control Systems.

City of Brea
- Amendment to the current Memorandum of Understanding (MOU)

2.0 PURPOSE OF THE ENVIRONMENTAL ANALYSIS CHECKLIST

The purpose of this Environmental Analysis Checklist (EAC) is to provide preliminary analysis of potential environmental consequences that may result with the implementation of the

proposed project. The IWMD has prepared this EAC to determine the appropriate level of environmental documentation needed for this project. IWMD has determined the appropriate level of environmental documentation needed for this project. IWMD has determined that an Environmental Impact Report (EIR) will be prepared for the proposed project based on the anticipated impacts. Although Section 15063 of the CEQA Guidelines indicates that a Lead Agency may bypass the preparation of an Initial Study (i.e., EAC), IWMD has chosen to prepare and circulate this EAC to more precisely disclose potential impacts and thereby obtain more specific guidance from responsible agencies and the public on the scope and topics to be covered in the EIR.

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The following environmental parameters may be potentially affected by implementation of the proposed project:

Land Use and Planning	Noise
Geology and Soils	Aesthetics
Hydrology & Water Quality	Cultural/Scientific Resources
Transportation/Circulation	Hazards
Air Quality	Public Services

A preliminary evaluation of potential impacts is provided below. A more detailed analysis will be contained in the EIR.

4.0 ENVIRONMENTAL ANALYSIS

This section of the EAC analyzes the potential for significant environmental impacts that may result from the proposed project. The format for this analysis is based on the enclosed Environmental Analysis Checklist.

For the evaluation of potential impacts, the questions in the checklist are stated and an answer is provided reflecting the analysis conducted for this impact. To each question, there are four possible responses:

- *No Impact* – The proposed project will not have a measurable impact on the environment.
- *Less than Significant Impact* – The proposed project will have the potential for impacting the environment but at a level less than the significance criteria used to evaluate the impact.
- *Less than Significant with Mitigation* – The proposed project will have a significant impact unless mitigation measures are implemented to reduce the impact to a less than significant level.
- *Potential Significant Impact* – The proposed project will have impacts considered significant and either (1) additional analysis is needed to identify specific mitigation

measures to reduce this impact to a less than significant level, (2) feasible mitigation measures are not available to reduce this impact to a less than significant level, or (3) the impacts associated with the project are not known at this time and further analysis in an Environmental Impact Report (EIR) is warranted.

NOTE: The Olinda Alpha Landfill is deliberately designed and operated in a manner that avoids and mitigates potential environmental impacts, and it is the intent of IWMD to continue this practice in the design of the proposed project. However, in keeping with the purpose of this NOP, even though an environmental issue identified in the checklist is anticipated to be satisfactorily mitigated in the future, the box "Potential Significant Impact" has been checked rather than "Less than Significant with Mitigation." This is to inform the NOP recipient that the issue will be described and analyzed in the forthcoming Draft EIR, and to invite comments from Responsible Agencies and interested parties on how the assessment of the issue should be addressed in the document and how mitigation or avoidance of the issue should be incorporated into the project.

1. Land Use and Planning

Would the project: (a) Physically divide an established community?

No Impact. The Olinda Alpha Landfill is an existing landfill. The proposed vertical and horizontal expansion of this landfill would not extend beyond the property boundary of this site and therefore would not result in the disruption or division of the physical arrangement of an established community.

Would the project: (b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating and environmental effect?

Potential Significant Impact. The Olinda Alpha Landfill is located in unincorporated Orange County and is designated as a 4(LS) in the County of Orange General Plan. This designation allows for the use of this site for municipal solid waste (MSW) disposal. The County Public Facilities Zoning designation for this site also allows for use of the site for MSW disposal. The landfill is also located in the City of Brea's Sphere of Influence and is designated in the City's General Plan as a Public Facility which allows for the use of this site for MSW disposal. The proposed project would not conflict with the City's existing General Plan land use designation because the proposed expansion activities would occur entirely within the existing landfill boundaries. Nor would the proposed project conflict with the County or City's existing General Plan designations.

The existing MOU between the City of Brea and the County of Orange regarding the operation of Olinda Alpha Landfill would require renegotiation to allow the disposal of MSW over a longer period of time resulting from the additional capacity that is provided under the proposed project. The existing MOU identifies the landfill closure date established as 2013. Under the proposed project, closure would be extended to 2021 based on increased operational efficiencies, current population projections and existing disposal technologies.

Would the project: (c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There are no known City of Brea environmental plans or policies that would be adversely affected by the proposed project. The vertical and horizontal expansion of Olinda Alpha Landfill would not result in development outside of the existing landfill boundary. The Olinda Alpha Landfill is not located within a designated Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) area.

2. Agriculture

Would the project: (a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The vertical and horizontal expansion of Olinda Alpha Landfill will not impact any Prime, Unique or Farmland of Statewide Importance. There are no existing agricultural preserves on the site or the expansion area, and no preserves will be impacted under the proposed project. Existing roads will be used to haul MSW to the Olinda Alpha Landfill. No new roads and/or modifications to existing roads are proposed. Therefore, the proposed project will not result in impacts related to the conversion of farmlands listed as Prime, Unique or Farmland of Statewide Importance to non-agricultural uses.

Would the project: (b) Conflict with existing zoning for agriculture use, or a Williamson Act contract?

No Impact. The proposed project would not result in the cancellation of any Williamson Act contracts or conflict with any existing zoning for agricultural uses.

Would the project: (c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill will not result in the conversion of agricultural land to non-agricultural use. There is no agriculture land within the horizontal expansion areas of the existing landfill property. The proposed project would not involve changes in the existing equipment that due to their location or nature could result in conversion of farmland to non-agricultural uses.

3. Population and Housing

Would the project: (a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?

No Impact. The proposed project will continue operations at Olinda Alpha Landfill. None of the improvements under the proposed project would entail new homes or extending any major infrastructure (i.e., sewer or water lines, roadways, etc.) that could support additional development beyond the individual landfill site boundaries. Employment associated with landfill operations will be drawn from existing onsite employment. There may be brief temporary periods requiring additional personnel, such as during site development activities. No substantial new employment will be generated by the proposed project that could potentially contribute to additional demand for housing or services in the surrounding area.

Would the project: (b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project will not result in the removal or demolition of any existing housing. The proposed project would not entail the displacement of a substantial number of houses since no housing currently exists on-site or is proposed.

Would the project: (c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project will not result in the removal or demolition of any existing housing. The proposed project would not entail the displacement of a substantial number of people since no housing currently exists on-site or is proposed.

4. Geology and Soils

Would the project result: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:(a)(i) Rupture of a known earthquake fault; (a)(ii) Strong seismic ground shaking; (a) (iii) Seismic-related ground failure, including liquefaction; (a)(iv) Landslides?

*Potential Significant Impact***.** The Olinda Alpha Landfill is located immediately north of the active Whittier fault. The project site is located in southern California, an area known to be geologically active and which is subject to seismic events. The soils underlying the Olinda Alpha Landfill site include soils of the Cienaba Association and are underlain by Puente Formation bedrock, both units are locally prone to landslides. The vertical and horizontal expansion of the landfill will result in changes in topography and will be designed to meet stringent landfill regulatory requirements for seismic stability in the California Code of Regulations (CCR), Title 27.

Would the project: (b) Result in substantial soil erosion or the loss of topsoil?

Potential Significant Impact. The soils underlying the Olinda Alpha Landfill site have some potential for erosion. The proposed vertical and horizontal expansion of this landfill will result in changes of topography because of grading and filling on-site. Erosion control measures and facilities (i.e. desilting basins, straw bales, and vegetation) are implemented as part of normal landfill operations in accordance with regulatory requirements in CCR, Title 27. These measures are also proposed for the vertical and horizontal expansion.

Would the project: (c) Be located on a geologic unit or soil that is unsuitable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Potential Significant Impact. The proposed vertical and horizontal expansion of the landfill will result in changes of topography because of grading and filling on-site. These changes will be designed to meet stringent landfill regulatory requirements for stability in the CCR, Title 27.

Would the project: (d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less than Significant Impact. Some of the soils underlying the Olinda Alpha Landfill site and the horizontal expansion area have a moderate to high shrink-swell potential. Although considered to be expansive soils, the soils at the site would not create a substantial risk to life or property.

Would the project: (e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?

No Impact. The vertical and horizontal expansion of the Olinda Alpha Landfill does not propose the use of septic tanks.

5. Hydrology & Water Quality

Would the project: (a) Violate any water quality standards or waste discharge requirements?

Less than Significant Impact. The Olinda Alpha Landfill is approved under the Waste Discharge Requirements (WDRs) issued by the Regional Water Quality Control Board (RWQCB) and is designed to comply with water quality standards and waste discharge requirements. Semi-annual water quality testing at the landfill is conducted for volatile organic compounds (VOC), minerals, total dissolved solids (TDS), potential of hydrogen (pH), electrical conductivity (EC), nitrates and metals. Groundwater is extracted, treated, and reused on-site. Any modification of the existing landfill design will require coordination with the Landfill Section of the RWQCB to revise the existing National Pollutant Discharge Elimination System (NPDES) permit and WDRs for the Olinda Alpha Landfill in accordance with Federal and State requirements for the protection of water quality.

Would the project: (b) Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of a local groundwater table level?

No Impact. The proposed project does not include any components that would result in groundwater extraction. The horizontal and vertical expansion and associated drainage patterns will channel runoff downstream to the existing detention basins. The reduction in recharge at the horizontal and vertical expansion areas is not anticipated to substantially reduce recharge in the

regional groundwater basin. Moreover, the proposed project would not result in significant adverse impacts related to groundwater depletion that would contribute to a net deficit in aquifer volume or a lowering of a local groundwater table.

Would the project: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in manner which would result in: (c) Substantial erosion or siltation on- or off-site; (d) flooding on- or off-site; (e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less than Significant Impact. The proposed project would not substantially alter the existing drainage pattern of the site or area. The project will continue to operate as a solid waste landfill. The existing storm water control system consisting of a network of drainage channels, berms, interceptor ditches and sedimentation basins will be extended, as necessary, to control any additional runoff and erosion associated with the proposed project. The concrete-lined sedimentation basins are sufficiently sized to accommodate storm water drainage associated with existing and future landfill operations. Collected silt is cleaned out of the sedimentation basins at the end of the rainy season.

The continued operation and expansion of the Olinda Alpha Landfill will result in an increase in excavation and grading, potentially causing increases in erosion and runoff. Vertical and horizontal expansion of Olinda Alpha Landfill will modify the surface hydrology and change stormwater runoff rates on this site. The change in stormwater runoff is not expected to be substantially different from the existing condition and is not anticipated to result in flooding on or off-site. Off-site discharge will be controlled to only release pre-development condition flows during a storm event. The proposed project will not impact the capacity of existing or planned stormwater drainage systems off-site.

Would the project: (f) Have a significant adverse impact on groundwater quality or otherwise substantially degrade water quality?

Less than Significant Impact with Mitigation. The proposed project would result in the approximately 115-foot vertical and 33-acre horizontal expansion at the Olinda Alpha Landfill site. The landfill expansion must be designed, operated and monitored to preclude any significant impacts to groundwater resources or water quality. In addition, the vertical and horizontal expansion must be approved under WDRs issued by the RWQCB.

Would the project: (g) Place housing within a 100 year flood hazard area; (h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

No Impact. The proposed project does not include the development of housing or structures that would be located within a 100-year flood hazard area.

Would the project: (i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or (j) Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project is not anticipated to result in any impacts related to flooding as a result of the failure of a levee or dam, inundation by seiche, tsunami or mudflow.

6. Transportation and Circulation

Would the project: (a) Result in an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system?

Potential Significant Impact. Olinda Alpha Landfill is currently permitted to process a maximum of 8,000 tons per day (TPD) of MSW although this landfill is currently restricted to an annual average of 7,000 TPD consistent with the memorandum of understanding (MOU) with the City of Brea. In 2003, the Olinda Alpha Landfill received an annual average daily tonnage of approximately 6,800 TPD. The proposed expansion of Olinda Alpha Landfill includes no increase in the maximum permitted TPD. However, additional soil import trucks would access the site by 2017 at which time refuse importation truck traffic would cease resulting in no substantial increase in truck traffic. Therefore, the proposed project would not result in increased vehicle trips beyond traffic forecasts assumed for the currently approved annual average of 7,000 TPD and would not result in more trips than currently experienced at Olinda Alpha Landfill. However, the proposed project would result in vehicle trips for a longer period of time than is currently permitted or planned which may result in traffic congestion beyond adopted policies and forecasts anticipated.

Would the project: (b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Potential Significant Impact. The Orange County Congestion Management Program (CMP) Highway System designated roads in the vicinity of Olinda Alpha Landfill include Valencia Avenue, Carbon Canyon Road, and Imperial Highway. The intersections of Imperial Highway/Valencia Avenue and Imperial Highway/Rose Drive are CMP intersections. The proposed project, in combination with cumulative projects, may result in exceeding the level of service (LOS) standards on designated CMP roads or intersections.

Would the project: (c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The Olinda Alpha Landfill is outside the defined airspace of any airport. The proposed expansion at Olinda Alpha Landfill would not result in changes in air traffic patterns. Because the proposed expansion will not generate demand for air passenger or cargo trips, the expansion will not result in changes in air traffic levels in this area. Therefore, the proposed project will not result in adverse impacts related to air traffic patterns.

Would the project: (d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

No Impact. Access to Olinda Alpha Landfill is provided via existing public and private roads, designed to local jurisdictions' standards, which are suitable for use by waste disposal trucks. Private access roads provide connections from public roads to and onto this landfill site. These access roads are adequate for use by waste disposal trucks. These private access roads are restricted to use by waste disposal vehicles, landfill employee vehicles, and vehicles operated by the public. The proposed vertical and horizontal expansion do not include road improvements or the use of vehicles not compatible with public and private access roads serving the landfill. Therefore, expansion of Olinda Alpha Landfill will not result in impacts related to safety hazards from design features or incompatible uses.

Would the project: (e) Result in inadequate emergency access?

No Impact. Access to Olinda Alpha Landfill is provided via public and private roads. Private roads provide connections from public roads (namely Valencia Avenue) to and onto the landfill site and are restricted to use by waste disposal vehicles, landfill employee vehicles, and public vehicles. Emergency vehicles can use these private roads if necessary to respond to fire, medical, or police emergency. Consistent with the California Vehicle Code and local restrictions, trucks using public roads to access the landfill do not block emergency vehicles and do not block access to adjacent uses. At the landfill, trucks do not queue off the landfill site and therefore, do not block emergency access in the area. On the landfill site, truck queuing is managed to ensure that emergency vehicles can access the site, if necessary. The proposed vertical and horizontal expansions do not include any features that would alter traffic operations onto or off the landfill site. Therefore, expansion of Olinda Alpha Landfill will not result in adverse impacts related to emergency access or access to other land uses.

Would the project: (f) Result in inadequate parking capacity?

No Impact. Parking for employees and vehicles waiting for inspection or to deposit loads is currently provided on the Olinda Alpha Landfill site. In the event that additional parking is temporarily needed as a result of the proposed vertical and horizontal expansion, it also would be provided on the landfill site. No off-site parking will be required. Therefore, the proposed vertical and horizontal expansion at Olinda Alpha Landfill will not result in any impacts related to inadequate parking capacity.

Would the project: (g) Conflict with adopted policies, plan or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks)?

No Impact. Trucks transporting solid waste to Olinda Alpha Landfill, including the areas for the proposed vertical and horizontal expansion, would operate on public roads consistent with laws and regulations controlling vehicle traffic, similar to existing conditions associated with trucks currently accessing the landfill. Alternative modes, including rail, bus, transit, bicycling, carpooling, and vanpooling would not be adversely affected by these truck operations on public roads. Therefore, the proposed vertical and horizontal expansion at Olinda Alpha Landfill would not result in conflicts with adopted policies regarding alternative transportation.

7. Air Quality

Would the project: (a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. The proposed project would not result in an obstruction to the implementation of the 2003 Air Quality Management Plan.

Would the project: (b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation; (c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment?

Potential Significant Impact. The entire South Coast Air Basin (SCAB) is designated as a national-level extreme non-attainment area for ozone, meaning that national ambient air quality standards are not expected to be met until beyond 2010, and a non-attainment area for CO and PM_{10}. The proposed project would extend the operational life of the Olinda Alpha Landfill by means of vertical and horizontal expansion at this landfill. However, this would not result in an increase in the daily maximum or annual tonnage volumes of MSW deposited at the landfill. The proposed project would not change the number of trucks currently accessing the site each day, the number of vehicle miles traveled (VMT) by project-related vehicles, or the number of vehicles and equipment working on the active landfill face. However, an increase in the duration of emissions generated during the operation of the project would occur due to the extension of the site's closure date. In addition, an increase in landfill gas would occur due to the larger quantity of landfill space created by the project. The landfill will be collecting landfill gas and will be maintaining a landfill gas collection and control system. No substantial modifications to existing support structures at the landfill are anticipated under the proposed project. Because landfill operations are not anticipated to change substantially with the exception of landfill gases, air pollutant emissions associated with the proposed expansion would not change substantially from existing conditions. However, the project, in combination with cumulative projects, may result in a potential significant impact to air quality.

Would the project: (d) Expose sensitive receptors to substantial pollutant concentrations?

Potential Significant Impact. The expansion of Olinda Alpha Landfill would increase the potential for windblown dust in the local area. However, SCAQMD rules 402 and 403 governing nuisance and dust emissions would regulate dust emissions.

The proposed project will not result in new truck trips or impact areas not currently affected by landfill operations. The project would not expose sensitive population groups to pollutants in excess of acceptable levels beyond existing conditions, although the existing sources of air pollutants would continue for a longer time frame. For those projects in the area near the landfill that are planned but are not yet constructed, an extension of the operational life of the landfill could expose future sensitive receptors to substantial pollutant concentrations.

Would the project: (e) Create objectionable odors affecting a substantial number of people?

Potential Significant Impact. Though the air pollutant emissions due to vehicles exhaust from waste haulers would remain the same, the volume of MSW within the Olinda Alpha Landfill would increase due to the extension in capacities and operating period at the landfill. This increase in the volume of MSW would result in greater methane generation from the decomposition of organic solid waste materials. In addition, odor impacts may result from waste-hauling vehicles transporting solid waste to the site.

8. Noise

Would the project result in: (a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; (b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels; (c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; (d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potential Significant Impact. The proposed project would extend the operating life of Olinda Alpha Landfill through vertical and horizontal expansion. However, this would not increase the daily maximum or annual tonnage volumes of MSW deposited in the landfill on a daily basis. In addition, no change in the number of trucks accessing the landfill each day or the number of vehicles and equipment working on the active landfill face would occur. As such, the proposed project is not anticipated to significantly increase noise levels. However, noise from landfill operations currently experienced would be prolonged over the extended life of the landfill, as opposed to landfill related noise ceasing after the landfill closure under the current closure date (2013). In addition, the project, in combination with cumulative projects, could result in noise impacts.

Would the project: (e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a private or public airport or public use airport would the project expose people residing or working in the project area to excessive noise levels; (f) For a project within the vicinity of a private airstrip, would the project expose people residing or working the project area to excessive noise levels?

No Impact. The Olinda Alpha Landfill is not within two miles of an existing public airport and is not within an adopted Airport Land Use Plan. Therefore, the landfill will not result in exposure of people in this area to excessive noise levels.

9. Biological Resources

Would the project: (a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?

No Impact. The vertical and horizontal expansion of Olinda Alpha Landfill would have no impact on endangered, threatened or rare species or their habitats since the proposed expansion does not extend into any previously undisturbed areas on-site. The field survey conducted by P&D's biologist concluded that there is no suitable habitat in the area of the proposed expansion. In addition, no new infrastructure and/or expansions of the existing infrastructure to support the proposed project are required. Cover material for the expansion will be obtained from designated stockpiles or will be imported to the landfill from off-site sources.

Would the project: (b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Services?

No Impact. The vertical and horizontal expansion at Olinda Alpha Landfill would have no impact on any riparian habitat or other sensitive natural communities. The proposed expansion will only extend into areas that previously have been disturbed. No expansion of the existing infrastructure is required to support the proposed project. Cover material for the proposed expansion will be obtained from designated stockpiles or will be imported to the site from off-site sources.

Would the project: (c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The proposed vertical and horizontal expansion of Olinda Alpha Landfill would not impact wetlands or other watercourses subject to regulatory control since none are located on-site and no expansion activities are planned for off-site areas.

Would the project: (d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill is not expected to impact wildlife movement or migration patterns through wildlife corridors. No disturbance along the ridgeline east of the horizontal expansion area is proposed. However, landfill operations may generate dust, noise, or light emissions that could potentially disturb wildlife behavior, including possible shifts in the use of the eastern ridgeline. The majority of wildlife movement through and near the landfill occurs after dark. Since operations at the landfill cease at dark, no impacts to wildlife dispersal or migration through wildlife corridors will occur.

Would the project: (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill would not have an impact on locally designated species. The County of Orange has no officially adopted heritage tree ordinance or policy. Therefore, the proposed project would not result in impacts to locally designated species.

Would the project: (f) Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Olinda Alpha Landfill is not within an approved NCCP/HCP Reserve System and therefore, would not impact any NCCP/HCP areas.

10. Aesthetics

Would the project: (a) Have a substantial adverse effect upon a scenic vista?

Potential Significant Impact. The proposed Olinda Alpha Landfill will largely be accommodated on the same footprint as the existing landfill, with the exception of the relatively small area of the horizontal expansion. Most of the Olinda Alpha Landfill has been graded and/or excavated for landfill purposes and most of the area has been filled with MSW, covered and in some areas vegetated. The existing Olinda Alpha Landfill is visible from locations in the extreme north part of Carbon Canyon Regional Park and the northwest part of Chino Hills State Park that is open or planned to be open to the public. The expanded landfill also will be visible from these areas. Views of the expanded landfill would be similar to views of the permitted landfill except that the final elevation of the landfill will be higher. It is anticipated that once the landfill is closed and vegetated that the visual effect of the landfill expansion on these public views would be reduced.

Would the project: (b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Potential Significant Impact. Olinda Alpha Landfill is visible from Carbon Canyon Road. In the Open Space and Conservation Element of the City of Brea General Plan, this road is given special consideration. Development immediately adjacent to Carbon Canyon Road must be screened to soften its presence. The City suggests that vertical trees, shrub planting and walls/ berms be used where necessary for sound attenuation. The edge of Olinda Alpha Landfill is set back from Carbon Canyon Road approximately one-half mile and the Olinda Ranch residential development is between the landfill and Carbon Canyon Road. Landscape screening has been provided by Olinda Ranch along Carbon Canyon Road. The vertical expansion of Olinda Alpha Landfill will be accommodated on the same footprint as the existing landfill. Under the proposed expansion, the final landfill elevation will be higher than currently permitted and, therefore, more of the landfill may be visible from Carbon Canyon Road beyond the residences in the Olinda Ranch Development.

Would the project: (c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Potential Significant Impact. The proposed vertical and horizontal expansion of the Olinda Alpha Landfill largely will be accommodated on the same footprint as the existing landfill. Most of the Olinda Alpha Landfill site has been graded and/or excavated for landfill purposes and part of the area has been filled with MSW and covered. These developed landfill areas contrast with the adjacent undeveloped land in both form and color. The symmetrical shape of the constructed fill is distinct from the undisturbed adjacent ridges and the earth-toned graded areas contrast with nearby native vegetation. The color contrast is most apparent in the spring when new vegetation is green and is less vivid during the summer and fall when adjacent coastal sage scrub vegetation is more muted in color. The currently permitted landfill, including some graded and filled areas, is visible from the following locations: points along State Routes 55, 57 and 91 (SR 55, SR 57 and SR 91); Lambert Road and Carbon Canyon Road; the extreme north edge of Carbon Canyon Regional Park which is southeast of the landfill; elevated areas in the northwest part of Chino Hills State Park; and elevated areas of Brea and Los Angeles County north of the landfill.

Land uses in Chino Hills east and northeast of this landfill do not have views of the currently permitted landfill and will not have views of the proposed expansion because of intervening topography. Some land uses at higher elevations in Diamond Bar may have glimpses of the ultimate height of the current landfill beyond the ridges at the edge of the landfill. These locations will see slightly more of the landfill as a result of the proposed vertical expansion. Views of the landfill with the proposed vertical expansion will be similar to views under the current permit, except that the landfill would be higher (by 115') with the vertical expansion and, therefore, more of the landfill will be visible. This site is currently an operating landfill and views under the proposed vertical expansion will be similar to views under the permitted landfill. However, more of the landfill may be visible to land uses that would have views of the currently permitted landfill. Land uses that do not have views of the currently permitted landfill may have views of the expanded landfill because of the increased height.

Would the project: (d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

No Impact. Potential light and glare impacts associated with the expansion of Olinda Alpha Landfill would be the same as existing impacts associated with the permitted landfill. Sources of light at this landfill, including lighting for access roads, parking areas, buildings and security, would not change appreciably under the proposed expansion. Therefore, there would be no impacts related to light and glare associated with the expansion at Olinda Alpha Landfill.

11. Cultural/Scientific Resources

Would the project: (a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No Impact. No historic resources have been documented or discovered on the Olinda Alpha Landfill site. Therefore, no historic resources will be impacted by the proposed expansion.

Would the project: (b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact. The proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations. No impacts to known archaeological resources would occur. The majority of the proposed expansion area has been previously surveyed and there are no known archaeological sites within the existing site boundary.

Would the project: (c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less than Significant Impact with Mitigation. Although the proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations, rare paleontological specimens have been found at the site. The IWMD provides archaeological /paleontological monitoring services during construction to recover any paleontological resources specimens that may be discovered in the future**.** These resources are preserved in accordance with the County of Orange which enforce Standard Conditions of Approval that require paleontological monitoring during construction.

Would the project: (d) Disturb any human remains, including those interred outside of formal ceremonies?

No Impact. The proposed expansion of the landfill would only occur in areas previously disturbed by landfill operations. No known human remains would be disturbed by the proposed project.

12. Recreation

Would the project: (a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The vertical and horizontal expansion of the Olinda Alpha Landfill would not entail the construction of residential or commercial land uses that would result in an increased use of area parks or recreational facilities by employees. The proposed project also would not increase the number of employees at Olinda Alpha Landfill because the average daily TPD limit will not be increased at the landfill. Therefore, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Would the project: (b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project does not propose the construction of additional recreational facilities either on or off site at the Olinda Alpha Landfill. Therefore, the proposed project will not result in adverse impacts related to the provision of recreation resources. Olinda Alpha Landfill's ultimate land use is a passive regional park.

13. Mineral Resources

Would the project: (a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The California Department of Mines and Geology (CDMG) has classified the Olinda Alpha Landfill site as Mineral Resource Zone (MRZ-1) which indicates that adequate information exists to indicate that no significant mineral deposits are presently or likely to be present for this site. Therefore, the proposed project will not result in impacts related to known mineral resources of possible state or regional value.

Would the project: (b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local General Plan, Specific Plan or other land use plan?

No Impact. There are no significant mineral deposits documented on the Olinda Alpha Landfill site and this site is not identified as an important mineral resource recovery site. Therefore, the proposed vertical and horizontal expansion of this existing landfill will not result in the loss of availability of a locally important mineral resource recovery site delineated on local plans.

14. Hazards

Would the project: (a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials; (b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potential Significant Impact. The Olinda Alpha Landfill is a certified Class III landfill that does not accept hazardous, radioactive or explosive wastes for on-site disposal. There is an IWMD program in place at the Olinda Alpha Landfill to prevent hazardous wastes from entering the landfill and to ensure landfill workers are protected from potentially hazardous substances. This includes visual inspection of loads at the fee booths and the active face of the landfill and the rejection of loads containing hazardous wastes. Studies on the composition of MSW indicate the amount of hazardous wastes contained in MSW is small and is not likely to pose a threat of exposure to the public. However, landfill activities at Olinda Alpha Landfill under the proposed project would continue to be monitored by personnel trained to inspect incoming refuse and waste being deposited on the active landfill face to identify and remove potentially hazardous wastes.

Hazardous materials used on-site would be handled according to existing state and federal regulations and would be limited to fuels, oils and other materials used in the operation and maintenance of landfill equipment and vehicles. The operation and refueling of heavy construction equipment does have the potential to result in spills and leaks of fuels, oils and other liquids. Vehicles used in existing landfill operations are maintained and fueled on-site. A vehicle maintenance facility services the equipment, including oil changes, fueling and other typical maintenance activities. Waste oil currently is collected in a non-site storage tank and is emptied and hauled away by a certified commercial hauler. Disposal of waste oil, either in a certified landfill or by recycling, is the responsibility of the waste hauler. The use of hazardous materials and

generation of hazardous wastes would continue under these existing on-site programs over the extended life of the Olinda Alpha Landfill. The nearest existing and/or planned residential use is approximately 0.3 mile from the existing boundary of Olinda Alpha Landfill. Similar to existing conditions, no hazardous wastes would be disposed of at the landfill under the proposed project.

Would the project: (c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

No Impact. There are no existing or proposed schools within one-quarter mile of Olinda Alpha Landfill and no hazardous wastes will be disposed of in this landfill under the proposed project. The existing landfill design, including methane gas collection and groundwater monitoring facilities, would ensure that the landfill is operated in a safe and sanitary manner. Therefore, the proposed expansion will not result in impacts related to hazardous emissions within one-quarter mile of a school near Olinda Alpha Landfill.

Would the project: (d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Olinda Alpha Landfill project site is not listed as a hazardous materials site. The landfill accepts only Class III municipal solid wastes.

Would the project: (e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Olinda Alpha Landfill is not within an airport land use plan or within two miles of a public airport or public use airport based on review of area maps. Therefore, the proposed project will not result in adverse impacts related to aviation safety hazards for people residing or working in the project area.

Would the project: (f) For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips in the immediate vicinity of Olinda Alpha Landfill. Therefore, the proposed project would not result in significant adverse impacts related to safety hazards for people residing or working in this area.

Would the project: (g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evaluation plan?

No Impact. The City of Brea has an Emergency Response Plan and an Emergency Evacuation Plan which was adopted in 1991. An updated Emergency Response and Evacuation Plan were approved by the State in December 2003, and will be updated by the City of Brea in January 2004. The City of Brea does not service unincorporated areas of Orange County. However, the Olinda Alpha Landfill designated evacuation routes include streets within the City of Brea.

Olinda Alpha Landfill is in unincorporated Orange County adjacent to the City of Brea. The County has adopted an Emergency Response Plan and an Emergency Evacuation Plan for all unincorporated areas. The Emergency Evacuation Plan was updated in October 2003 and the Emergency Response Plan will be updated in February 2004. The designated emergency routes from the landfill are through the City of Brea.

Would the project: (h) Expose people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact. The Olinda Alpha Landfill site is located within a Very High Fire Hazard Area as designated on the City of Brea General Plan Draft EIR, Wildland Fire Hazard Areas Map. There is a remote possibility of fire at Olinda Alpha Landfill from combustible refuse, vegetation or litter being ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles. However, this potential risk is addressed in the design and daily operations of this landfill. Landfilling under the proposed project is not anticipated to have a significant impact on the occurrence of wildland fires in the area.

The landfill may be subject to surface fires started by burning waste material deposited on the working landfill face. Should this occur, the fire would be limited to the materials deposited prior to the daily application of cover materials, as fire will not generally propagate through cover soil. The Orange County Fire Authority has procedures for the prevention of fires at waste disposal sites. Current practices at this landfill to reduce the potential for fire and for rapid control of fires, should they occur, include keeping fire extinguishers on-site, frequent site watering for dust control, on-site water storage, prohibiting smoking on-site, clearing vegetation and fire breaks.

All landfills contain combustible materials and insulating characteristics and can, under certain conditions, facilitate subsurface combustion. Subsurface fires can occur as combustible materials in refuse are heated, either through burial of hot loads with other refuse or through an aerobic decomposition process. Because combustion requires a continuous source of oxygen, subsurface fires can be controlled by avoiding air intrusion and maintaining proper balance of a landfill gas collection system. While open flames are not likely to occur during a subsurface fire, accelerated or sudden localized settlement of refuse and cover materials in the vicinity of the fire can occur. Although this localized settlement can affect landfill operations, potential subsurface fires would not result in any significant impacts to users of the landfill or the general public, as few persons have access to covered parts of a landfill.

Safety and health hazards such as fires or explosions could occur if landfill gas (LFG) containing methane or toxic gases is permitted to migrate into nearby buildings. The existing LFG control and monitoring system at the Olinda Alpha Landfill would reduce LFG migration and associated potential impacts associated with the proposed project to below a level of significance.

Would the project: (i) Include a new or retrofitted storm water treatment control Best Management Practice (BMP), (e.g. water quality treatment basin, constructed treatment

wetlands), the operation of which could result in significant environmental effects (e.g. increased vectors and odors)?

No Impact. The proposed project does not include the development of new or retrofitted stormwater control BMPs.

15. Public Services

Would the project: (a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (i) Fire protection?

Potential Significant Impact. The nearest fire station to Olinda Alpha Landfill is City of Brea Station #4, at 170 Olinda Place, off of Carbon Canyon Road. Station #4 is located less than two and a half miles southwest of the landfill.

Fires could be caused at the Olinda Alpha Landfill when combustible refuse, vegetation or litter in the landfill is ignited by sparks from vehicles, lighted cigarettes or matches thrown from vehicles or from tipping of hot or smoldering loads. The design and operation of the landfill incorporates fire safety requirements. In addition, the Olinda Alpha Landfill has regulatory mandates requiring extensive operational procedures for the prevention and control of fires. Equipment used in landfilling, such as earth movers and water trucks, would also be available for use in controlling and extinguishing fires on or adjacent to this landfill. The vertical and horizontal expansion at the landfill would result in a time extension in demand for fire protection associated with the increased life of the landfill under the proposed project. It is anticipated that personnel and equipment from Station #4 will be required to provide fire service to the landfill site for the duration of the proposed project.

Would the project result in need(s) for new/altered government facilities/services in (a)(ii) police protection?

No Impact. The nearest police station to Olinda Alpha Landfill is at 1 Civic Center Circle in the City of Brea, approximately five miles southwest of the landfill. No increase in traffic is expected due to the vertical and horizontal expansion of the landfill because the permitted tons per day will not change under the proposed project. The existing police services in the area would be adequate to meet the demand for police protection services under the proposed project. Therefore, the proposed project will not result in adverse impacts related to police services.

Would the project result in need(s) for new/altered government facilities/services in (a)(iii) schools?

No Impact. The proposed project will not adversely impact schools since no new population increases are associated with the expansion plan.

Would the project result in need(s) for new/altered government facilities/services in (a)(iv) parks?

Potential Significant Impact. The vertical and horizontal expansion of Olinda Alpha Landfill is proposed within the existing boundary of this site and will not impact any existing or planned trails. The landfill site is shown on the County of Orange Master Plan of Regional Recreational Facilities as a proposed regional park. No development plans have been adopted for the future regional park. However, the ultimate configuration of recreational uses on the site may be impacted due to the proposed project, but will not foreclose the recreational opportunity. It should be noted however, that the proposed project would extend the landfill's closure date by providing additional capacity and would therefore, delay the use of this site as a recreational facility.

The conceptual alignment for the Diamond Bar Trail is in the vicinity of the expansion within the landfill site boundary. However, the implementation of this conceptual trail alignment is not planned in then near future and most likely would be implemented after closure of the landfill. If this proposed tail is implemented prior to landfill closure, it could be located outside the landfill site or, if after the landfill closes, on the landfill site. Implementation of the proposed project at Olinda Alpha Landfill would not preclude the establishment of this regional trail and is considered a less than significant impact.

Would the project result in need(s) for new/altered government facilities/services in (a)(v) other public facilities?

No Impact. The proposed project will require some permit processing by the County of Orange. However, the proposed project is not anticipated to adversely affect the County's overall ability to provide permitting services Countywide. The proposed project will not result in an increase in the number of employees at the landfill or other changes which would result in the need for other new or altered government facilities or services such as libraries or jails. Therefore, the proposed project will not result in adverse impacts related to other governmental services.

16. Utilities and Service Systems

Would the project: (a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board; (b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

No Impact. The proposed project would not result in the construction of new or expanded water or wastewater treatment facilities. In addition, the project would not exceed wastewater treatment requirements.

Would the project: (c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

No Impact. The project would not result in the need for the off-site construction of new or expanded stormwater drainage facilities. With the development of the proposed project, the existing landfill stormwater collection system that consists of a series of drainage channels, berms, interceptor ditches and sedimentation basins would be extended to landfill expansion areas as appropriate. This would occur in areas already disturbed by landfill operations and would not result in any additional environmental impacts.

Would the project: (d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill would extend the use period of this landfill. Therefore, the proposed project will result in an increase in the total amount of water needed over time including offices, earthwork, dust control, on-site road construction and other on-site improvements. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of water currently used daily at the landfill. The existing water facilities and supplies are anticipated to be adequate to continue providing water to the landfill over the extended use period of Olinda Alpha Landfill under this proposed project. Therefore, the proposed project will not result in significant adverse impacts related to water treatment and distribution facilities.

Would the project: (e) Have adequate wastewater treatment capacity?

No Impact. The proposed vertical and horizontal expansion at Olinda Alpha Landfill will increase the use period of the landfill and will result in an increase in the total amount of sewage generated over the life of the landfill. However, the proposed expansion is not anticipated to result in a substantial increase in the amount of sewage currently generated daily at Olinda Alpha Landfill. The existing wastewater facilities are anticipated to be adequate to accommodate the additional sewage generated at Olinda Alpha Landfills over the extended use period of the landfill under the proposed project. Therefore, the proposed project will not result in significant adverse impacts related to sewer or septic systems.

Would the project: (f) disposable served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; (g) Comply with federal, state and local statutes and regulations related to solid waste?

No Impact. The proposed vertical and horizontal expansion will extend the use period of Olinda Alpha Landfill and will provide additional capacity for MSW. Therefore, the proposed project will not result in adverse impacts to MSW disposal.

Mandatory Findings

(a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife population to drop below self

sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history?

Potential Significant Impact. As described in the environmental analysis herein, the proposed project has the potential to degrade the environment. The proposed project will not substantially alter biological resources since the proposed horizontal expansion area of the Olinda Alpha Landfill previously has been disturbed. There are no waters of the U.S. or wetlands, endangered flora or fauna, or habitat conservation areas within the proposed expansion areas which are located entirely within the landfill property boundary . The proposed project would not result in any impacts to archaeological resources because the site has been previously disturbed by landfill operations.

There are no known historical resources on the proposed project site. Therefore, the proposed Olinda Alpha Landfill expansion will not result in any adverse impacts to historical resources.

(b). Does the project have possible environmental effects, which are individually limited but cumulatively considerable ("cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).

Potential Significant Impact. Implementation of the proposed project may result in cumulative impacts. These impacts will be considered in detail in the EIR.

(c). Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potential Significant Impact. Implementation of the proposed project may result in adverse environmental effects. These impacts will be evaluated in detail in the EIR.

Determination

Based upon the evidence in light of the whole record documented in the attached environmental checklist explanation, cited incorporations and attachments, I find that the proposed project:

The proposed project may have a significant effect on the environment which has not been previously analyzed. Therefore, an environmental impact report (EIR) is required.

5.0 NAMES OF PREPARERS

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6.0 REFERENCES

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Herrick, Craig, Safety Coordinator Representative. Public Facilities and Resources Department. County of Orange. Pers. comm., December 11, 2003.

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INTEGRATED WASTE MANAGEMENT DEPARTMENT
320 N. FLOWER STREET, SUITE 400
SANTA ANA, CALIFORNIA 92703

NOTICE OF PREPARATION

DATE: January 8, 2004 (Previously issued September 9, 2002)

SUBJECT: Notice of Intent to Prepare Draft Environmental Impact Report # 588

Project Title: Regional Landfill Options for Orange County (RELOOC) Strategic Plan-Olinda Alpha Landfill Implementation

Applicant: County of Orange Integrated Waste Management Department

Project Contact: Linda Hagthrop, Public Information Officer Phone: (714) 834-4176
Fax: (714) 834-4057

The County of Orange Integrated Waste Management Department (IWMD) has conducted an Environmental Analysis Checklist for the RELOOC Strategic Plan-Olinda Alpha Landfill Implementation project and has determined that an Environmental Impact Report (EIR) is necessary. The County of Orange IWMD will be the Lead Agency for the subject project and will prepare the EIR. In order for your concerns to be incorporated into the EIR, we request your input as to the scope and content of the environmental information. In the case of some agencies receiving this Notice, your agency must consider the EIR prepared by the County of Orange IWMD when considering a permit or approval for the project. Please restrict your comments to issues to be addressed in the EIR relevant to your agency's statutory responsibilities for the proposed project. The project description, location, a description of alternatives under review and an analysis indicating the probable environmental effects of the proposed action are contained in the attached materials. Interested individuals and groups also are invited to comment on the issues to be addressed in the EIR.

Please be advised that any written comments received in response to the Notice of Preparation (NOP) previously issued on September 9, 2002 will be retained and incorporated into the Draft EIR if we are requested to do so by the commentor. Otherwise, we encourage recipients of this reissued NOP to provide comments specifically on issues to be addressed in Draft EIR 588 for the amended project.

Pursuant to Section 21080.4 of CEQA, your response must be sent as soon as possible but *not later than 30 days after receipt of this notice.*

A public Scoping Meeting is scheduled for January 22, 2004 at Brea City Hall in the City Council chambers at 7:30 PM. All parties are invited to attend this meeting to provide comments and input on the contents of the Draft EIR for this project.

All parties that have submitted their names and mailing addresses will be notified if any significant changes in the proposed project occur. If you wish to be placed on the mailing list, please submit your name and mailing address to the contact person at the address below. If you have any questions or need additional information, please call the IWMD Project Contact at the number listed above. The mailing address is County of Orange, Integrated Waste Management Department, Office of Public Affairs, 320 North Flower Street, Suite 400, Santa Ana, CA 92703.

Submitted by:

_____
Ray Hull, RELOOC Project Manager

Attachment: Project Description and Alternatives
Initial Study

NOTICE OF PREPARATION
For Draft EIR 588

Regional Landfill Options for Orange County (RELOOC)
Strategic Plan - Olinda Alpha Landfill Implementation

1.0 INTRODUCTION

In compliance with the California Environmental Quality Act (CEQA), the County of Orange's Integrated Waste Management Department (IWMD) is preparing an Environmental Impact Report (EIR) to consider potential impacts from its proposed vertical and horizontal expansion of the Olinda Alpha Landfill. This Notice of Preparation (NOP) is being provided to Responsible Agencies, trustee agencies, federal, state and local agencies and other interested parties for the purpose of soliciting comments on the scope of the EIR and potential environmental impacts that may result from this proposed action.

2.0 BACKGROUND

2.1 REGIONAL LANDFILL OPTIONS FOR ORANGE COUNTY (RELOOC)

Strategic Planning

Strategic planning for municipal solid waste (MSW) needs in Orange County is the responsibility of the IWMD. The IWMD's mission is "…to meet the solid waste disposal needs of Orange County through efficient operations, sound environmental practices, strategic planning, innovation and technology." Regional Landfill Options for Orange County (RELOOC) is a short- and long-term strategic planning project initiated by IWMD in 1998 to address existing disposal system capabilities and future needs, and to develop viable short- and long-term solid waste disposal options. Following completion of the planning and feasibility phase of RELOOC, the Orange County Board of Supervisors selected the Strategic Plan (described below) as the preferred alternative to be evaluated in an EIR. The RELOOC Strategic Plan provides a framework for solid waste management over the next 40 years in the most cost-effective manner. The RELOOC Strategic Plan includes a two-phased approach to accomplishing this goal.

Phase I strategies include fully utilizing existing landfill system capacity by:

- Maximizing operational efficiency at existing landfills.
- Expanding FRB and Olinda Alpha landfills.
- Promoting diversion, recycling and market development with the public and haulers.
- Seeking to resolve community concerns related to the extended use of the existing landfills.
- Annually reviewing the RELOOC Strategic Plan and modifying it as appropriate in response to disposal industry trends and advances in technology.

Phase II strategies consist of a series of studies, which will:

- Determine if there is a need to increase the daily amount of solid waste permitted at the Prima Deshecha Landfill five years prior to the closure of the Olinda Alpha Landfill.
- Identify strategies to support, develop and implement feasible, viable alternative technologies or other approaches to maximize landfill capacity for possible consideration in future waste disposal agreements.
- Complete a study to determine the feasibility of expanding FRB Landfill into adjacent Round Canyon prior to re-negotiation of the 2017-2027 Waste Disposal Agreements.

The purpose of this EIR is to analyze potential impacts and provide environmental documentation for the implementation of the RELOOC Strategic Plan component to expand the Olinda Alpha Landfill, proposed as a Phase I strategy in the RELOOC Strategic Plan. A detailed discussion of the proposed project based on parameters developed pursuant to the Strategic Plan is provided below in Section 4.0.

The only other Phase I strategy component requiring CEQA analysis is the expansion of the Frank R. Bowerman (FRB) Landfill, which will be addressed in a separate EIR when the expansion plan for that site is better defined. A major landslide that occurred at the FRB Landfill in early 2002 has required extensive geotechnical investigation, landslide remediation design, biological resource evaluations and coordination/permitting with resource agencies in developing a remediation design for full development of the site. It is anticipated that the CEQA and resource agency approval process for the FRB Landfill will be lengthy. Since the Olinda Alpha and FRB components are independent of each other, a separate EIR will be prepared for the FRB Landfill expansion component of RELOOC Phase I once the full extent of the landslide remediation needs and its effect on the current master plan effort are known. In order to reduce further delays in implementing the overall RELOOC Phase I strategy, the implementation of the Olinda Alpha Landfill expansion is being proposed now.

The Phase II strategies are considered studies and are not subject to CEQA requirements. The Phase II strategies are considered long-term RELOOC program components and, if determined to be feasible as a result of future studies, may be selected for analysis in accordance with CEQA requirements at a later date during the RELOOC 40-year planning timeframe.

RELOOC Planning Process

The RELOOC planning process included the formation of a Steering Committee to provide policy guidance for the strategic planning process. The Committee's formation was developed in consultation with the County of Orange Waste Management Commission. Membership within the Steering Committee consisted of representatives from the:

- Orange County community at-large.
- City Managers Solid Waste Working Group.
- Landfill Host Cities (i.e., Brea, Irvine, San Juan Capistrano and San Clemente).
- Waste Management Commission.
- League of California Cities (Orange County Division).

- IWMD.
- County of Orange (County Executive Office).

The RELOOC Steering Committee directed the Consultant Team (comprised of landfill engineers, environmental experts and other individuals under contract with the IWMD) to evaluate a number of strategic planning options that would meet the short- and long-term RELOOC strategies. Key tasks assigned to the Consultant Team were:

- Identification of available options.
- Capacity analysis.
- Demand analysis.
- Economic analysis.
- Environmental impacts analysis.
- Evaluation (or goal achievement) matrix of options.
- Recommended Strategic Plan.

The RELOOC planning process involved extensive community and agency outreach and was an important element in the evaluation and selection of available options. In the ranking of options, community acceptance was one of five criteria used and was evaluated using a Community Involvement Program (CIP) developed specifically for RELOOC. The CIP and preliminary findings of the RELOOC Feasibility Study Report (FSR) were presented to the Orange County City Managers Association's Solid Waste Working Group (SWWG). As an outcome of input received from the SWWG and concurrence by the RELOOC Steering Committee, a phased approach to RELOOC developed. The phased approach to RELOOC was presented in a series of meetings and briefings to community groups, City Councils, Chambers of Commerce, and the community-at-large, primarily within the host cities affected by the phased approach. These meetings were conducted between August 23, 2001 and October 18, 2001. Based upon recommendations from the community, the SWWG and subsequent action by the RELOOC Steering Committee, a phased approach for the RELOOC Strategic Plan, previously discussed above, was selected by the County Board of Supervisors for CEQA analysis in May 2002.

In September 2002, an NOP for EIR 588 was circulated for public review that identified the RELOOC Phase I strategies. That NOP described vertical and horizontal expansions of the Olinda Alpha and FRB landfills based on preliminary information on the complex geological conditions at FRB Landfill available at that time scoping meetings were held in September, 2002 to receive public comments on the NOP for EIR 588. Since then, extensive work has occurred at the FRB Landfill to develop a landslide remediation design and, as discussed above, the approval process for that project is anticipated to be lengthy may take a number of years to complete. In order not to further delay the implementation of the Olinda Alpha Landfill expansion component of RELOOC Phase I, this EIR 588 is being prepared separate from an EIR to be prepared at a future date for the FRB Landfill expansion component of RELOOC Phase I. Each of these landfill expansion projects is independent of and does not alter the need for or impacts of the other.

2.2 COUNTY OF ORANGE SOLID WASTE DISPOSAL SYSTEM

Active Landfills and Former Refuse Disposal Stations

IWMD operates three MSW landfills strategically located throughout the County. Figure 1 shows the location of the three active landfills in Orange County (Olinda Alpha, Frank R. Bowerman and Prima Deshecha). Olinda Alpha Landfill serves northern Orange County. It also receives MSW from Los Angeles, San Bernardino and Riverside Counties. FRB Landfill serves the central area of the County and also receives MSW from southeastern Los Angeles County. FRB Landfill is the newest landfill in the system. Prima Deshecha Landfill serves the southern areas of Orange County and also receives MSW from cities in northern San Diego County and southern Los Angeles County. Importation of MSW from Los Angeles, San Bernardino and Riverside Counties will cease in 2015. At about that time, Olinda Alpha Landfill will need to import cover material if the landfill closure date is extended. It is anticipated that the truck trip reduction that occurs with the cessation of MSW importation at Olinda Alpha Landfill will offset the increase in truck trips required for the transport of cover material.

In addition to the management of the landfill disposal system, the IWMD is responsible for a range of activities at a number of former refuse disposal stations including the closed Coyote Canyon Landfill and the inactive Santiago Canyon Landfill that is currently going through final closure construction. A discussion of the three active landfills and the County's Landfill operations is provided herein.

Household Hazardous Waste Collection Centers

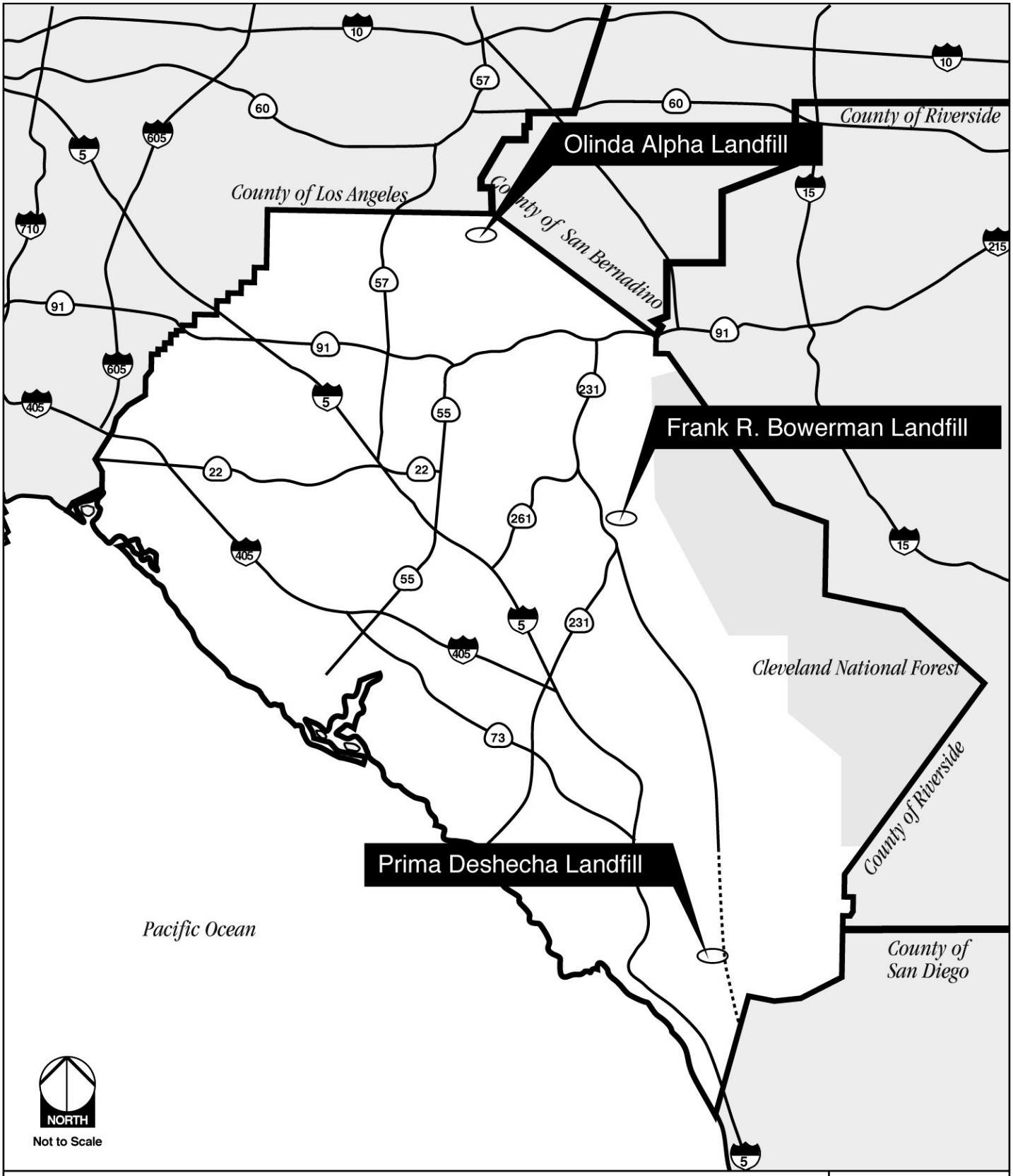
IWMD also operates four household hazardous waste (HHW) collection centers within the County that provide easily accessible disposal facilities for Orange County residents to properly dispose of HHW, thereby reducing the amount of HHW being improperly delivered to the landfills.

Landfill Operations

All of the County's active landfills are deep canyon, cut and cover facilities where the majority of waste is brought to the site from commercial haulers. To determine tipping fees, trucks are weighed by scales before entering the facility and then driven to a designated area of the landfill for waste disposal. The IWMD heavy equipment operators use compactors, bulldozers and large earthmovers to push and compact waste for ultimate burial and daily covering by soil or an approved alternative. No waste is left uncovered at the end of the working day.

Environmental Regulations

Landfill operation in the State of California is highly regulated and monitored by federal, state and local agencies. All Orange County landfills comply with the applicable California Code of Regulations (CCR) (primarily Title 27) and the Code of Federal Regulations, Title 40 (CFR), Parts 257 and 258 (Subtitle D) for landfills. The Olinda Alpha Landfill is a Class III landfill



Note: Project only includes landfill expansions at the FRB and Olinda Alpha Landfills; only implementation of bio-cell technology at Prima Deshecha Landfill

RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Regional Location of Orange County Landfills

Figure 1

permitted for the disposal of non-hazardous MSW. State law requires that landfills operate under the various regulatory requirements of the California Integrated Waste Management Board (CIWMB) that exercises its authority through the approval of Solid Waste Facilities Permits (SWFPs) issued by the Local Enforcement Agency (LEA). The LEA for Orange County landfills is the County of Orange Health Care Agency, Environmental Health Division.

Additionally, the Regional Water Quality Control Board (RWQCB) regulates landfill operations and designs to ensure protection of surface water and groundwater. The RWQCB exercises its authority through issuance of Waste Discharge Requirements (WDR). The South Coast Air Quality Management District (SCAQMD) also regulates landfill operations related to landfill gas emissions, subsurface gas migration, and fugitive dust control for Orange County landfills. Environmental monitoring of air, landfill gas (LFG) and groundwater is conducted at all the sites to detect LFG migration or groundwater contamination. A LFG extraction system and flare station are located at each site for LFG control. In addition, utilization of LFG for energy production currently is being conducted at Olinda Alpha and Prima Deshecha landfills and is in the development stages for the FRB Landfill. A groundwater remediation program including extraction wells and treatment currently is ongoing at Olinda Alpha Landfill. Additional LFG extraction wells and increased groundwater monitoring have been implemented at Prima Deshecha and FRB landfills to determine whether any groundwater remediation efforts also may be required at these sites.

Although the CIWMB has primary oversight and regulatory responsibilities for the landfills in Orange County and has designated the County of Orange Environmental Health Care Agency, Environmental Health Division as its LEA, landfills also are regulated through other laws enforced by agencies at the federal, state and local regulatory levels. In addition to the RWQCB and SCAQMD, these agencies include: U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (ACOE), California Department of Fish and Game (CDFG), Orange County Fire Authority (OCFA) and the County of Orange Public Facilities & Resources Department (PFRD). Adherence to applicable laws and regulations would be required as part of project approval and operating conditions.

Landfill System Capacity

A variety of factors are utilized to determine landfill system capacity including total air space, refuse volume, liner volume, refuse-to-soil ratio and other factors. Based upon these factors, IWMD's records show that the current permitted remaining refuse capacity for Olinda Alpha, FRB and Prima Deshecha landfills is 23.9, 49.2 and 42.8 million tons, respectively, as of June 30, 2003. The Prima Deshecha Landfill is currently undergoing a permit revision process that will increase its remaining refuse capacity from 42.8 million tons to 76.4 million tons (as of June 30, 2003).

The permitted daily tonnage limit for FRB Landfill is 8,500 tons per day (TPD) of refuse. However, under the Settlement Agreement with the City of Irvine, the FRB Landfill currently is allowed to accept an annual average of 7,785 TPD (as of December 2003) and can increase this average daily rate by 1.75% per year until it reaches the permitted maximum of 8,500 TPD. The permitted daily tonnage limit for Olinda Alpha Landfill is 8,000 TPD of refuse. However, under

the Memorandum of Understanding with the City of Brea waste disposal is limited to an annual average of 7,000 TPD. The permitted daily tonnage for Prima Deshecha currently is 4,000 TPD.

Existing Landfill Agreements and Permits

A number of landfill agreements and permits currently are in place with Orange County cities, waste haulers and regulatory agencies responsible for oversight of the County's landfills. In addition to those regulatory agency permits and city agreements described above, the County also has ten-year Waste Disposal Agreements (WDA) with contract cities that are subject to negotiation for renewal by June 2004. The negotiations for renewal will need to be extended since the county landfill system will not have been defined by June 2004. Approval of the Olinda Alpha Landfill expansion is a key component of the system implementation required for negotiation of WDAs for an additional ten-year period.

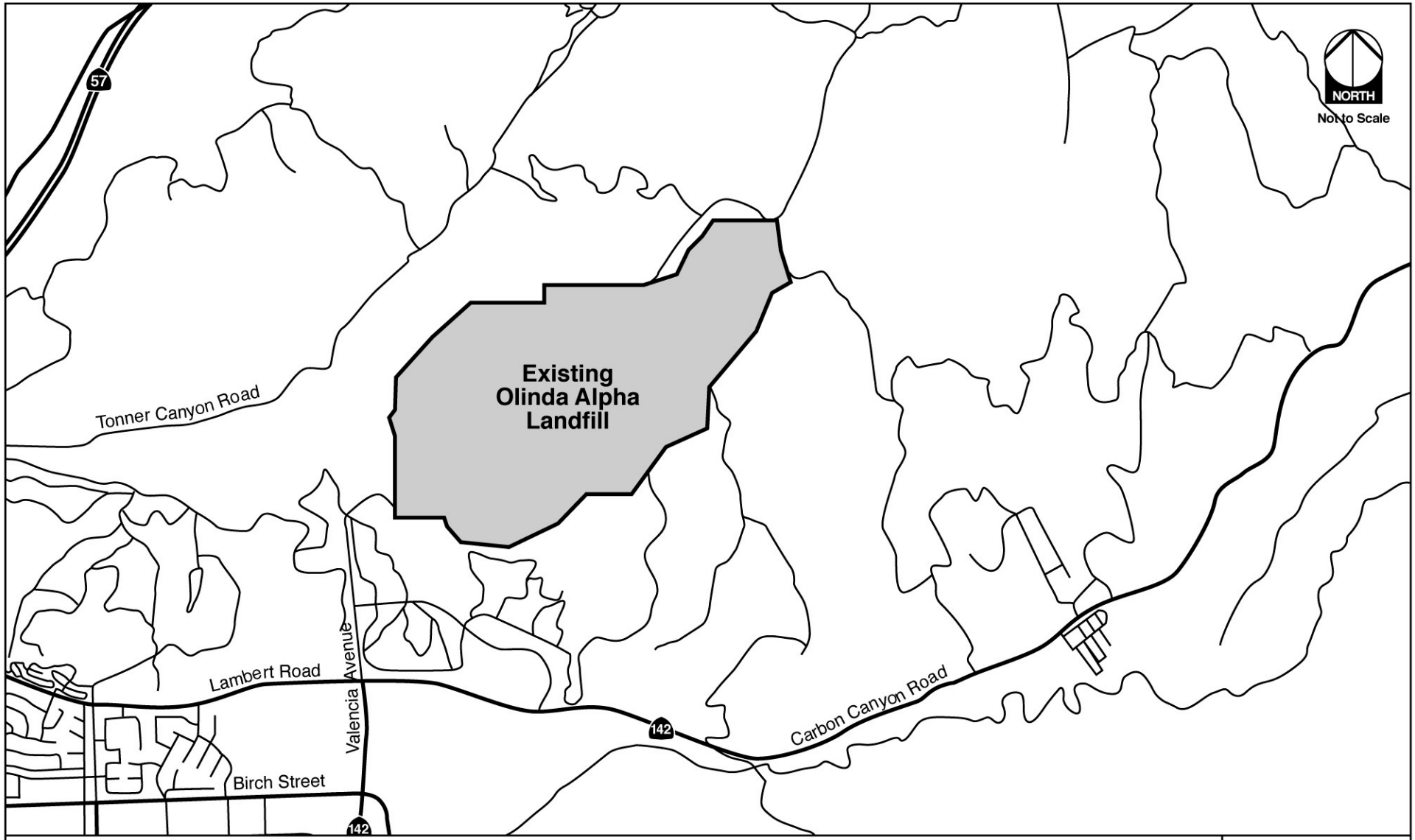
Existing Landfill Characteristics

Olinda Alpha Landfill

The Olinda Alpha Landfill is located at 1942 North Valencia Avenue near the City of Brea. This landfill opened in 1960. The site is comprised of 565 acres with approximately 420 acres permitted for refuse disposal. Access to the site is via Valencia Avenue as shown in Figure 2. The landfill is open Monday through Saturday from 6:00 A.M. to 7:00 A.M. for transfer trucks only and 7:00 A.M. to 4:00 P.M. for all commercial and non-commercial deliveries. Commercial haulers based both within and outside the County deliver to the site. Refuse disposal by private citizens is allowed and is limited to Orange County residents. Only municipal solid waste (MSW) is accepted at the landfill, although limited special wastes (i.e., tires) also are accepted. Hazardous materials such as asbestos, batteries, chemicals, paints, non-autoclaved medical waste and other substances considered hazardous are not accepted at this landfill.

A Memorandum of Understanding (MOU) between the County and the City of Brea limits daily waste disposal to an annual average of 7,000 tons per day (TPD). However, the Olinda Alpha Landfill's Solid Waste Facility Permit (SWFP) currently allows a daily maximum of 8,000 TPD of MSW. The IWMD is in the process of increasing the daily tonnage limit to 10,000 TPD for up to 36 days per year to allow for increased tonnage days. These increased tonnage days would be floating (not designated) and by the end of the year all 36 days may not be used. Unused floating days would not roll over to the next year. It is anticipated that most of the increased tonnage days will fall immediately preceding or following a holiday. The annual average TPD at the Olinda Alpha Landfill will remain at 7,000 TPD.

The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is also subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and the SCAQMD to assure compliance with applicable regulations. The current closure date for the landfill would be December 2013.



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Olinda Alpha Landfill Location Map

Figure 2

Frank R. Bowerman Landfill

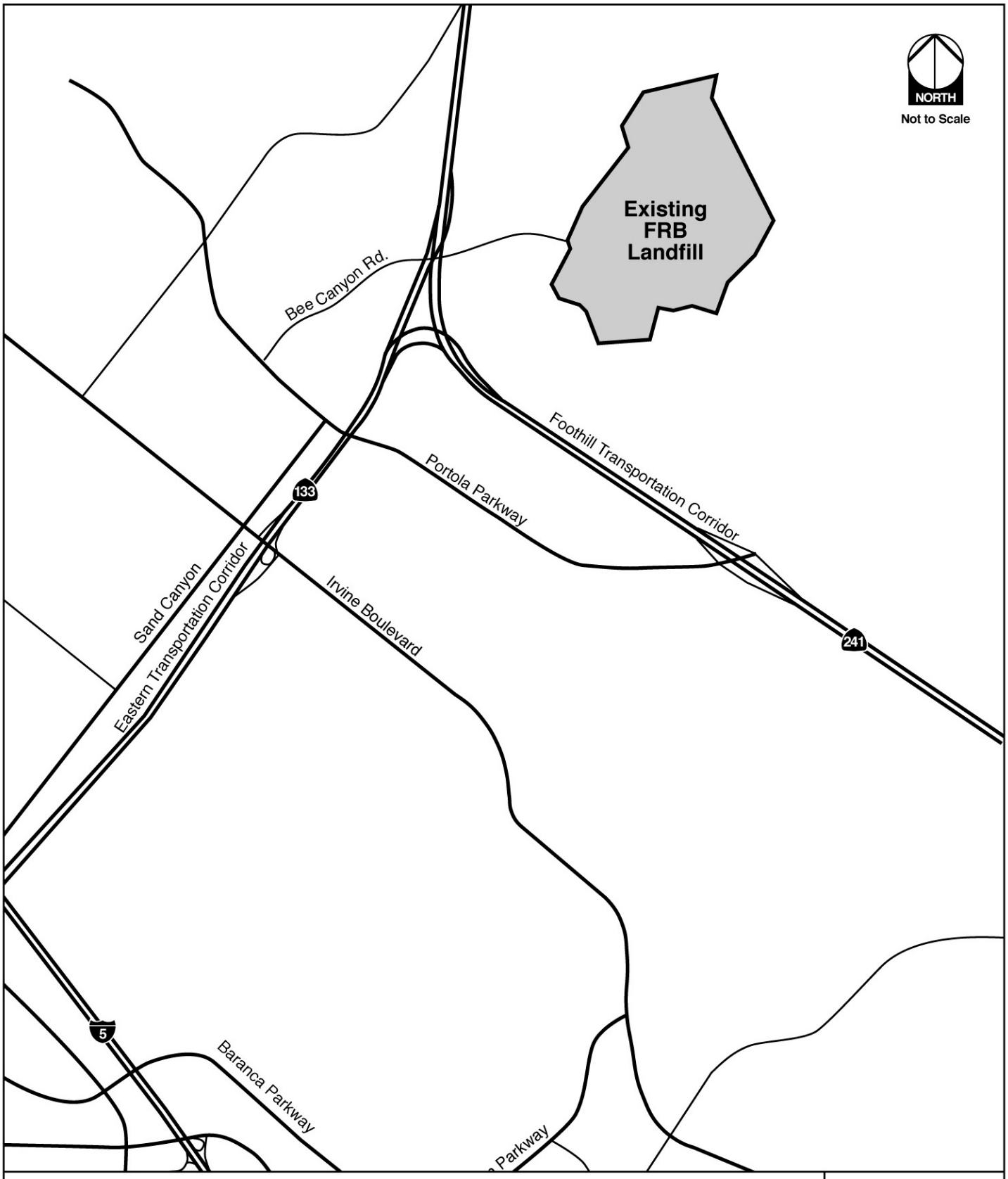
As shown in Figure 3, FRB Landfill is located at 11002 Bee Canyon Access Road in the City of Irvine. Access is available from the Santa Ana Freeway, (Interstate 5, I-5) or the San Diego Freeway (Interstate 405, I-405). The major cross streets are Sand Canyon and Portola Parkway. The facility is open Monday through Saturday, 7:00 A.M. to 4:00 P.M. for all commercial customers. Transfer trucks only are permitted from 4:00 P.M. to 5:00 P.M. Only MSW from commercial haulers and vehicles operating under commercial status are accepted at this landfill. Commercial status is verified by either showing a business license or current tax return to a fee booth attendant or participating in the County's deferred payment account process. Hazardous materials such as asbestos, batteries, chemicals, paints, medical waste and other substances considered hazardous are not accepted at this landfill.

Under the Settlement Agreement with the City of Irvine, the FRB Landfill is currently allowed to accept an annual average of 7,785 TPD (as of December, 2003) and can increase this average daily rate by 1.75 percent per year until it reaches a daily maximum of 8,500 TPD. The current SWFP for the FRB Landfill allows for the maximum daily tonnage limit of 8,500 TPD, but the IWMD is in the process of increasing the SWFP daily tonnage limit to 10,625 TPD to allow for up to 36 days of increased tonnage; similar to that discussed above for the Olinda Alpha Landfill. The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and the SCAQMD to assure compliance with applicable regulations.

The FRB Landfill comprises approximately 725 acres with 341 acres permitted for refuse disposal. This landfill opened in 1990 and its current permit closure date is 2022 based on current operational assumptions for the future. A recent major landslide at the FRB Landfill affecting future disposal areas has caused IWMD to re-evaluate and re-design the site's Master Plan for future development. As previously discussed, a separate EIR will be prepared for the new FRB Master Plan so as not to further delay the Olinda Alpha Landfill expansion approval process. Expansion of the FRB Landfill is, therefore, not being evaluated as part of this EIR 588. Existing permit conditions at the FRB Landfill are assumed for this project description. The currently proposed end use after landfill closure is open space.

Prima Deshecha Landfill

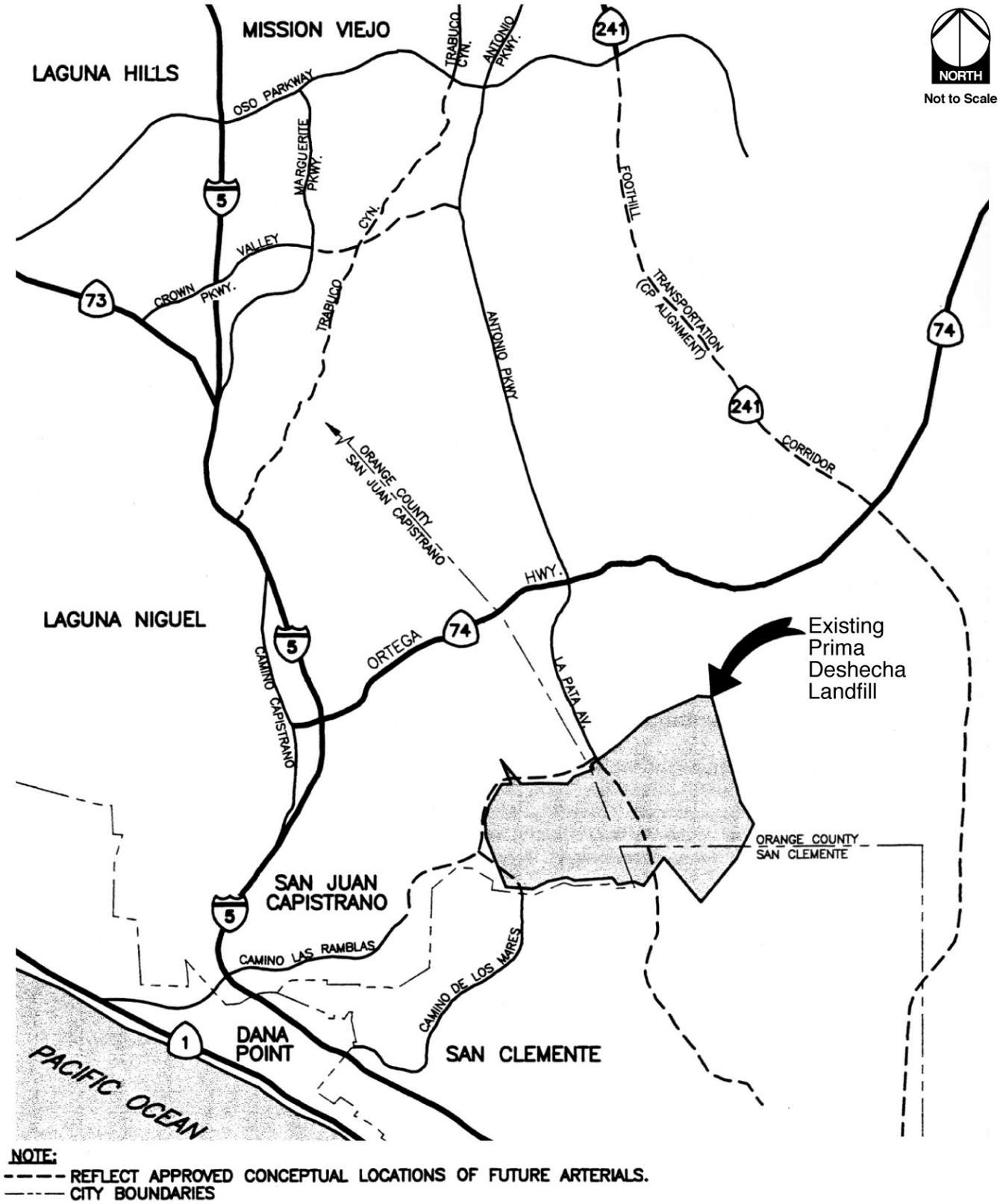
Prima Deshecha Landfill is located at 32250 La Pata Avenue as shown in Figure 4. Portions of the landfill property are in the City of San Juan Capistrano, the City of San Clemente and in County Unincorporated Area. The facility is open Monday through Saturday from 7:00 A.M. to 4:00 P.M. for all customers. However, commercial trucks and dump trucks are exclusively permitted from 4:00 P.M. to 5:00 P.M. MSW from commercial haulers and the public is accepted at this landfill. Public access is for Orange County citizens only while commercial haulers from within and outside the County deliver to the site. Commercial haulers from outside the County can deliver by Importation Agreement only. Commercial and public access is available from Ortega Highway and La Pata Avenue.



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Frank R. Bowerman Landfill Location Map

Figure 3



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Prima Deshecha Landfill Location Map

Figure 4

A limited amount of de-watered sewage sludge also is accepted at the landfill. Prima Deshecha Landfill is permitted to accept up to 4,000 TPD of MSW. The landfill is required to comply with numerous landfill regulations from federal, state and local regulatory agencies. The landfill is subject to regular inspections from the CIWMB and the Board's LEA, the RWQCB and SCAQMD to assure compliance with applicable regulations.

The Prima Deshecha Landfill comprises approximately 1,530 acres with 1,000 acres permitted for refuse disposal operations. The landfill was opened in 1976 and is scheduled to close in approximately 2067 based on the amended 2001 General Development Plan (GDP). The GDP for Prima Deshecha Landfill indicates a County regional park as its end use after landfill closure.

3.0 PROJECT OBJECTIVES

The objectives of the proposed project to expand the Olinda Alpha Landfill were derived from the RELOOC study goals and objectives and the RELOOC planning process and are as follows:

- Define future waste disposal system by 2004 to provide a basis for renegotiation of waste disposal agreements with cities.
- Ensure that the short-term disposal needs of the County's Solid Waste System are met.
- Maximize capacity of the existing landfill.
- Ensure adequate revenue and maintain local control of waste disposal to provide consistent and reliable public fees/rates.
- Maintain efficient, cost effective and high quality IWMD operations.
- Minimize adverse environmental impacts.

4.0 PROJECT DESCRIPTION

Purpose of the Project

The Regional Landfill Options for Orange County effort is a long-range strategic planning program initiated by the County of Orange's IWMD. The purpose of RELOOC is to assess the County's existing disposal system capabilities and develop viable short and long-term solid waste disposal options for the County. As part of that endeavor, the County is considering a number of short-term improvements to existing municipal solid waste landfills operated by the County's IWMD. The proposed project includes the vertical and horizontal expansion of the Olinda Alpha Landfill to meet the County's short-term solid waste disposal needs.

The draft EIR will analyze the potential environmental impacts associated with the continued operation of the Olinda Alpha Landfill from 2013 to the estimated horizon year 2021. The potential environmental impacts associated with the current landfill operations through 2013 were analyzed in the Final EIR for the North County Landfill and Alternatives Technology Study (NOCLATS).

Proposed Modifications

The proposed project includes both a vertical and horizontal expansion of Olinda Alpha Landfill disposal prism. No change in the landfill property boundary is proposed. As proposed, the height of Olinda Alpha Landfill would be increased from its current permitted level of 1,300 feet above mean sea level (MSL) to 1,415 feet above MSL or a net vertical increase of 115 feet. The horizontal expansion would include landform modifications to the northeast part of the landfill site. This modification would expand the existing refuse footprint approximately 33 acres within the existing property boundary of the Olinda Alpha Landfill. The horizontal expansion would occur only in areas that have already been disturbed by landfill operations. Figure 5 shows the current permitted vertical and horizontal limits of Olinda Alpha Landfill. Figure 6 shows the proposed limits of the vertical and horizontal expansions at the landfill under the proposed project. The expanded landfill would ultimately accommodate disposal of an additional 12.3 million tons (MT) of MSW (as of 2003) and would extend the life of the landfill from its permitted closure date of 2013 to approximately 2021, based on current population projections, daily tonnage, compaction densities, approved landfill elevations and existing disposal technologies. The proposed project would not result in any increase to either the Maximum Daily Permitted Tonnage or the annual average daily tonnage limits for the landfill.

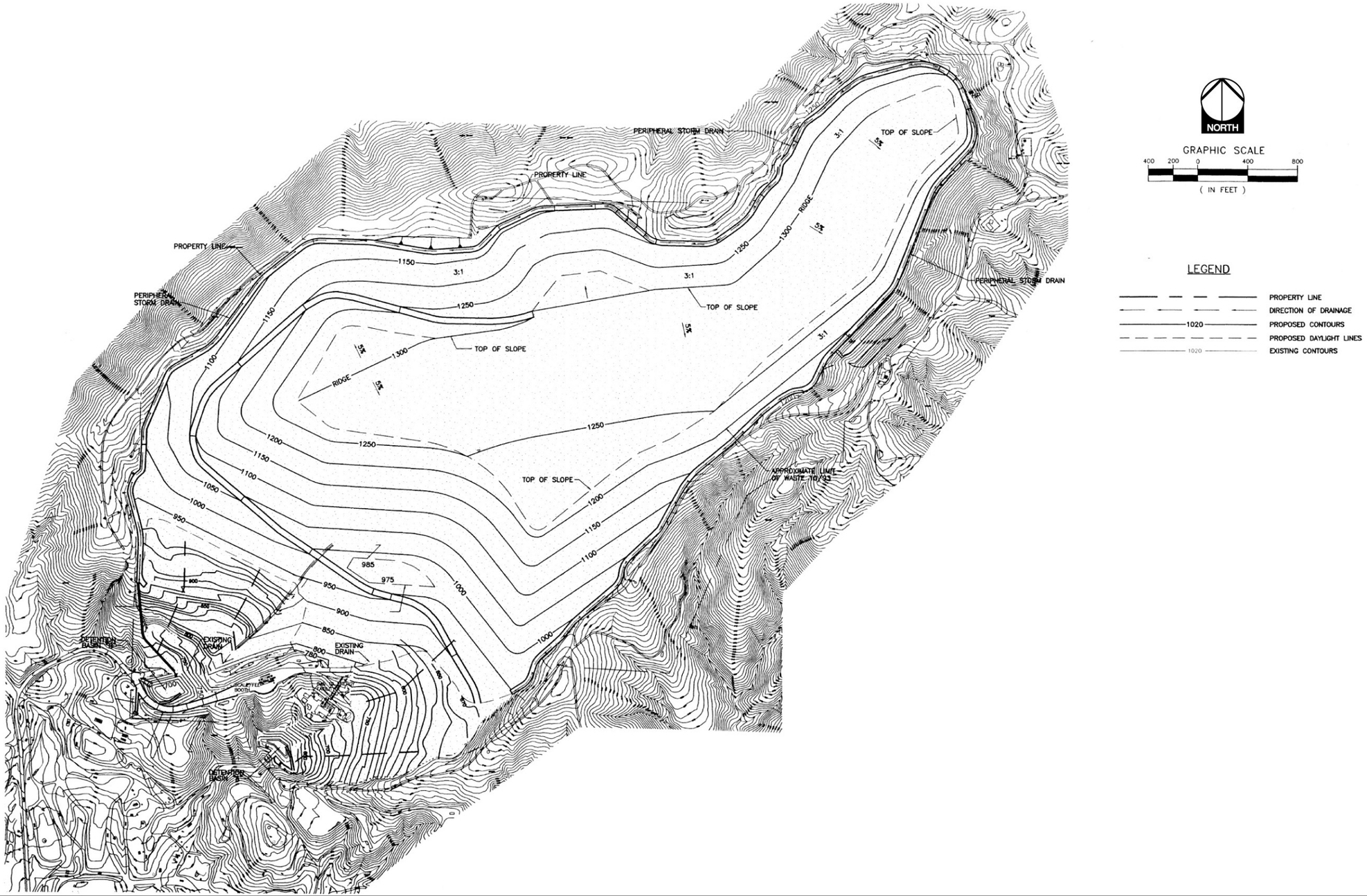
Phasing

The expansion of the Olinda Alpha Landfill would be implemented in phases and would not disturb all parts of the landfill sites at once. These phased areas of development currently are being evaluated and will be provided in the EIR.

On-site soil to be utilized for daily cover, road construction and other related uses is available at the Olinda Alpha Landfill through closure in 2013; the site currently accepts dirt and continues to stockpile on-site for future cover use beyond 2013. When on-site soil for cover is depleted at the Olinda Alpha Landfill, soil will need to be imported to the site. Truck traffic associated with soil import is anticipated to be less than or equal to import refuse truck traffic, which will cease in 2015. Fill and cover techniques at the landfill would be similar to the methods currently employed. Waste would be deposited, compacted and covered daily using appropriate landfilling methods.

Waste Composition

The waste composition at the Olinda Alpha Landfill under the proposed project would not differ from that currently received at this landfill. Non-hazardous MSW would comprise the waste stream and existing screening safety mechanisms would continue to be employed to ensure that hazardous materials are not accepted. Access to Olinda Alpha Landfill would remain unchanged, with access provided via Valencia Avenue. The total number of trips per day to the landfill for MSW disposal would not increase under the proposed project because the permitted daily tonnage accepted at Olinda Alpha Landfill would not increase compared to existing conditions. The additional traffic associated with soil import for cover use at Olinda Alpha Landfill by the year 2017 would be offset by the cessation of refuse importation.

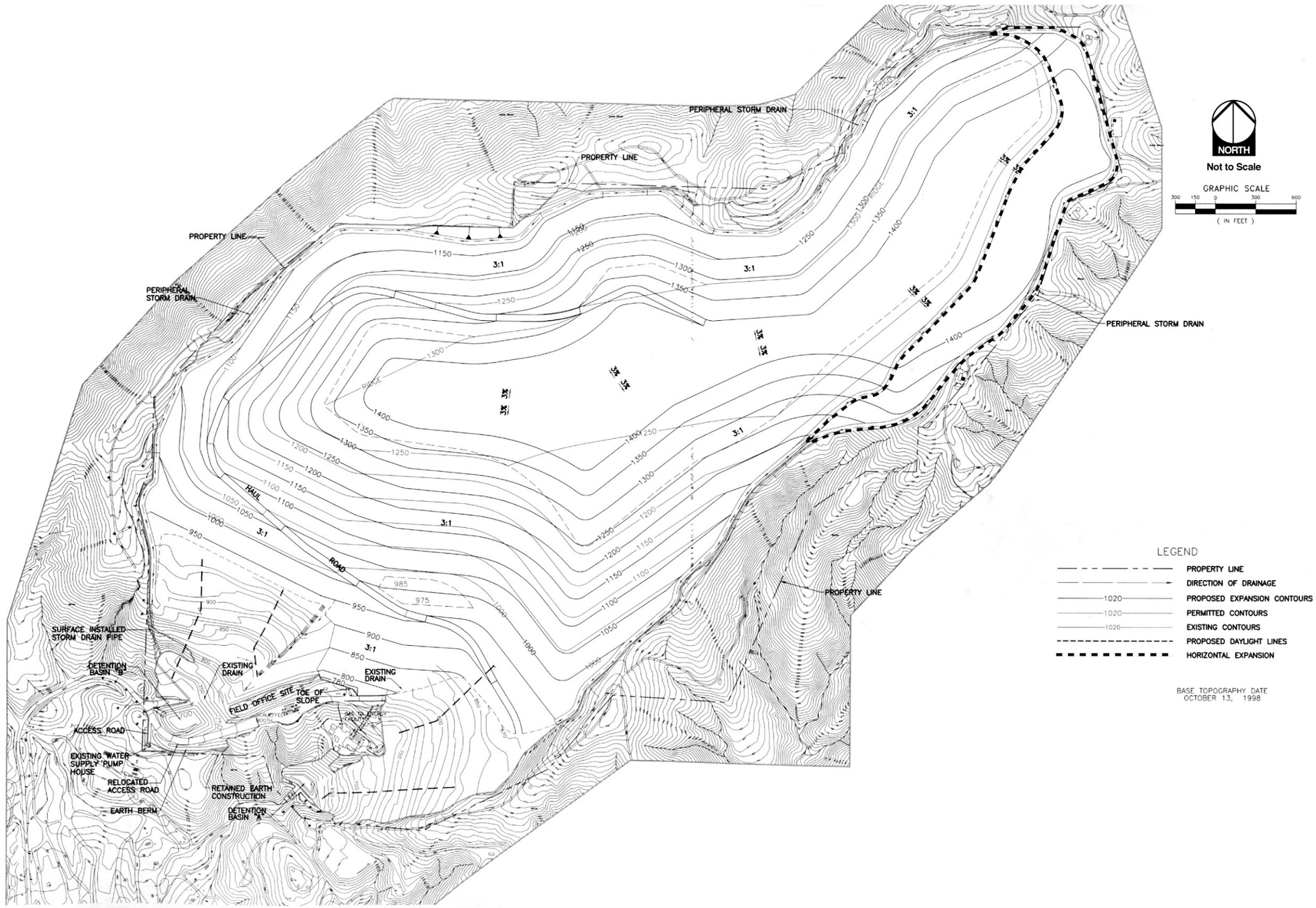


Source: Bryan A. Stirrat & Associates

RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Final Grading Plan (Permitted - 1996)

Figure 5



RELOOC Strategic Plan - Olinda Alpha Landfill Implementation

Proposed Expansion Plan Map

Figure 6

Other Project Features

The project may require that additional buildings and structures be constructed at the Olinda Alpha Landfill and may include additional gas control facilities. However, the number of employees at the landfill will not change with implementation of the proposed project. Employees would continue to perform landfill operations including administration, landfill cover operations and other landfill-related operations. The number and types of equipment utilized at the Olinda Alpha Landfill also would remain unchanged. The operating schedule at the Olinda Alpha Landfill would remain unchanged after implementation of the proposed project.

Surface water drainage systems, landfill gas collection and control systems, and leachate collection and recovery systems will be expanded, as necessary, to accommodate expansion of the Olinda Alpha Landfill.

5.0 ALTERNATIVES CONSIDERED

Section 15126.6(a) of the CEQA Guidelines indicates that "…an EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Further, Section 15126(c) of the CEQA Guidelines notes, "…the range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects."

The alternatives to the proposed project, which would meet most of the defined project objectives, are described in the section following the No Project (No Action) Alternative:

5.1 ALTERNATIVE 1 - NO PROJECT (NO ACTION)

The No Project Alternative would include no action by the County of Orange. Under this Alternative, neither the vertical nor horizontal expansion at the Olinda Alpha Landfill would occur. All three County landfills would operate at their existing permitted capacities with no increase in long-term physical capacity or daily tonnage received at each respective landfill. These landfills would continue to operate based on their permitted capacity and closure dates. As such, under this Alternative, the Olinda Alpha Landfill would continue to receive up to an annual average of 7,000 TPD of MSW under an MOU between the City of Brea and IWMD and would operate until its permitted closure date of 2013. Under this Alternative importation of waste into the Orange County disposal system will end in 2013. Upon its closure, approximately 2,500 TPD of MSW, which is in excess of what could be accommodated at the FRB and Prima Deshecha landfills, would have to be accommodated at landfills outside of Orange County, since no increases in daily tonnage at FRB or Prima Deshecha landfills are assumed under the No Project Alternative. The projected excess TPD of MSW to be exported out of County is based on population projections for the system demand by 2021 and allowances for daily peak refuse inflow rates. Out-of-County landfills would have to be permitted to accept the excess tonnage

from Orange County and may include El Sobrante Landfill in Riverside County and/or the Mid-Valley Landfill in San Bernardino County.

5.2 ALTERNATIVE 2 – TWO LANDFILL SYSTEM IN 2013 (PRIMA DESCHECHA DAILY TONNAGE INCREASE)

Assumptions

- Increase permitted TPD at Prima Deshecha Landfill to a maximum daily limit of 5,000 tons per day TPD and a daily maximum of 6,250 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- TPD at FRB Landfill remains at 8,500 TPD, as an annual average and 10,625 TPD as a daily maximum for increased tonnage days.
- No expansion at Olinda Alpha Landfill
- County importation at all landfills ceases in 2013.

This Alternative would include increasing the current maximum TPD at Prima Deshecha Landfill from 4,000 to 5,000 TPD as an annual average when Olinda Alpha Landfill closes at its permitted closure date of 2013. This increase would accommodate projections for the system demand in the EIR estimated horizon year 2021 based on forecasted population growth. A maximum daily TPD of 6,250 also is proposed to allow for up to 36 increased tonnage days anticipated mostly to fall on days immediately preceding or following a holiday. The FRB Landfill's permitted TPD received would remain unchanged at 8,500 TPD as a maximum daily limit and 10,625 TPD for 36 increased tonnage days.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of the County would cease in 2013 when there is no longer capacity in the system to accommodate imported waste. Prima Deshecha Landfill's 2001 General Development Plan remaining refuse capacity would remain unchanged at 77.6 MT (as of January 2002). However, the incremental increase of Prima Deshecha's in-flow waste stream from 4,000 to a maximum daily limit of 5,000 TPD and a maximum daily limit of 6,250 TPD for 36 increased tonnage days would accelerate its anticipated closure date from 2067 to approximately 2056 based on current population projections and existing disposal technologies. The accelerated closure date to 2056 results in a net reduction of 11 years.

Under this alternative, the number of truck trips to Prima Deshecha Landfill would increase although the duration of the trips would be reduced since the life of the landfill would be shortened.

Under this Alternative, the County's MOU with the Cities of San Juan Capistrano and San Clemente would need to be amended prior to 2013 to provide for the increase in annual average and maximum daily tonnages. Similarly, permits currently in-place with the CIWMB and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended.

5.3 ALTERNATIVE 3 – TWO LANDFILL SYSTEM IN 2013 (FRANK R. BOWERMAN DAILY TONNAGE INCREASE)

Assumptions

- Increase permitted TPD at FRB Landfill to a maximum daily limit of 9,500 TPD and a daily maximum of 11,875 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- TPD at Prima Deshecha Landfill remains at a maximum daily limit of 4,000 TPD and is increased to allow for a daily maximum 5,000 TPD for 36 increased tonnage days when Olinda Alpha Landfill closes in 2013.
- No expansion at Olinda Alpha Landfill.
- County importation at all landfills ceases in 2013.

This Alternative would include increasing the current annual average TPD at FRB Landfill from 8,500 TPD to 9,500 TPD when Olinda Alpha Landfill closes on its permitted closure date in 2013. This increase would accommodate projections for the system demand in the EIR horizon year of 2021 based on forecasted population growth. A maximum daily TPD of 11,875 is also proposed to allow for up to 36 increased tonnage days anticipated to fall mostly on days immediately preceding or following a holiday. The Prima Deshecha Landfill's permitted TPD would remain unchanged at 4,000 TPD as an annual average and would be increased to allow for a daily maximum of 5,000 TPD to allow for up to 36 increased tonnage days anticipated to fall mostly on days immediately preceding or following a holiday.

Under this Alternative, no expansion or extension of Olinda Alpha Landfill's closure date would occur. All importation of waste from out of County would cease in 2013 when there no longer is capacity in the system to accommodate imported waste.

At present, the permitted closure date of the FRB Landfill is 2022. This alternative would accelerate the closure date to 2021 based on current population projections and existing disposal technologies. This accelerated closure date for the FRB Landfill just meets the horizon year goal of 2021 for this EIR. The accelerated closure date to 2021 results in a net reduction of one (1) year. Under this alternative, the number of truck trips to the FRB Landfill would increase although the duration of the trips would be reduced since the life of the landfill would be shortened by one year.

Under this Alternative, the County's existing Settlement Agreement with the City of Irvine would need to be amended prior to 2013 to provide for the increased tonnages in annual average and maximum daily tonnages. The County's MOU with the Cities of San Clemente and San Juan Capistrano would also need to be amended for an increase in the maximum daily tonnage. Similarly, permits currently in-place with the CIWMB and other regulatory agencies with jurisdictional oversight for the landfill would need to be amended.

6.0 RESPONSIBLE AGENCIES

The agencies listed below have oversight over the project or may be responsible for issuing permits for the proposed project.

Federal Agencies

- United States Environmental Protection Agency (EPA).

State Agencies

- California Integrated Waste Management Board (CIWMB).
- California Water Resources Control Board (CWRCB).

Regional Agencies

- Regional Water Quality Control Board - Santa Ana Region (RWQCB).
- South Coast Air Quality Management District (SCAQMD).

County Agencies

- Orange County Solid Waste Local Enforcement Agency (LEA).
- Orange County Health Care Agency (OCHCA).
- Orange County Board of Supervisors (OCBS).
- Orange County Fire Authority (OCFA).
- Orange County Planning Department (OCPD).

City Agencies

- City of Brea.

GLOSSARY OF ACRONYMS

ACOE	United States Army Corps of Engineers
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CIP	Community Involvement Program
CIWMB	California Integrated Waste Management Board
EIR	Environmental Impact Report
FRB	Frank R. Bowerman
FSR	Feasibility Study Report
HHW	household hazardous waste
I-5	Santa Ana Freeway, Interstate 5
I-405	San Diego Freeway, Interstate 405
IWMD	Integrated Waste Management Department
LEA	Local Enforcement Agency
LFG	Landfill gas
MCY	million cubic yard
MOU	Memorandum of Understanding
MSL	mean sea level
MSW	municipal solid waste
MT	million tons
NOP	Notice of Preparation
OCBS	Orange County Board of Supervisors
OCFA	Orange County Fire Authority
OCHCA	Orange County Health Care Agency
OCLEA	Orange County Health Care Agency, Environmental Health Division
OCPD	Orange County Planning Department
PFRD	Orange County Public Facilities & Resources Department
RELOOC	Regional Landfill Options for Orange County
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SWFP	Solid Waste Facilities Permit

SWWG	Orange County City Managers Association's Solid Waste Working Group
TPD	tons per day
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WDA	Waste Disposal Agreements
WDR	Waste Discharge Requirements

ATTACHMENT B

DISTRIBUTION LIST FOR THE DRAFT EIR

Library	Branch	Address	City	State	Zip Code
Orange County Public Library	Brea Branch	1 Civic Center Circle	Brea	CA	92821
Orange County Public Library	Irvine/Heritage Park Regional	14361 Yale Avenue	Irvine	CA	92604
Orange County Public Library	Irvine/University Park	4512 Sandburg Way	Irvine	CA	92612
Orange County Public Library	San Clemente	242 Avenida Del Mar	San Clemente	CA	92672
Orange County Public Library	San Juan Capistrano Regional	31495 El Camino Real	San Juan Capistrano	CA	92675
UCI Main Library	Science Library	Recieiving Dock, Building 520	Irvine	CA	92697
Orange County Public Library	Laguna Niguel Branch	30341 Crown Valley Parkway	Laguna Niguel	CA	92677
California State Library Fullerton	Library/Document Section	800 N. State College Blvd.	Fullerton	CA	92831-3599
Orange County Library	Dana Point Branch	33841 Niguel Road	Dana Point	CA	92629

tblNorthCountyPropertyOwners

ID	Organization	Address	City	State	Zip Code
15					
14					
6	Aera Energy LLC	3030 Saturn Street, Suite 101	Brea	CA	92821-6271
2	Boy Scouts of America	2333 Scout Way	Los Angeles	CA	90026-4912
11	Chevron/Texaco Corp.	6001 Bollinger Canyon Road	San Ramon	CA	94583
7	City of Industry Public Works	15651 East Stafford Street	City of Industry	CA	91744-3922
12	Merit Property Management, Inc	25910 Acero St, Suite 200	Mission Viejo	CA	92691
10	Neuvo Energy Company	1021 Main Street	Houston	TX	77002
9	PF&RD/Harbors, Beaches and Parks	300 N. Flower St.	Santa Ana	CA	92703
4	Shell Western E & P, Inc.	P.O. Box 11164	Bakersfield	CA	93389-1164
3	State of California	P.O. Box 942896	Sacramento	CA	94296-0001

Mailing List
Media

M	First Name	Last Name	Organization Name	Address	City	State	Postal Code
3	Pat	Brennan	Orange County Register	625 N. Grand Ave.	Santa Ana	CA	92701-
6	Eric	Carpenter	Brea Star Progress	1771 S. Lewis St.	Anaheim	CA	92805-
4	Peggy	Goetz	Irvine World News	2006 McGaw	Irvine	CA	92614-
2	Stuart	Pfeifer	LA Times	901 W Civic Center Dr, Suite 170	Santa Ana	CA	92701-
1	Fred	Swegles	Sun Post News	95 Del Mar	San Clemente	CA	92672-
5	Kelley	Tokarski	Capistrano Valley News	22481 Aspen Street	Lake Forest	CA	92630-1630

Company	Last Name	First N	Address	City	State	Zip Code	Telephone #
Solid Waste Association	Anthony	Phil	14101 La Pat Place, Suite 10	Westminster	CA	92683-	(714) 899-8020
C&N Waste Services	Arakelian	Nancy	2021 Business Center Drive, #11	Irvine	CA	92715-	(949) 752-2638
Taormina Industries	Ault	David	P.O. Box 309	Anaheim	CA	92815-	(714) 238-3300
R & S Dumping	Corneal	Steve	24002 Via Fabricante, Ste 225	Mission Viejo	CA	92691-	(949) 830-8884
Waste Management	Coyle	Bob	1800 S. Grand Ave.	Santa Ana	CA	92705-	(714) 480-2300
Tierra Verde Industries	Kazarian	Kris	P.O. Box 24	Irvine	CA	92650-0024	(949) 551-0363
Rainbow Disposal	Moffatt	Jerry	P.O. Box 1026	Huntington Beach	CA	92647-	(714) 847-3581
Park Disposal/EDCO Corp.	Ramirez	Efrain	P.O. Box 398	Buena Park	CA	90621-	(714) 522-3577
CR&R	Relis	Paul	11292 Western Ave.	Stanton	CA	90680-	(714) 826-9049
Federal Disposal Service	Shubin	Don	P.O. Box 118	Santa Ana	CA	92702-	(949) 542-7701
Ware Disposal Company	Ware	Judith	P.O. Box 8206	Newport Beach	CA	92658-	(714) 836-4694

tblWasteManagementCommission

Last Name	First Name	REL	Address	City	Stat	Zip Co	Telephone #	Fax
Bankhead	Don	☐	1231 W. Valencia Mesa Drive	Fullerton	CA	92832	(714) 738-6311	(714) 738-6758
Green	Cathy	☐	6151 Kimberly Drive	Huntington Beach	CA	92647	(714) 990-7718	(714) 536-5553
McGuigan	Pat	☑	5642 Keelson Ave.	Santa Ana	CA	92704	(714) 647-6900	(714) 647-6954
Paris	Russell	☐	8200 Westminster Blvd	Westminster	CA	92683	(714) 898-3311	(714) 897-2837
Dotson	Harry	☐	12291 Santa Rosalin Street	Garden Grove	CA	92841	(714) 379-9222	(714) 893-7946
Gomez	Jim	☐	201 E. La Habra Blvd	La Habra	CA	90631	(562) 905-9701	(562) 905-9781
O'Donnell	Tim	☑	1 Civic Center Circle	Brea	CA	92821	(714) 990-7710	(714) 990-2258
Hoesterey	Ron	☑	805 S. Sapphire Lane	Anaheim	CA	92807	(714) 997-9001	(714) 997-9103
Bilodeau	Denis	☐	2672 N. Vista Crest Rd.	Orange	CA	92867	(714) 974-3626	(714) 974-3616
Soto	Joe	☑	32400 Paseo Adelanto	San Juan Capistran	CA	92677	(949) 443-6318	(949) 493-1053
Wahner	Jim	☐	2911 Pemba Drive	Costa Mesa	CA	92626	(714) 540-1909	
Florentine	Anthony	☐	626 N. Mountain View Place	Fullerton	CA	92831	(714) 870-5278	(000) 000-0000
Opincar	Victor	☐	630 Mystic View	Laguna Beach	CA	92651	(949) 476-3301	(949) 497-5341
Dorey	Stephanie	☐	100 Avenidia Presidio	San Clemente	CA	92672	(949) 361-8200	(000) 000-0000
Beauman	John	☐	One Civic Center	Brea	CA	92821	(714) 990-7701	(714) 671-3689
Lehmann	Clark	☑	9166 Caladium Avenue	Fountain Valley	CA	92708	(714) 847-9872	
Dixon	Richard	☐	22365 El Toro Road, PMB 29	Lake Forest	CA	92630		

City Name	Last Name	First Nam	Address	City	State	Zip Code
City of Aliso Viejo	Norman	David	12 Journey	Aliso Viejo	CA	92656
City of Anaheim	Morgan	David	200 South Anaheim Blvd.	Anaheim	CA	92805
City of Brea	O'Donnell	Tim	1 Civic Center Circle	Brea	CA	92821
City of Buena Park	Beaubien	Greg	6650 Beach Blvd.	Buena Park	CA	90622
City of Costa Mesa	Roeder	Allan	77 Fair Drive	Costa Mesa	CA	92626
City of Cypress	Importuna	Patrick	5275 Orange Ave.	Cypress	CA	90630
City of Dana Point	Chotkevys	Douglas	33282 Golden Lantern, Suite 210	Dana Point	CA	92629
City of Fountain Valley	Kromer	Ray	10200 Slater Ave.	Fountain Valley	CA	92708
City of Fullerton	Meyer	Chris	303 W. Commonwealth	Fullerton	CA	92832
City of Garden Grove	Tindall	George	11222 Acacia Parkway	Garden Grove	CA	92840
City of Huntington Beach	Silver	Ray	2000 Main Street	Huntington Beach	CA	92648
City of Irvine	Hart	Allison	1 Civic Center Plaza	Irvine	CA	92623
City of La Habra	Bridenbecker	Brad	201 E. La Habra Blvd.	La Habra	CA	90633
City of La Palma	Standiford	Catherine	7822 Walker Street	La Palma	CA	90623
City of Laguna Beach	Frank	Kenneth	505 Forest Avenue	Laguna Beach	CA	92651
City of Laguna Hills	Channing	Bruce	25201 Paseo de Alicia, Suite 150	Laguna Hills	CA	92653
City of Laguna Niguel	Casey	Timothy	27801 La Paz Road	Laguna Niguel	CA	92677
City of Laguna Woods	Keane	Leslie	24264 El Toro Road	Laguna Woods	CA	92653
City of Lake Forest	Dunek	Robert	23161 Lake Center Drive, Suite 100	Lake Forest	CA	92630
City of Los Alamitos	Dominguez	Robert	3191 Katella Avenue	Los Alamitos	CA	90720
City of Mission Viejo	Joseph	Daniel	25350 Marguerite Parkway	Mission Viejo	CA	92692
City of Newport Beach	Bludau	Homer	3300 Newport Blvd.	Newport Beach	CA	92663
City of Orange	Rudat	David	300 E. Chapman Avenue	Orange	CA	92866
City of Placentia	D'Amato	Robert	401 E. Chapman Avenue	Placentia	CA	92870
City of Rancho Santa Margarita	Hart	D James	30211 Avenida de las Banderas, Suite 101	Rancho Santa Margarita	CA	92688
City of San Clemente	Scarborough	George	100 Avenida Presidio	San Clemente	CA	92672
City of San Juan Capistrano	Gibson	Pamela	32400 Paseo Adelanto	San Juan Capistrano	CA	92675
City of Santa Ana	Ream	David	20 Civic Center Plaza	Santa Ana	CA	92702
City of Seal Beach	Bahorski	John	211 8th Street	Seal Beach	CA	90740
City of Stanton	Wager	Jake	7800 Katella Avenue	Stanton	CA	90680
City of Tustin	Huston	William	300 Centenial Way	Tustin	CA	92780
City of Villa Park	Rodericks	George	14855 Santiago Blvd.	Villa Park	CA	92861
City of Westminster	Vestal	Don	8200 Westminster Blvd.	Westminster	CA	92683
City of Yorba Linda	Belanger	Terrence	4845 Casa Loma Avenue	Yorba Linda	CA	92886

tblBoardofSupervisors

Distr	Last Nam	First Name	Chair	Vice Chair	Address	City	State	Zip	Telephone #
1	Smith	Charles V.	☐	☐	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3110
2	Silva	James W.	☐	☐	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3220
3	Campbell	Bill	☐	☐	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3330
4	Norby	Chris	☐	☐	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3440
5	Wilson	Thomas W.	☑	☐	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3550

tblExecutiveAssistants

Distr	Last Name	First Name	Building	Address	City	State	Zip	Telephone #
1	Brown	Barbara	HOA	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3110
2	Zelaya	Delia	HOA	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3220
3	Joens	Christine	HOA	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3330
4	O Hare	Jessica	HOA	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3440
5	Veale	Holly	HOA	10 Civic Center Plaza	Santa Ana	CA	92701	(714) 834-3550

Maili	Homeowners Association	Organization Name	Address	City	State	Postal Code
160	HOA	North Hills Tennis & Swim Club	1012 Woodcrest	Brea	CA	92821-
20	Lordon Mgmnt	Villas at Rancho San Joaquin	1275 Center Court Drive	Covina	CA	91724-
151	HOA	Brea Corsican Villas	1290 N. Hancock St, Suite 103	Anaheim	CA	92807-
104	Cardinal Property Mgmnt	Garden Estates	1290 N. Hancock, Suite 103	Anaheim	CA	92807-
146	HOA	Amber Hill	1439 Stratford Street	Brea	CA	92821-
143	HOA	El Camino Glen	14791 Dahlquist	Irvine	CA	92604-
139	Alden Mgmnt Group	Northwind Square	150 Paularino, Suite 194	Costa Mesa	CA	92626-
148	HOA	Ash Street Cottages	1655 E. 6th St, Suite A1-B	Corona	CA	92879-
150	HOA	Birchview Brea	1655 E. 6th St, Suite A1-B	Corona	CA	92879-
67	Keystone Pacific	Arbor Crest	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
68	Keystone Pacific	Somerton	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
69	Keystone Pacific	Canyonview	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
70	Keystone Pacific	Northwood Villas	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
71	Keystone Pacific	The Springs	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
72	Keystone Pacific	Turtle Rock Ridge	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
66	Keystone Pacific	Collage	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
74	Keystone Pacific	Brio	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
75	Keystone Pacific	Positano	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
73	Keystone Pacific	University Town Center	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
65	Keystone Pacific	Lexington	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
64	Keystone Pacific	GeorgeTown	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
60	Keystone Pacific	Autumn Glen	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
63	Keystone Pacific	Lanes End	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
59	Keystone Pacific	Cypress	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
58	Keystone Pacific	Ashford Place	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
57	Keystone Pacific	Harvard Square	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
56	Keystone Pacific	Westpark Village 1	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
55	Keystone Pacific	Westpark Tiemp	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
19	Keystone Pacific	Rancho San Joaquin	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
62	Keystone Pacific	Trailwood	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
61	Keystone Pacific	Meadowood	16845 Von Karman, Suite 200	Irvine	CA	92606-4920
138	Keystone Pacific	Northwind	16845 Von Karman, Suite 200	Irvine	CA	92606-
105	EMMONS	Hollygrove	17300 Redhill, Suite 210	Irvine	CA	92614-

Please note - one notice sent to each management company or address, not each org. name

Maili	Homeowners Association	Organization Name	Address	City	State	Postal Code
109	EMMONS	Vista	17300 Redhill, Suite 210	Irvine	CA	92614-
112	EMMONS	Turtle Rock Park and Recreatio	17300 Redhill, Suite 210	Irvine	CA	92614-
23	HOA	Parkwood Apartments	17560 Jordan	Irvine	CA	92612-
142	Optimum Mgmnt	The Lakes	17731 Irvine, Suite 212	Tustin	CA	92780-
14	Western Property Mgmnt	Willows	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
136	Western Property Mgmnt	Deerfield Apartments	1820 E. Garry, Suite 104	Santa Ana	CA	92705-____
96	Western Property Mgmnt	Lakeglen	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
102	Western Property Mgmnt	Sundance Park	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
101	Western Property Mgmnt	Woodbridge Estates	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
100	Western Property Mgmnt	Lakeview	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
99	Western Property Mgmnt	Fairfield	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
98	Western Property Mgmnt	Ivyhill	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
97	Western Property Mgmnt	Lakeside	1820 E. Garry, Suite 104	Santa Ana	CA	92705-
158	HOA	Glenbrook	1821 E. Greenbriar Lane	Brea	CA	92821-
43	Total Property Mgmnt	Orange Tree Condos	2 Corporate Park, Suite 200	Irvine	CA	92696-
129	Total Property Mgmnt	Woodside	2 Corporate Park, Suite 200	Irvine	CA	92606-
130	Total Property Mgmnt	College Park	2 Corporate Park, Suite 200	Irvine	CA	92606-
131	Total Property Mgmnt	Walnut Square	2 Corporate Park, Suite 200	Irvine	CA	92606-
115	Total Property Mgmnt	Turtle Rock Crest	2 Corporate Park, Suite 200	Irvine	CA	92696-
108	Total Property Mgmnt	Canyon Creek	2 Corporate Park, Suite 200	Irvine	CA	92606-
44	Total Property Mgmnt	Centerview	2 Corporate Park, Suite 200	Irvine	CA	92696-
162	HOA	Olinda Village	210 Copa de Oro	Brea	CA	92823-
82	Transpacific Mgmnt	Lake Ridge	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
17	Trans Pacific Mgmnt	Yale Estates (East)	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
9	Trans Pacific Mgmnt	Village Glen	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
78	Transpacific Mgmnt	Alders	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
79	Transpacific Mgmnt	Lake Ridge	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
81	Transpacific Mgmnt	Cambridge Court	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
83	Transpacific Mgmnt	Northwood Glen	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
84	Transpacific Mgmnt	Windwood	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
85	Transpacific Mgmnt	Windwood Glen	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
1	Trans Pacific Mgmnt	Laurels	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-
80	Transpacific Mgmnt	Turtle Rock Meadows	2112 E. Fourth, Suite 200	Santa Ana	CA	92705-

Maili	Homeowners Association	Organization Name	Address	City	State	Postal Code
147	HOA	The Arbors	217 S. Mandarin Dr.	Brea	CA	92821-
154	HOA	Brea Village	22 Mauchly	Irvine	CA	92618-
107	GoldenWest Property	Sunset Ridge	2323 W. Lincoln, Suite 219	Anaheim	CA	92801-
106	GoldenWest Property	Lakeshore	2323 W. Lincoln, Suite 219	Anaheim	CA	92801-
155	HOA	Country Club Park	2365 Raintree Drive	Brea	CA	92821-
27	HOA	Village Park	23726 Birtcher	Lake Forest	CA	92630-1771
26	HOA	Parkside Community	23726 Birtcher	Lake Forest	CA	92630-
29	HOA	Ridgeview	23726 Birtcher	Lake Forest	CA	92630-1771
117	HOA	Turtle Rock Pointe	23726 Birtcher	Lake Forest	CA	92630-
76	HOA	Chateauz	23726 Birtcher	Lake Forest	CA	92630-1771
5	HOA	Seasons	23726 Birtcher	Lake Forest	CA	92630-1771
8	HOA	Stonegate	23726 Birtcher	Lake Forest	CA	92630-1771
119	HOA	Oxford Court	23726 Birtcher	Lake Forest	CA	92630-
141	HOA	Park Paseo	25 Christamon West	Irvine	CA	92620-
152	HOA	Brea Sommerset	2561 E. Woodfield Dr	Brea	CA	92821-
164	HOA	Winding Way	259 Winding Lane	Brea	CA	92821-
53	Merit Property Maintainen	Smoketree	25910 Acero, Suite 200	Mission Viejo	CA	92691-
52	Merit Property Maintainen	Paseo Westpark	25910 Acero, Suite 200	Mission Viejo	CA	92691-
54	Merit Property Maintainen	Vista Vilare	25910 Acero, Suite 200	Mission Viejo	CA	92691-
51	Merit Property Maintainen	Westpark	25910 Acero, Suite 200	Mission Viejo	CA	92691-
35	Northpark Master Associa	Huntington	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
36	Northpark Master Associa	Brentwood	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
37	Northpark Master Associa	Saratoga	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
34	Northpark Master Associa	Terra Bella	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
33	Northpark Master Associa	Brisbane	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
38	Northpark Master Associa	Mendocino	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
39	Northpark Master Associa	Estancia Apartments	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
32	Northpark Master Associa	Cambria	27405 Puerta Real, Suite 230	Mission Viejo	CA	92691-
40	Northpark Master Associa	Solana Apartments	27405 Puerta Real, Suite 300	Mission Viejo	CA	92691-
77	Progressive Property Mg	Cottages	27405 Puerta Real, Suite 300	Mission Viejo	CA	92691-
13	Progressive Property Mg	Willow Grove	29B Technology, Suite 100	Irvine	CA	92618-2374
42	Action Property Mgmnt	Westpark Las Palmas	29B Technology, Suite 100	Irvine	CA	92618-2374
41	Action Property Mgmnt	Montilla				

Maili	Homeowners Associatior	Organization Name	Address	City	State	Postal Code
127	Action Property Mgmnt	Northwood Villas	29B Technology, Suite 100	Irvine	CA	92618-
118	Action Property	Highlands	29B Technology, Suite 100	Irvine	CA	92618-
128	Action Property Mgmnt	Cobblestone	29B Technology, Suite 100	Irvine	CA	92618-
121	Action Property Mgmnt	Aventura	29B Technology, Suite 100	Irvine	CA	92618-
16	Action Property	Woodbridge Parkway	29B Technology, Suite 100	Irvine	CA	92618-2374
126	Action Property Mgmnt	Kenwood	29B Technology, Suite 100	Irvine	CA	92618-
15	HOA	Woodbridge Village	31 Creek Road	Irvine	CA	92604-
132	HOA	Colony Club	3611 South Mall	Irvine	CA	92606-
149	HOA	Birchlane	3711 N. Harbor Blvd, Suite D	Fullerton	CA	92835-
22	Seabreeze Mgmnt	Park Crest	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
48	Seabreeze Mgmnt	Orangetree Villas	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
30	Seabreeze Mgmnt	Sierra Bonita	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
45	Seabreeze Mgmnt	Orange Tree	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
47	Seabreeze Mgmnt	Orangetree Terrace	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
49	Seabreeze Mgmnt	Tarocco	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
46	Seabreeze Mgmnt	Orange Tree Patio Homes	39 Argonaut, Suite 100	Aliso Viejo	CA	92656-
50	HOA	Orangetree	43 Lemon Grove	Irvine	CA	92620-4511
25	HOA	University Community	4530 Sandburg Way	Irvine	CA	92612-
137	HOA	North Irvine Villages	4790 Irvine, Suite 105	Irvine	CA	92620-
124	NAMCO	Orchard Glen	4840 Irvine, Suite 208	Irvine	CA	92620-
125	NAMCO	Northwood Timberline	4840 Irvine, Suite 208	Irvine	CA	92620-
122	NAMCO	Northwood Classics	4840 Irvine, Suite 208	Irvine	CA	92620-
123	NAMCO	Northwood Courtside	4840 Irvine, Suite 208	Irvine	CA	92620-
140	HOA	The Groves	5200 Irvine Blvd. - Office	Irvine	CA	92620-
157	HOA	Country Road	585 Country Lane	Brea	CA	92821-
18	Tritz Professional Mgmnt	Yale Association	7400 Center Ave, Suite 205	Huntington B	CA	92647-
10	Tritz Professional Mgmnt	Shoreline	7400 Center, Suite 205	Huntington B	CA	92647-
2	Huntington West Property	Park Vista	PO Box 1098	Westminister	CA	92684-
144	Western National Group	Deerfield Apartments	PO Box 19528	Irvine	CA	92623-
12	EMMONS	Willow Creek	PO Box 19530	Irvine	CA	92623-
4	Villageway Mgmnt	Seaport	PO Box 4708	Irvine	CA	92616-
28	Villageway Mgmnt	Broadmoor Campus View	PO Box 4708	Irvine	CA	92616-
91	Villageway Mgmnt	Northwood Park	PO Box 4708	Irvine	CA	92616-____

Maili	Homeowners Associatio	Organization Name	Address	City	State	Postal Code
93	Villageway Mgmnt	Turtle Rock Garden	PO Box 4708	Irvine	CA	92616-____
90	Villageway Mgmnt	Irvine Wildflower	PO Box 4708	Irvine	CA	92616-____
89	Villageway Mgmnt	Fawn Glen	PO Box 4708	Irvine	CA	92616-____
94	Villageway Mgmnt	Turtle Rock Town Homes	PO Box 4708	Irvine	CA	92616-____
88	Villageway Mgmnt	Doe Trail	PO Box 4708	Irvine	CA	92616-____
87	Villageway Mgmnt	Deerfield	PO Box 4708	Irvine	CA	92616-____
11	Villageway Mgmnt	Village Green	PO Box 4708	Irvine	CA	92616-
3	Villageway Mgmnt	Parkside	PO Box 4708	Irvine	CA	92616-
7	Villageway Mgmnt	Woodbridge Somerset	PO Box 4708	Irvine	CA	92616-
86	Villageway Mgmnt	Westpark Corte Bella	PO Box 4708	Irvine	CA	92616-
24	Villageway Mgmnt	Terrace Community	PO Box 4708	Irvine	CA	92616-
31	Villageway Mgmnt	Tortuga Community	PO Box 4708	Irvine	CA	92616-
95	Villageway Mgmnt	Columbia Square	PO Box 4708	Irvine	CA	92616-____
21	Villageway Mgmnt	Vista San Joaquin	PO Box 4708	Irvine	CA	92616-
92	Villageway Mgmnt	Sun Ridge	PO Box 4708	Irvine	CA	92616-____
111	Villageway Mgmnt	Turtle Rock Glen	PO Box 4708	Irvine	CA	92616-
114	HOA	Skyview	PO Box 4811	Irvine	CA	92616-
103	HOA	Woodbridge Cove	PO Box 4811	Irvine	CA	92616-
116	HOA	Turtle Rock Terrace	PO Box 4811	Irvine	CA	92616-
120	HOA	Princeton Townhouses	PO Box 4811	Irvine	CA	92616-
133	HOA	Windwood Garden	PO Box 4811	Irvine	CA	92616-
134	HOA	Windwood Townhouses	PO Box 4811	Irvine	CA	92616-
113	HOA	Sierra Broadmore	PO Box 4811	Irvine	CA	92616-
6	HOA	Woodbridge Shores	PO Box 4811	Irvine	CA	92616-
156	HOA	Country Hills Estates	PO Box 67	Brea	CA	92822-
159	HOA	North Hills	PO Box 67	Brea	CA	92822-
153	HOA	Brea Terrace	PO Box 67	Brea	CA	92822-0067
163	HOA	Park Pasco	PO Box 67	Brea	CA	92822-

Last Name	First Nam	Organization	Address	City	State	Zip Code	Telephone #	Email
Ahern	Bonny		1844 N. Woodside St.	Orange	CA	92865-	(714) 921-9085	
Andrews	Caitlin		12 Gleneagles Drive	Newport Beach	CA	92660-	(949) 644-5791	
Arakelian	Madelene	South Coast Refuse Corporation	2021 Business Center Drive, #11	Irvine	CA	92669-	(949) 752-2638	
Arroyo	Enrique	California Department of Parks and Recre	17801 Lake Perris Drive	Perris	CA	92571-	(909) 940-5664	
Ault	Dawn		PO Box 309	Brea	CA	92821-		
Baranek	Kim	HELIX Enviromental Planning, Inc					(619) 462-0552	kimb@helixepi.com
Beardsly	Bob	City of Huntington Beach	2000 Main Street	Huntington Beach	CA	92648-		
Bowen	Larry	South Coast Air Quality Management Distri	21865 East Copley Drive	Diamond Bar	CA	91765-4182		lbowen@aqmd.gov
Brady	M.		3813 Calle Focas	San Clemente	CA	92672-	(949) 366-1960	
Brannon	Cathleen		28141 Via Ruede	San Juan Capistrano	CA	92675-		
Britton	George	PDSD	300 North Flower	Santa Ana	CA	92703-5000	(714) 834-5312	george.britton@pdsd.ocgov.com
Bruce	Bonnie	California Integrated Waste Management	1001 I Street, P.O. Box 4025	Sacramento	CA	95812-	(916) 341-6027	bbruce@ciwmb.ca.gov
Butterwick	Kyle	City of Dana Point	33282 Golden Lantern	Dana Point	CA	92677-		
Byrne	Michael	City of Irvine	1 Civic Center Plaza	Irvine	CA	92713-	(949) 724-6357	mbyrne@ci.irvine.ca.us
C. Jeff	Brinton	Brobeck, Attorneys at Law	38 Technology Drive	Irvine	CA	92618-5312	(949) 790-6379	cbrinton@brobeck.com
Call	John		1439 Beechwood	Brea	CA	92821-		jjcall1@juno.com
Chase	Bud	San Diego Landfill Systems	8364 Clairemont Mesa Blvd.	San Diego	CA	92111-	(619) 637-5628	
Chavez	Manuel		5200 Irvine Blvd., #364	Irvine	CA	92715-	(714) 832-9003	
Chen	Jay	South Coast Air Quality Management Distri	21865 E. Copley Drive	Diamond Bar	CA	91765-		jchen@aqmd.gov
Coleman	Warren	City of Brea	1 Civic Center Circle	Brea	CA	92821-	(714) 990-7642	
Collier	Warren		3680 Skylark	Brea	CA	92823-		
Cupps	John		2757 13th Street	Sacramento	CA	95818-	(916) 448-5272	
Davis	Dave	MSW Consultants	27393 Ynez Road, Suite 160	Temecula	CA	92591-		
Davis	Joe	Irvine Community Development Co.	550 Newport Center Drive	Newport Beach	CA	92658-6370	(949) 720-2705	
Daxon	Terri	Daxon Marketing Communications	679 Buttonwood Drive	Brea	CA	92821-	(714) 529-1218	daxoncomm@earthlink.net
Dejbakhsh	Linda	South Coast Air Quality Management Distri	21865 E. Copley Drive	Diamond Bar	CA	91765-		ldejbakhsh@aqmd.gov
Doyle	T.		155 Copa de Oro	Brea	CA	92823-	(714) 528-5287	
Dumhart	Douglas	City of San Juan Capistrano	32400 Paseo Adelanto	San Juan Capistrano	CA	92675-	(949) 443-6316	ddumhart@sanjuancapistrano.org
Eckes	Robert		2488 Foothill Lane	Brea	CA	92821-	(714) 529-0639	
Eowan	George		10112 Fair Oaks Blvd., Suite 8	Fair Oaks	CA	95628-		geowan@pacbell.net
Evans	Angela		1 Reef	Laguna Niguel	CA	92677-		
Ewles	John		11 Madrigal	San Clemente	CA	92673-	(949) 248-7780	
Field	Robin		19401 Sunray Lane, #205	Huntington Beach	CA	92648-		recylgal@aol.com

people with e-mail address received an e-mail notification

Last Name	First Nam	Organization	Address	City	State	Zip Code	Telephone #	Email
Filler	Robert	Mesquite Regional Landfill	444 South 8th Street, Suite B1	El Centro	CA	92243-	(760) 337-9128	
Flynn	Joan	City of Huntington Beach	2000 Main Street	Huntington Beach	CA	92648-		
Frost	Tom		210 Copa de Oro	Brea	CA	92823-	(714) 524-7186	
Fullington	Keith		481 Peppertree	Brea	CA	92821-	(714) 529-8020	
Gaede	Rex		1301 Denise Court	Brea	CA	92821-	(714) 529-8561	
Goldstein	Glenn		1255 Tamarack Avenue	Brea	CA	92821-		gnjg@pacbell.net
Green	Nancy		855 North Brea Blvd., #304	Brea	CA	92821-	(714) 255-1125	
Gullege	John	L.A. County Sanitation District	1955 Workman Mill Road, P.O. B	Whittier	CA	90067-	(562) 699-7411	
Haanpaa	Roser		477 Hummingbird	Brea	CA	92823-		
Haidinger	Tori		27762 Paseo Barona	San Juan Capistrano	CA	92675-		tori.haidinger@smes.org
Haluza	Karen	City of Brea	1 Civic Center Circle	Brea	CA	92821-	(714) 990-7674	
Harris	Jeanne		235 Avenida Santa Barbara	San Juan Capistrano	CA	92675-		
Hayes	Will	Public Works Agency M-21	P.O. Box 1988	Santa Ana	CA	92702-		
Heinrich	Alfred		3951 Tolley Court	Brea	CA	92823-		
Henshaw	Patricia	Solid Waste Local Enforcement Agency	2009 East Edinger Avenue	Santa Ana	CA	92705-4720	(714) 667-2014	phenshaw@hca.co.orange.ca.us
Ho	Eric		671 Partridge	Brea	CA	92823-		
Hoppe	Mike		7848 E. Margaret Court	Anaheim Hills	CA	92808-	(714) 281-0793	
Huang	Victoria		23 Crockett	Irvine	CA	92715-	(949) 786-8051	
Huston	Janet	League of Cities	600 W Santa Ana Blvd, Suite 214	Santa Ana	CA	92701-		
Johnson	Tina		660 Partridge Dr	Brea	CA	92823-		
Johnson	Eric		245 Verbena Lane	Brea	CA	92623-		
Katroulis	Jim		31332 Via Parra	San Juan Capistrano	CA	92675-		
Koger	Gary		1060 Woodcrest	Brea	CA	92821-		gkoger@pih.net
Koval	Gary		PO Box 4686	West Covina	CA	91791-		
Kropke	Nancy		661 Partridge	Brea	CA	92823-		
Lass	Dixie	California Regional Water Quality Control	3737 Main Street, Suite 500	Riverside	CA	92501-3339	(909) 782-3295	dlass@rb8.swrcb.ca.gov
Lauro	Joseph	Joseph C. Lauro Insurance Services	P.O. Box 788	Brea	CA	92822-		
Lenard	Robert	City of Laguna Niguel	27801 La Paz Road	Laguna Niguel	CA	92677-		
Leonard	Michelle	SCS Engineers	3711 Long Beach Blvd., 9th Floor	Long Beach	CA	90807-		mleonard@scseng.com
Leonard	Michael	TRC Environmental Solutions, Inc.	21 Technology Drive	Irvine	CA	92718-	(714) 727-9336	
Lessick	Dale		7 Lincoln	Irvine	CA	92604-		
Loewy	Kathy	League of Women Voters of Capistrano B	3465-A Bahia Blanca	Laguna Woods	CA	92653-	(949) 492-9954	
Lyster	Russell		1308 Las Lomas Drive	Brea	CA	92821-		

Last Name	First Nam	Organization	Address	City	State	Zip Code	Telephone #	Email
Maguin	Steven	Los Angeles County Sanitation District	1955 Workman Mill Road	Whittier	CA	90601-		
Maisch	Jeff		3030 Saturn Street, Suite 101	Brea	CA	92821-		
Malas	Tala		31591 Bluff Drive	Laguna Beach	CA	92651-		talamalas@hotmail.com
Malecki	Bill		13915 Avenida Espana	La Mirada	CA	90638-	(562) 943-2594	bemalecki@yahoo.com
Mangrum	Roger		21912 Via Del Lago	Trabuco Canyon	CA	92679-		
Mansur	Wade		180 Olinda Drive	Brea	CA	92821-	(714) 528-4240	
Maraya	Jacquelin	City of Lake Forest	23161 Lake Center Drive, Suite 1	Lake Forest	CA	92630-	(949) 461-3498	jmaraya@ci.lake-forest.ca.us
Martinez	Mary		111 South Flower	Brea	CA	92821-	(714) 990-3834	
Martinez	James	Unocal	376 S Valencia Ave	Brea	CA	92823-	(714) 577-3504	JAMartin@unocal.com
Martinez	Larry		447 Hummingbird Dr	Brea	CA	92823-		
Mazboudi	Ziad	City of San Juan Capistrano	32400 Paseo Adelanto	SJC	CA	92675-	(949) 234-4413	zmazboudi@sanjuancapistrano.org
McMillan	Bill		135 Meadowcreek Rd	Brea	CA	92821-4347		mcmillan5@sbcglobal.net
Melvold	Dave		24 Sonrisas	Irvine	CA	92715-	(714) 669-0664	
Miller	Dan	The Irvine Company	550 Newport Center Drive	Newport Beach	CA	92660-		
Neale	Heather		23 Russel Lane	Laguna Niguel	CA	92677-		
Neudorf	Nancy		24 Sunrise	Irvine	CA	92715-	(949) 854-6684	nneudorf@aol.com
Odermatt	John	California Regional Water Quality Control	9174 Sky Park Court, Suite 100	San Diego	CA	92123-		
Parker	Glenn		PO Box 1718	Brea	CA	92822-1718	(714) 255-9450	glenn@parkglencmi.com
Peralta	Jessica	Sun Post News	95 Avenida Del Mar	San Clemente	CA	92672-	(949) 492-5128	jperalta@ocregister.com
Perry	C.		19401 Sunray Lane, #205	Huntington Beach	CA	92648-		
Persaud	Harry	PDSD	300 North Flower	Santa Ana	CA	92703-5000	(714) 834-3669	harry.persaud@pdsd.ocgov.com
Piroutek	Marty		153 Morning Glory Street	Brea	CA	92821-		
Ramsey	Bill	City of San Juan Capistrano	32400 Paseo Adelanto	San Juan Capistrano	CA	92677-		
Rawlins	Sara		31081 Augusta Drive	Laguna Niguel	CA	92677-		sarabeth83@aol.com
Recupero	David		15052 Springdale, Suite 1	Huntington Beach	CA	92649-	(714) 898-9294	drecupero@recupero.net
Reimer	Chris	City of Brea	1 Civic Center Circle	Brea	CA	92821-	(714) 671-4415	
Relano	Clay		32122 Cook Lane	San Juan Capistrano	CA	92675-		
Reza	Gil	LA Times	1375 Sunflower Avenue	Costa Mesa	CA	92626-	(714) 966-7711	
Roush	Doris	City of Anaheim	200 South Anaheim Blvd.	Anaheim	CA	92805-	(714) 765-5162	droush@anaheim.net
Schlotterbe	Claire		170 Copa de Oro	Brea	CA	92823-	(714) 996-1572	
Scruton	Gordon		230 Copa de Oro	Brea	CA	92823-	(714) 524-6726	bscruton@earthlink.net
Shoemake	Charles	PDSD	300 North Flower	Santa Ana	CA	92703-5000	(714) 834-2166	charles.shoemaker@pdsd.ocgov.co
Silva	Beatrice		17910 Skypark Circle, Suite104	Irvine	CA	92614-		

Last Name	First Nam	Organization	Address	City	Stat	Zip Code	Telephone #	Email
Simmons	Fred		483 Hummingbird Dr	Brea	CA	92823-		
Speegle	Bryan	PDSD	300 North Flower	Santa Ana	CA	92703-5000	(714) 834-3144	bryan.speegle@pdsd.ocgov.com
Stevenson	David		185 Lilac	Brea	CA	92823-	(714) 528-8850	stevensondave@cs.com
Stoddard	Rachael		15 Santa Barbara Place	Laguna Niguel	CA	92677-		
Storm	Murray		21231 Pinebluff Drive	Trabuco Canyon	CA	92679-		
Struglia	Rachel		1580 Metro Dr	Costa Mesa	CA	92626-		
Stuart	Anne		147 Morning Glory Street	Brea	CA	92821-	(714) 524-0206	
Summers	Ann		215 Verbena Lane	Brea	CA	92821-	(714) 528-6116	stevesummers@compuserve.com
Tagore-Er	Richard	Brown, Vence & Associates, Inc.	198 Cirby Way, Suite 170	Roseville	CA	95678-	(916) 786-0600	rterwin@brownvence.com
Tanioka	Phil		504 Craftsman Circle	Brea	CA	92821-		
Taylor	Diane		175 Buckthorn	Brea	CA	92821-	(714) 993-7009	
Tupac	Charles	South Coast Air Quality Management Distri	21865 E. Copley Drive	Diamond Bar	CA	91765-		ctupac@aqmd.gov
Ullrich	Theresa		160 Buckthorn	Brea	CA	92823-	(714) 572-2777	tullrich@earthlink.net
Valdez	Jennifer		681 Partridge	Brea	CA	92823-		
Vargas	Steve							vivavargus@aol.com
Verner	Jeanne		855 North Brea Blvd., #224	Brea	CA	92821-	(714) 990-2797	
Wilson	Kurt		857 Vista Circle	Brea	CA	92821-		
Wzmore	Don		624 Poplar	Brea	CA	92821-		

tblSouthCountyPropertyOwners&OtherOrganizations

Last Nam	First Na	Organization	Department	Address	City	State	Zip Code
		Southern California Edison	Environmental Affairs	2244 Walnut Grove Avenue, P.O.	Rosemead	CA	91770
		Santa Margarita Company	Planning and Entitlement	30211 Avenida de Las Banderas	Rancho Santa Margar	CA	92635
		City of Dana Point	Community Development Department	33282 Golden Lantern, Suite 212	Dana Point	CA	92629
		California Native Plant Society	Orange County Chapter	P.O. Box 54891	Irvine	CA	92619
		Sierra Club	Orange County Foothill Subcommittee	3435 Wilshire Blvd, #320	Los Angeles	CA	90010
		City of Oceanside	Community Services Department	300 N. Coast Hwy	Oceanside	CA	92054
		Whispering Hills, LLC	Concorde Development	19700 Fairchild Road	Irvine	CA	92612
		Talega Associates, LLC		951 Calle Negocio, Suite D	San Clemente	CA	92673
		Rancho Mission Viejo		28811 Ortega Highway, Box 9	San Juan Capistrano	CA	92693
Bacsikin	Scott	Transportation Corridor Agencies		125 Pacifica, Suite 100	Irvine	CA	92618-3304
Fraser	Robert	Ortega Highway Residents Association	Mountain Trails Preservation Society	1536 E. Washington Ave.	Santa Ana	CA	92701-3246
Hale	Tom	TVI		P.O. Box 24	Irvine	CA	92650
Moreno	Paul	Audubon Society-South Coast		28872 Escalona Drive	Mission Viejo	CA	92692
Rose	Donald	San Diego Gas & Electric		P.O. Box 1831	San Diego	CA	92112
Soroka	Gaye	Waste Management		16122 Construction Circle East	Irvine	CA	92712
South	Steve	EDCO Disposal Corporation		6670 Federal Blvd.	Lemon Grove	CA	91945
Stein	David	Southern California Association of Gov		818 West 7th Street, 12th Floor	Los Angeles	CA	90017
Tobin	Chuck	Burrtec Waste		9890 Cherry Avenue	Fontana	CA	92335
Witt	Norm	The Irvine Company		550 Newport Center Drive	Newport Beach	CA	92660

tblSouthCountyHomeOwnersAssociations

Last Name	First Nan	HOA	Property Management Co	Address	City	State	Zip Code
Staudenbaur	Art	Los Corrales HOA		8251 Paseo Corrales	San Juan Capistrano	CA	92675
Woodward	Eileen	Tacayo Canyon		1396 Felipe	San Clemente	CA	92673
Nishikawa	Ken	John Laing Forster Ranch		3121 Michaelson Dr	Irvine	CA	92612-7673
Mason	Dave	Rancho Del Rio Master Association	Action Property Management	29B Technology Drive, Suite 100	Irvine	CA	92618
Mason	Dave	Flora Vista Sub Association	Action Property Management	29B Technology Drive, Suite 100	Irvine	CA	92618
Dawson	Luann	Marblehead Master	Associated Management and Maintenance	P.O. Box 2099	Capistrano Beach	CA	92624
		Meadowwood Condominiums	Associated Management and Maintenance	P.O. Box 2099	Capistrano Beach	CA	92624
Caraway	Christine	Rancho San Clemente Master HOA	Associated Management Group	2131 Las Palmas Drive, Suite A	Carlsbad	CA	92009
Huggins	Carol	Mesa Vista North HOA	Keystone Pacific Property Management	16845 Von Karman, No. 200	Irvine	CA	92606
Stinson	Debbie	Hidden Mountain Estates HOA	Keystone Pacific Property Management In	16845 Von Karman, No. 200	Irvine	CA	92606
Meyer	Dayton	Del Cabo Properties, Inc.	Laguna Shores Management Co.	30100 Crown Valley Parkway, Suite 18	Laguna Niguel	CA	92677
Simpson	Vic	San Juan Mesa Verde HOA	Laguna Shores Management Company	30100 Crown Valley Parkway, Suite 18	Laguna Niguel	CA	92677
		Villamar Association	Management Service Company	647 Camino de los Mares, Suite 127	San Clemente	CA	92672
Gummeson	Pat	Los Vista HOA	Total Property Management	2 Corporate Park, Suite 200	Irvine	CA	92606
Gustave	Tina	Hidden Mountain HOA	Total Property Management	2 Corporate Park, Suite 200	Irvine	CA	92606
		Rancho San Juan HOA	Trans-Pacific Management Company	647 Camino de los Mares, Suite 226	San Clemente	CA	92673
		Tacayo Hills	Trans-Pacific Management Company	647 Camino De Los Mares, Suite 226	San Clemente	CA	92672
Smith	Al	Hunters Creek HOA	Trans-Pacific Management Service Comp	647 Camino de los Mares, Suite 226	San Clemente	CA	92673
		Casa Blanca Condominiums	Webb Management Company	960 Calle Amanecer	San Clemente	CA	92673
		Tacayo Ridge	Webb Management Company	960 Calle Amanecer	San Clemente	CA	92673
Weigand	David	El Encanto	Webb Management Company	960 Calle Amanecer	San Clemente	CA	92673
Danielson	Marlene	Forster Ranch Master HOA	Webb Management Company	960 Calle Amanecer	San Clemente	CA	92673
Grable	Tom		William Lyon Homes, Inc.	4490 Von Karman	Newport Beach	CA	92660

tblResource&ResponsibleAgencies

Last Name	First Na	Organization	Department	Address	City	State	Zip Code
		State Clearinghouse	Office of Planning and Research	1400 Tenth Street, Room 222	Sacramento	CA	95812-3044
		Caltrans District 12	Enviromental Planning	3347 Michelson Drive, Suite 100	Irvine	CA	92612
		California State Resources Agency	Enviromental Review	1416 9th Street	Sacramento	CA	95814
		California Department of Water Resources	Division of Water Quality	PO Box 100	Sacramento	CA	95801
		Riverside County Planning Department		4080 Lemon Street, 9th Floor	Riverside	CA	92501
		California Air Resources Board	Evaluation and Planning	PO Box 2815	Sacramento	CA	95812
Bavan	Sara	Orange County Flood Control District		300 N. Flower, P.O. Box 4048	Santa Ana	CA	92702-4048
Begnell	Gene	Orange County Fire Authority		180 Water Street, P.O. Box 86	Orange	CA	92666-0086
Caretto	David	Aliso Water Management Agency		30290 Rancho Viejo Road	San Juan Capis	CA	92675
Chadwick	Dan	California Department of Fish and Game	South Coast Region	4949 Viewridge Avenue	San Diego	CA	92123
Cleary-Milan	Macie	Transportation Corridor Agencies		PO Box 53770	Irvine	CA	92619-3770
Corey	Ken	U.S. Fish and Wildlife Service	(760) 431- 9440	6010 Hidden Valley Road	Carlsbad	CA	92009
Crabtree	David	City of Brea		1 Civic Center Circle	Brea	CA	92821
Debic	Mark	California Integrated Waste Management B	Permitting and Enforcement	P.O. Box 4025	Sacramento	CA	95812-4025
Farror	Corice	U.S. Army Corps of Engineers	Regulatory Branch	911 Wilshire Blvd., P.O. Box 532711	Los Angeles	CA	90053-2325
Gordon	Amy	CRWQCB-SD		9174 Skypark Court, Suite 100	San Diego	CA	92123
Hart	Allison	City of Irvine		1 Civic Center Plaza	Irvine	CA	92623
Henshaw	Patricia	Orange County Health Care Agency		2009 East Edinger	Santa Ana	CA	92705
Holloway	Jim	City of San Clemente		910 Calle Negocio, Suite 100	San Clemente	CA	92673
Jones	David	South Coast Air Quality Management Distric		21865 Copley Drive	Diamond Bar	CA	91765-0939
Lass	Dixie	CRWQCB-SA		3737 Main Street, Suite 500	Riverside	CA	92501
Leahy	Arthur	Orange County Transportation Authority		550 S. Main Street, P.O. Box 14184	Orange	CA	92613-1584
McAfee	Lyn	NROC	Irvine Ranch Water District	15600 Sand Canyon Rd.	Irvine	CA	92618
Neely	Tim	NROC	Planning and Development Servi	300 North Flower	Santa Ana	CA	92703
Odermatt	John	CRWQCB-SD		9174 Sky Park, Suite 100	San Diego	CA	92123
O'Donnell	Tim	City of Brea		1 Civic Center Circle	Brea	CA	92821
Ramsey	Bill	City of San Juan Capistrano		32400 Paseo Adelanto	San Juan Capis	CA	92677
Setron	Aaron	U.S. Environmental Protection Agency		75 Hawthorne Street	San Francisco	CA	94105-3901
Simon	Tim	Orange County Sheriff's Department		30331 Crown Valley Parkway	Laguna Niguel	CA	92667
Smith	Jeff	Southern California Assoc. of Governments		818 West 7th Street, 12th Floor	Los Angeles	CA	90017
Smith	Steve	South Coast Air Quality Management Distric		21865 E. Copley Drive	Diamond Bar	CA	91765-0939
Talley	Dale	City of San Clemente		100 Avenida Presidio	San Clemente	CA	92672
Tamasi	Judi	Wildlife Corridor Conservation Authority		5750 Ramirez Canyon Road	Malibu	CA	90265
Tolles	Eric	City of Irvine		1 Civic Center Plaza	Irvine	CA	92606
Zoutendyk	David	U.S. Fish and Wildlife Service		2370 Loker Avenue West	Carlsbad	CA	92008

ATTACHMENT C

FIRST SET OF DUPLICATE LETTERS

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, July 14, 2004 7:46 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Natalie Vallejo [mailto:natsv777@aol.com]
Sent: Wednesday, July 14, 2004 12:35 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size.

The DEIR also does not provide a slope stability report on the landfill expansion, and puts the heath and safety of the residents who live below the landfill and the workers at the landfill in danger. The DEIR clearly points out that "assumptions" were used to create this report based on a past project that only studied the height of the landfill to 1,300 feet. This project will add millions of tons of waste to landfill and apply additional pressures on the foundations and buttress holding back the fill to the height of 1,400 feet. A major earthquake could break the south buttress and trigger a landslide, and the south face of the landfill sits along the Whittier fault line.

The Final EIR must contain the actual project slope stability report based on the proposed project, and not previous assumptions to ensure the safety of homeowners and workers in the area. A draft report must be completed and circulated to the public before its inclusion into the final EIR. If safe slope stability cannot be obtained, then this project cannot proceed, and that is why it must be included in the final EIR.

As for the dump truck traffic going to the landfill through Brea's city streets, the DEIR completely disregarders the resident's demands to have it removed! Numerous residents through letters and comments at the public scoping meeting, suggested a western access road alternative. The DEIR looked at the Tonner Canyon Road option, giving us a four-page explanation why it couldn't be done based on other projects, and did not look at any other alternatives to eliminate landfill traffic. This shows that IWMD has NO desire to change the access road. If landfill traffic is not removed from the core of Brea, this project should NOT be done! These trucks are noisy, dangerous, and smelly, they destroy the aesthetics of our city, and add congestion to our roads. Many people are worried that someday a person will get killed by one of these garbage trucks.

The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

Sincerely,

Natalie Vallejo
11311 Tampa Ave #8
Northridge, CA 91326

818-360-6344

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 12, 2004 10:18 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: George.Pascarzi@ocnet01.co.orange.ca.us
[mailto:George.Pascarzi@ocnet01.co.orange.ca.us]
Sent: Monday, July 12, 2004 9:58 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size.

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The Final EIR must contain the actual project slope stability report based on the proposed project, and not previous assumptions to ensure the safety of homeowners and workers in the area. A draft report must be completed and circulated to the public before its inclusion into the final EIR. If safe slope stability cannot be obtained, then this project cannot proceed, and that is why it must be included in the final EIR.

As for the dump truck traffic going to the landfill through Brea's city streets, the DEIR completely disregarders the resident's demands to have it removed! Numerous residents through letters and comments at the public scoping meeting, suggested a western access road alternative. The DEIR looked at the Tonner Canyon Road option, giving us a four-page explanation why it couldn't be done based on other projects, and did not look at any other alternatives to eliminate landfill traffic. This shows that IWMD has NO desire to change the access road. If landfill traffic is not removed from the core of Brea, this project should NOT be done! These trucks are noisy, dangerous, and smelly, they destroy the aesthetics of our city, and add congestion to our roads. Many people are worried that someday a person will get killed by one of these garbage trucks.

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Sincerely,

George Pascarzi, MD
120 S Flower Hill St
Brea, CA 92821

714-996-7207

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 12, 2004 7:26 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: savebr2@laffan.lunarpages.com
[mailto:savebr2@laffan.lunarpages.com]
Sent: Friday, July 09, 2004 7:59 PM
Subject: Olinda Alpha Landfill Expansion

Barbara Arczynski

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Brea Olinda High School cross country runners tell us that the air at Valencia and Birch streets is unhealthful. They find that they cough and are short of breath when they run in this area. How can we expect children attending school or playing in the sports park to be safe and free of asthma and other debilitating illnesses. Will they be able to play outside at recess or lunch? Will their teachers and those on duty on the playground be safe from airborne hazards. What might this situation cost citizens and public agencies due to lawsuits if the matter is left unaddressed?

Sincerely,

Barbara Arczynski
612 S. Maple Ave.
Brea, CA 92821

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Friday, July 09, 2004 3:22 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Barbara Grattan [mailto:barb535@cs.com]
Sent: Friday, July 09, 2004 3:01 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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PLEASE DO NOT MAKE OUR CITY TO BE KNOWN AS THE DUMP CITY OF ORANGE COUNTY.
BARBARA GRATTAN

Sincerely,

Barbara Grattan
2776 Sorrel St.
Brea, CA 92821

714 993-0094

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 06, 2004 10:56 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: JOSH HUBERT [mailto:FREEALL@SBCGLOBAL.NET]
Sent: Tuesday, July 06, 2004 10:14 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

JOSH HUBERT
125 BUCKTHORN DR
BREA, CA 92821

714-336-7363

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 06, 2004 8:53 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Tamara Martin [mailto:tmartin786@sbcglobal.net]
Sent: Tuesday, July 06, 2004 8:41 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Tamara Martin
310 Lotus Place
Brea, CA 92821

714-672-9513

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 06, 2004 7:49 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Jaimee Hubert [mailto:capturingmoments@hotmail.com]
Sent: Saturday, July 03, 2004 11:05 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Give us what we voted for!!!!!!!!! Give us our park! It is so important for our city and the children in it!

Sincerely,

Jaimee Hubert
702 Lime St.
Brea, CA 92821

714-529-7098

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 06, 2004 7:49 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Beth Mooney [mailto:bethmooney@sbcglobal.net]
Sent: Friday, July 02, 2004 6:47 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Please do not renege on the original deal!!

Sincerely,

Beth Mooney
260 W Birch St Apt D203
Brea, CA 92821

714-674-0476

Hull, Ray

From: OAL, RELOOC
Sent: Friday, July 02, 2004 4:53 PM
To: Hull, Ray
Cc: Amirhosseini, Susan; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Bonnie Diplock [mailto:blueeyesbon@aol.com]
Sent: Friday, July 02, 2004 3:55 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Please consider removing the trucks from their current route. Think about our childrens health and safety growing up in brea. All of the air polution that they will be breathing in at the schools, sports park and even in their own backyards. When we purchased our home we were told of when the landfill would close. Not to be extended. We were also not informed as to the truck traffic to be increasing along Valencia.

Sincerely,

Bonnie Diplock
3625 Falcon Way
Brea, CA 92823

714-528-1027

Hull, Ray

From: Hagthrop, Linda
Sent: Friday, July 02, 2004 4:53 PM
To: Hull, Ray
Cc: Amirhosseini, Susan; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: D Dapkus [mailto:debbiedapkus@yahoo.com]
Sent: Friday, July 02, 2004 4:13 PM
Subject: Olinda Alpha Landfill Expansion

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I am concerned w/ the fact that the students who will attend the new school at Birch & Valencia will be walking to school on the same streets that the trucks travel on. For the safety of our children the truckers should be made to drive on Tonner Canyon from the 57 and not be allowed on Valencia.

Sincerely,

D Dapkus
3671 Falcon Way
Brea, CA 92823

7141234567

Hull, Ray

From: Hagthrop, Linda
Sent: Friday, July 02, 2004 3:00 PM
To: Hull, Ray; Amirhosseini, Susan; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Kathy Steinke [mailto:kathy@dkssales.com]
Sent: Friday, July 02, 2004 12:44 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Kathy Steinke
3625 Skylark Way
Brea, CA 92823

714-993-0883

Hull, Ray

From: savebr2@laffan.lunarpages.com
Sent: Friday, July 02, 2004 10:23 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Warren LaRose
537 S. Laurel Avenue
Brea, CA 92821

714-255-1041

Hull, Ray

From: Johnathan T. Boyce [boyce_johnathan@yahoo.com]
Sent: Friday, July 02, 2004 10:09 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Johnathan T. Boyce
3868 Whistle Train Road
Brea, CA 92823

714-996-4311

Hull, Ray

From: Debbie Lindblom [lindblommom@aol.com]
Sent: Friday, July 02, 2004 9:08 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Debbie Lindblom
1005 E Elm St
Brea, CA 92821

714 671-4949

Hull, Ray

From: Keith Davidson [kdavidson1@adelphia.net]
Sent: Thursday, July 01, 2004 11:11 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Breans concerns about ground water contamination must be addressed in the EIR and address potential dangers and costs to clean up contaminated groundwater.

Sincerely,

Keith Davidson
1624 N Cedarcrest Dr
Brea, CA 92821

714-529-9817

Hull, Ray

From: Karen Hopkins [karsails@earthlink.net]
Sent: Thursday, July 01, 2004 10:04 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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My nephew and nieces live near the Olinda Alpha Landfill and I am concerned that they will be losing the park they were promised.

Sincerely,

Karen Hopkins
1123 10th Street
Santa Monica, CA 90403

310 - 451 - 3561

Hull, Ray

From: Wylie Strohl [wstrohl@mowmp.org]
Sent: Thursday, July 01, 2004 5:48 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Wylie Strohl
2979 Colton Rd
Pebble Beach, CA 93953

831-375-4454

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 3:26 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Zeena Adal [mailto:zeena_adal@yahoo.com]
Sent: Thursday, July 01, 2004 2:54 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Zeena Adal
670 Partridge Drive
Brea, CA 92823

Hull, Ray

From: Hagthrop, Linda
Sent: Thursday, July 01, 2004 2:51 PM
To: Hull, Ray; Amirhosseini, Susan
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Tina Johnson [mailto:tmjohn22@yahoo.com]
Sent: Thursday, July 01, 2004 2:26 PM
Subject: Olinda Alpha Landfill Expansion

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The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

As President of MOMS Club Brea-South I must say that I am saddened that our leaders choose to pursue revenues from waste disposal rather than providing amenities, such as this proposed park, for our families. I implore that the above elected officials seriously rethink the proposed expansion and provide alternatives that will benefit the many families in North Orange County. Also I must add that I loathe driving through Brea on Imperial Highway and Valencia Avenue and avoid it whenever possible. The trucks show no concern for others on the road. Having such traffic coursing the through the middle of Brea is not a wise idea. Please explore all alternatives.

Sincerely,

Tina Johnson
660 Partridge Drive
Brea, CA 92823

714-961-1707

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 10:53 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Kim Byrnes [mailto:kimabyrnes@aol.com]
Sent: Thursday, July 01, 2004 10:45 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

Sincerely,

Kim Byrnes
365 Tangerine Pl.
Brea, CA 92823

714-993-2203

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 8:36 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Dorothy [mailto:dakerblom@aol.com]
Sent: Thursday, July 01, 2004 8:37 AM
Subject: Olinda Alpha Landfill Expansion

Dorothy Akerblom

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Dorothy
Akerblom
Los Angeles, CA 90049

(310) 472-8050

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 8:36 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Sherry [mailto:missu59@pacbell.net]
Sent: Thursday, July 01, 2004 8:12 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Where does it end,when there are no places for families to go to enjoy nature??? When instead of seeing the beauty of the hills and open land we only see the tops of houses,instead of hearing the sounds of birds singing we only hear the sound of trash trucks driving by?

Sincerely,

Sherry
825 Tamarack Ave #35
Brea, CA 92821

714-671-0136

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:49 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

Joy Dean

-----Original Message-----
From: savebr2@laffan.lunarpages.com
[mailto:savebr2@laffan.lunarpages.com]
Sent: Thursday, July 01, 2004 7:47 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Joy Dean
565 Morning Dove PL
Brea, CA 92823

714-792-0482

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:49 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Lisa Alford [mailto:mrswestcoastdiva@aol.com]
Sent: Thursday, July 01, 2004 7:47 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Lisa Alford
565 Morning Dove PL
Brea, CA 92823

714-792-0482

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:49 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: savebr2@laffan.lunarpages.com
[mailto:savebr2@laffan.lunarpages.com]
Sent: Thursday, July 01, 2004 7:47 AM
Subject: Olinda Alpha Landfill Expansion

Demetrio Alford

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Sincerely,

Demetrio Alford
565 Morning Dove PL
Brea, CA 92823

714-792-0482

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:49 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Jodi Savino [mailto:JSavmomof3@aol.com]
Sent: Wednesday, June 30, 2004 10:42 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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My kids go to Brea schools and play sports in Brea. These kids need this park! Don't take it away from them! Thank you.

Sincerely,

Jodi Savino
2908 Parkwood Ct.
Fullerton, CA 92835

714-671-1630

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:48 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Won Yu [mailto:wonheuiyu@sbcglobal.net]
Sent: Wednesday, June 30, 2004 9:31 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Please keep Brea a beautiful community and don't litter it with DUMP trucks. We already see too many of them everyday.

Sincerely,

Won Yu
3991 Trolley Ct.
Brea, CA 92823

714-986-9852

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:47 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: m w kim [mailto:mwkim22@sbcglobal.net]
Sent: Wednesday, June 30, 2004 8:48 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size.

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The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

Sincerely,

m w kim
3974 grandview dr
brea, CA 92823

714 524 7259

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:47 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Robert Kay [mailto:kayrobfm33@aol.com]
Sent: Wednesday, June 30, 2004 8:23 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Robert Kay
429 S. Poplar
Brea, CA

714 529-7585

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:47 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Michael Ajemian [mailto:MIKAAJ@MSN.COM]
Sent: Wednesday, June 30, 2004 8:04 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Michael Ajemian
1962 Arts Avenue
Brea, CA 92821

714-231-5791

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:47 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: brad byrnes [mailto:bradbyrnes@aol.com]
Sent: Wednesday, June 30, 2004 5:39 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

brad byrnes
tangerine
brea, CA 92823

7149932203

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Thursday, July 01, 2004 7:46 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

Siska Utama

-----Original Message-----
From: Utama@laffan.lunarpages.com [mailto:Utama@laffan.lunarpages.com]
Sent: Wednesday, June 30, 2004 5:03 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Utama, Siska
335 Amberwood Dr
Walnut, CA 91789

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 3:05 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Laura Piroutek [mailto:lpiroute@aol.com]
Sent: Wednesday, June 30, 2004 3:00 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Please do not extend the landfill.The citizens of Brea are being penalized unfairly. I have lived in Brea for 22 years, and am unhappy that the dumpsite dates keep being extended.

Sincerely,

Laura Piroutek
153 Morning Glory Street
Brea, CA 92821

714-524-6766

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 3:04 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Mary Jane Piroutek [mailto:mjpiroutek@aol.com]
Sent: Wednesday, June 30, 2004 2:59 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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The citizens of Brea are being penalized unfairly. I have lived in Brea for 25 years, and are unhappy that the dumpsite dates keep being extended, Please do not extend the landfill.

Sincerely,

Mary Jane Piroutek
153 Morning Glory Street
Brea, CA 92821

714-524-6766

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 3:03 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Dr. Gary Piroutek [mailto:piroutek@aol.com]
Sent: Wednesday, June 30, 2004 2:57 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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We have lived in Brea for 25 years, and are unhappy that the dumpsite dates keep being extended, the citizens of Brea are being penalized unfairly. Please do not extend the landfill.

Sincerely,

Dr. Gary Piroutek
153 Morning Glory Street
Brea, CA 92821

714-524-6766

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 3:03 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Mrs. Martha Piroutek [mailto:piroutek@aol.com]
Sent: Wednesday, June 30, 2004 2:56 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Mrs. Martha Piroutek
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Brea, CA 92821

714-524-6766

Hull, Ray

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Sent: Wednesday, June 30, 2004 3:03 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Alyse Adams [mailto:agunteradams@sbcglobal.net]
Sent: Wednesday, June 30, 2004 2:49 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size.

The DEIR also does not provide a slope stability report on the landfill expansion, and puts the heath and safety of the residents who live below the landfill and the workers at the landfill in danger. The DEIR clearly points out that "assumptions" were used to create this report based on a past project that only studied the height of the landfill to 1,300 feet. This project will add millions of tons of waste to landfill and apply additional pressures on the foundations and buttress holding back the fill to the height of 1,400 feet. A major earthquake could break the south buttress and trigger a landslide, and the south face of the landfill sits along the Whittier fault line.

The Final EIR must contain the actual project slope stability report based on the proposed project, and not previous assumptions to ensure the safety of homeowners and workers in the area. A draft report must be completed and circulated to the public before its inclusion into the final EIR. If safe slope stability cannot be obtained, then this project cannot proceed, and that is why it must be included in the final EIR.

As for the dump truck traffic going to the landfill through Brea's city streets, the DEIR completely disregarders the resident's demands to have it removed! Numerous residents through letters and comments at the public scoping meeting, suggested a western access road alternative. The DEIR looked at the Tonner Canyon Road option, giving us a four-page explanation why it couldn't be done based on other projects, and did not look at any other alternatives to eliminate landfill traffic. This shows that IWMD has NO desire to change the access road. If landfill traffic is not removed from the core of Brea, this project should NOT be done! These trucks are noisy, dangerous, and smelly, they destroy the aesthetics of our city, and add congestion to our roads. Many people are worried that someday a person will get killed by one of these garbage trucks.

The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

Too many promises, no committment by the officials is getting to be the motto. Prove them all wrong and support those of us who want to see the follow-thru of the original plan.

Sincerely,

Alyse Adams
997 Orangewood Drive
Brea, CA 92821

714-529-4440

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 3:02 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: H. D. Foley [mailto:hdfret@aol.com]
Sent: Wednesday, June 30, 2004 2:39 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

H. D. Foley
102 S. Flower Hill St.
Brea, CA 92821

Hull, Ray

From: Hagthrop, Linda
Sent: Wednesday, June 30, 2004 1:29 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: savebr2@laffan.lunarpages.com
[mailto:savebr2@laffan.lunarpages.com]
Sent: Wednesday, June 30, 2004 1:13 PM
Subject: Olinda Alpha Landfill Expansion

Carol Heyer

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Carol Heyer
925 Ave. Arboles
Thousand Oaks, CA 91360

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 12:52 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Mark Jasperson [mailto:markj@sbcglobal.net]
Sent: Wednesday, June 30, 2004 12:12 PM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Mark Jasperson
2000 monroe Ave nw
gRAND rAPIDS, mI 49505

6164536521

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 10:38 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

forwarded from RELOOC in-box.

-----Original Message-----
From: Alison Bergquist [mailto:Abergquist789@aol.com]
Sent: Wednesday, June 30, 2004 10:23 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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outrageous.

Sincerely,

Alison Bergquist
150 S. FlowerHill St.
Brea, CA 92821

714-524-7995

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 10:39 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

forwarded from RELOOC in-box

-----Original Message-----
From: Co Huynh [mailto:co@calnetix.com]
Sent: Wednesday, June 30, 2004 10:25 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Co Huynh
3618 Skylark Way
Brea, CA 92823

562-293-1665

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 10:40 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

forwarded from RELOOC in-box

-----Original Message-----
From: Andra Cullen [mailto:qcrefai@bakemarkwest.com]
Sent: Wednesday, June 30, 2004 10:31 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Andra Cullen
253 Mountain Ct
Brea, CA 92821

714-256-10101

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 11:46 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Monica Enriquez [mailto:menrique1@excite.com]
Sent: Wednesday, June 30, 2004 11:42 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

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Sincerely,

Monica Enriquez
553 N. Pacific Coast Hwy. #434
Redondo Beach, CA 90277

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 11:46 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Danny Schreiber [mailto:dschreiber@pkfamily.com]
Sent: Wednesday, June 30, 2004 11:30 AM
Subject: Olinda Alpha Landfill Expansion

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My wife and I have enjoyed visiting your cute town for shopping and dinner, but the excessive traffic has certainly made the journey less pleasant. Sitting behind the big smelly trucks at traffic lights just takes away from a day's excursion and makes shopping in Brea something to avoid. Please get the trucks off your streets before visitor's to Brea get so upset with the situation that we stop coming.

Sincerely,

Danny Schreiber
1750 Sandalwood Place
Thousand Oaks, CA 91362

805-492-0644

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Wednesday, June 30, 2004 11:45 AM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Olinda Alpha Landfill Expansion

-----Original Message-----
From: Nicole Schreiber [mailto:nschreiber@pkfamily.com]
Sent: Wednesday, June 30, 2004 11:24 AM
Subject: Olinda Alpha Landfill Expansion

I am outraged that the County of Orange is taking back the planned Olinda Regional Park. The vertical expansion of the Olinda Alpha Landfill will reduce the park to almost one-quarter is original planed size, and this is unacceptable! This park was promised to the residents of Brea and North Orange County as mitigation for the 1992 expansion of Olinda Alpha Landfill that allowed the landfill to operate an additional 16 years through 2021. The Draft Environmental Report does not acknowledge the people's desire for a Regional Park that provides the numerous facilities and recreational activities laid out in a 1994 General Development Plan that was put together by Brea residents and the Department of Harbors, Beaches and Parks.

If the vertical expansion is approved and the size of the usable area (the cap of the landfill) of the Regional Park is reduced, the MOU must allow for mitigation that will re-locate the lost acreage, acre for acre, to a new park within the city of Brea. Also, there cannot be any loss of facilities or activities from this park because of its reduction in size.

The DEIR also does not provide a slope stability report on the landfill expansion, and puts the heath and safety of the residents who live below the landfill and the workers at the landfill in danger. The DEIR clearly points out that "assumptions" were used to create this report based on a past project that only studied the height of the landfill to 1,300 feet. This project will add millions of tons of waste to landfill and apply additional pressures on the foundations and buttress holding back the fill to the height of 1,400 feet. A major earthquake could break the south buttress and trigger a landslide, and the south face of the landfill sits along the Whittier fault line.

The Final EIR must contain the actual project slope stability report based on the proposed project, and not previous assumptions to ensure the safety of homeowners and workers in the area. A draft report must be completed and circulated to the public before its inclusion into the final EIR. If safe slope stability cannot be obtained, then this project cannot proceed, and that is why it must be included in the final EIR.

As for the dump truck traffic going to the landfill through Brea's city streets, the DEIR completely disregarders the resident's demands to have it removed! Numerous residents through letters and comments at the public scoping meeting, suggested a western access road alternative. The DEIR looked at the Tonner Canyon Road option, giving us a four-page explanation why it couldn't be done based on other projects, and did not look at any other alternatives to eliminate landfill traffic. This shows that IWMD has NO desire to change the access road. If landfill traffic is not removed from the core of Brea, this project should NOT be done! These trucks are noisy, dangerous, and smelly, they destroy the aesthetics of our city, and add congestion to our roads. Many people are worried that someday a person will get killed by one of these garbage trucks.

The final EIR must contain an actual study of a western access road to the landfill because Breans have asked for it. It is the least that IWMD can do regardless of if this road is built or not. This road should be designed to only last as long as the landfill is operational, and should be a private access road that is environmentally sensitive. This study must account for the cost of this road and it must not be bloated or outrageous.

Sincerely,

Nicole Schreiber
1750 Sandal Wood Place
Thousand Oaks, CA 91362

805-492-0644

ATTACHMENT D

SECOND SET OF DUPLICATE LETTERS

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 1:06 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: AL BERTULLI [mailto:beval@adelphia.net]
Sent: Monday, July 19, 2004 12:14 PM
Subject: Dump the Trucks at OAL!

THIS SHOULD BE YOUR NUMBER ONE PRIORITY.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished.

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built.

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

AL BERTULLI
5610 WESHAM PLC.
BREA, CA 92821

562 6970370

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 1:07 PM
To: Hagthrop, Linda; Hull, Ray
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Anthony Cardinale [mailto:ajcard@pabell.net]
Sent: Monday, July 19, 2004 12:56 PM
Subject: Dump the Trucks at OAL!

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Anthony Cardinale
1175 Beechwood Dr
Brea, CA 32821

714-256-4602

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 11:37 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Andra Cullen [mailto:acrefai@bakemarkwest.com]
Sent: Monday, July 19, 2004 11:07 AM
Subject: Dump the Trucks at OAL!

The last thing that we need in Brea is an increase in traffic. It's a beautiful city and should remain to be so. I moved to Brea from Ohio 3 years ago and absolutely fell in love with the city.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Andra Cullen
253 Mountain Ct
Brea, CA, CA 92821

714-256-1010

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:01 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Jim Dower [mailto:djdower@adelphia.net]
Sent: Sunday, July 18, 2004 3:36 PM
Subject: Dump the Trucks at OAL!

Truck route would be approriate given future school plans.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Jim Dower
183 Morning Glory
Brea, CA 92821

714.816.6330

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:02 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Wm. Holtzen [mailto:holtzen@adelphia.net]
Sent: Sunday, July 18, 2004 9:19 PM
Subject: Dump the Trucks at OAL!

I fully agree with the letter above. As a first time home owner with a house that backs up to Valencia I experience the noise), pollution, smell, and trash that is brought in by these trucks daily starting at 6am or early. What also concerns me is that I regularly hear the sound of truck brakes locking up or skidding to a stop. I believe it won't be long before there is a serious accident.
I understand that the Brea landfill is needed but that does not mean that this route must be used. PLEASE consider an alternate route such as Toner.

Thank you.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Wm. Holtzen
435 Hummingbird Dr
Brea, CA 92823

714-879-3901 x1243

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:01 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Art Hutton [mailto:spectral52@aol.com]
Sent: Sunday, July 18, 2004 5:41 PM
Subject: Dump the Trucks at OAL!

The only real solution to this obnoxious and unwanted traffic on Imperial Hwy. is to eliminate it. Why must the citizens of Brea be exposed to this outraegeous and unsafe flow of trash and garbage through our main traffic artery? Why aren't the politicians, who we have elected to office, looking after the best interests of those who have put them in office? Get these trucks off of our city roads!!

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Art Hutton
211 St. Crispen Ave.
Brea, CA 92821

Hull, Ray

From: Hagthrop, Linda
Sent: Monday, August 02, 2004 8:32 AM
To: Hull, Ray
Cc: Amirhosseini, Susan
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Tina Johnson [mailto:tmjohn22@yahoo.com]
Sent: Monday, August 02, 2004 8:20 AM
Subject: Dump the Trucks at OAL!

It used to be that I was primarily concerned about the traffic, but now other issues are have equalled the traffic concern. My children have been having respiratory problems this summer, I suspect that it might be from playing in our front yard which is only 200-300 feet from Valencia Avenue. When we are in our yard it constantly smells of exhaust. I have lived near a freeway before and this smells worse. My children have been experiencing difficulty taking deep breathes without wheezing. We have no history of asthma in our family.

Valencia Avenue is the dirtiest street I have ever seen. There is constantly trash on it that falls off the trucks. This trash is not picked up, but is thrown onto medians or into the nearby open space where it is still visible from the road. This is also harmful to the environment as I saw a huge chunk of polystyrene sit in open space for two weeks and it is still there! No one in the public sector seems to notice or care about this very dirty street.

On a weekly basis a hauler parks in my neighborhood. Whether it is to fix his truck or communicate with his company or to even eat lunch they park on Sandpiper or Partridge and a majority of the time let their truck idle while they conduct their business. This is dangerous to the small children who live on these streets in two ways. First, it is never safe to have a large truck driving through a residential neighborhood, especially one with small children playing in their yard. Second, the amount of exhaust wafting through the neighborhood and into our houses can choke children. My children gasp for breath after one of these incursions.

I would also like to add that there have been incidents of truck drivers harassing female residents as they get their exercise on the jogging path along Valencia. The wolf whistles, crude comments and even pulling over to pursue an encounter are frightening and SHOULD NOT be occuring in a nice residential neighborhood such as Olinda Ranch. I have been approached and feared for my safety. I now no longer walk on Valencia, jogging path or no. Also when I see a hauler pull into our neighborhood I immediately escort my children inside our house fearing for our safety. It is sad that I don't even feel safe on my own street in broad daylight in a neighborhood of upper-middle class homes. This along with the concerns listed in the form letter below make me hope that somebody is listening will take positive action for the residents of Brea regarding the landfill.

We would move, but we really cannot afford to and also this house was built for us. We picked out everything in it to make us, as a young family, happy. We knew about the landfill before we moved in and we knew it was supposed to close in 2013. It is much worse than anyone ever portrayed to us when we did our research pre-buy. This is not buyers remorse or ignorance on our part. This is simply that such traffic should never be allowed to go through any residential neighborhood.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, July 20, 2004 11:06 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Jack & Marianne Keating [mailto:jackeating@sbcglobal.net]
Sent: Tuesday, July 20, 2004 10:57 AM
Subject: Dump the Trucks at OAL!

We are both in our 70s. We moved here to be close to our children and grandchildren & because Brea is "The City of Trees". How about keeping the spirit of that theme and follow the will of the majority of citizens. It is bad enough that the hills are "disappearing" and the air is worse by the day and toe traffic is terrible. Please do what you "can do" to keep Brea a nice quiet, clean, healthy environment and a destination city for nice people will want to live.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished.

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built.

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Jack & Marianne Keating
2066 Arts Ave
Brea, CA 92821

714-671-5977

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:02 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Robert Lawton [mailto:rlawton@mercuryinsurance.com]
Sent: Monday, July 19, 2004 7:33 AM
Subject: Dump the Trucks at OAL!

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Robert Lawton
3624 Skylark Way
Brea, CA 92823

714-238-6822

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 8:01 AM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Donald Parker [mailto:dltlparker@aol.com]
Sent: Sunday, July 18, 2004 4:33 PM
Subject: Dump the Trucks at OAL!

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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Sincerely,

Donald Parker
622 E. Lennox Ct.
Brea, CA 92821-7302

714-529-5753

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Monday, July 19, 2004 4:39 PM
To: Hull, Ray; Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

They sent this message 6 times. I am only forwarding one. (They are all the same.)

-----Original Message-----
From: Dr. and Mrs. Gary M. Piroutek [mailto:piroutek@aol.com]
Sent: Monday, July 19, 2004 4:37 PM
Subject: Dump the Trucks at OAL!

We have been residents of Brea for 25 years, and were told repeately that the landfill/dumpsite would be closed. That year for closure keeps being pushed farther into the future. The conditions are not adequate for keeping the landfill open longer. A new elementary school is scheduled to be built at the corner of Valencia and Birch streets with many threats of large trucks to our children. The quality of life with the added traffic, pollution, noise, and decreased park land will have a negative impact to the citizens of Brea and nearby Yorba Linda and Placentia residents. It is not reasonable to keep changing the dumpsite closure dates-As residents, we want to have confidence in the information that we are being told is correct; but continually changing the dates does not make this possible.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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Sincerely,

Dr. and Mrs. Gary M. Piroutek
153 Morning Glory Street
Brea, CA 92821

(714) 524-6766

Hull, Ray

From: Hagthrop, Linda
Sent: Thursday, July 22, 2004 3:28 PM
To: Hull, Ray; Amirhosseini, Susan
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Cynthia & Ramon Valdez [mailto:2animals@sbcglobal.net]
Sent: Wednesday, July 21, 2004 2:01 PM
Subject: Dump the Trucks at OAL!

We chose this city to buy a home in because it seemed rather peaceful, however, with all these trucks coming through all the time it is not the peaceful haven we were expecting.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built.

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Cynthia & Ramon Valdez
4322 Hillside Rd
Brea, CA 92823

714-572-2493

Hull, Ray

From: Hagthrop, Linda
Sent: Monday, July 26, 2004 9:14 AM
To: Hull, Ray
Cc: Amirhosseini, Susan
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: rebecca vargas [mailto:varbecky1@cs.com]
Sent: Thursday, July 22, 2004 5:06 PM
Subject: Dump the Trucks at OAL!

my ashma is worse when the windows open, lots of dust on windows and furniture. when the trucks on valencia will sandwitch you in like the own the road. diesal toxic fumes bad

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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Sincerely,

rebecca vargas
3616 falcon way
brea, CA 92823

ATTACHMENT E

THIRD SET OF DUPLICATE LETTERS

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

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- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name MELANIE SCHLOTTERBECK

Address 171 COZUMEL CT.

City LAGUNA BEACH E-Mail OCPARKBUILDER@YAHOO.COM

M. SCHLOTTERBECK
171 COZUMEL CT.
LAGUNA BEACH, CA
92651

SANTA ANA CA 927 PM 27 JUL 2004

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JUL 28 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

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Name FRED & ANITA FELDMAN

Address 5700 CARBON CANYON RD, #109

City BREA E-Mail —

Mr. & Mrs. Fredric S. Feldman
5700 Carbon Canyon Rd Spc 109
Brea CA 92823-7024

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I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
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Santa Ana, CA 92703

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Mr. D. Bettencourt
2580 Branch Ln
Brea, CA 92821

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name DON & KAREN BETTENCOURT
Address 2580 BRANCH LANE
City BREA E-Mail

GLENN GOLDSTEIN
1255 TAMARACK AVE
BREA CA 92821-2154

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JUL 29 2004
I.W.M.D.

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County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Glenn & Nancy Goldstein
Address 1255 TAMARACK AVE
City BREA, CA 92821 E-Mail gnjg@earthlink.net

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Name GUNG BAIK S.K. Baik

Address 1225 PONDEROSA AV

City BREA E-Mail S.K. Baik

S. BAIK
1225 PONDEROSA AV
BREA, CA 92823

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I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27034-5006

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension. However, I see no alternative
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon. strongly
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Ann M Summers

Address 215 Verbena Lane

City Brea CA 92823 E-Mail stephensummers@adelphia.net

Ann + Steve Summers
215 Verbena Lane
Brea, CA 92823

RECEIVED
JUL 29 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

N/A

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Name SUNG BAIK S.K. Baik

Address 1225 PONDEROSA AV

City BREA E-Mail S.K. Baik

S. BAIK
1225 PONDEROSA AV.
BREA, CA 92821

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JUL 29 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension. ✓ However, I see no alternative
- I strongly oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Ann M Summers

Address 215 Verbena Lane

City Brea CA 92823 E-Mail stephensummers@adelphia.net

Ann & Steve Summers
215 Verbena Lane
Brea, CA 92823

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I.W.M.D.

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County of Orange
Integrated Waste Management Department
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NO ROAD THROUGH TONNER CANYON!

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Name Michael Slavich

Address 1605 Cedarcrest Dr.

City Brea E-Mail pslavich@hotmail.com

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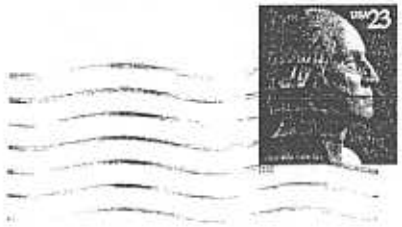
Name Claudia Damiano

Address 234 Longbranch Cir.

City Brea, CA 92821 E-Mail

LONG BEACH CA PM 28 JUL



Munco & Claudia Damiano
234 Longbranch Circle
Brea, CA 92821

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I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
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03

00 03

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Name M/M RODNEY TODD

Address 1044 GLEN CANYON WAY

City BREA E-Mail

Rod Todd
1044 Glen Canyon Way
Brea, CA 92821-2631

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
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Santa Ana, CA 92703

92703+5000

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Name Fred and Melinda Ramos

Address 1414 Central #61

City Brea E-Mail MurlyandFred@Aol.com

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Name E. BRANDT

Address 2427 E WOODFIELD PK

City BREA E-Mail

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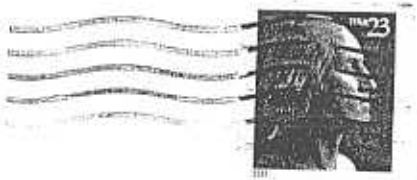
Name Eugen & Becky Williams

Address 270 Lilac Ln.

City Brea E-Mail WBeck855@Aol.com

INDUSTRY CA 917 6 Wd 28 JUL



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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

Eugen & Rebecca Williams
270 Lilac Lane
Brea, CA
92823

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Name AMY MARSHALL

Address 165 N. BUCKTHORN DR

City BREA E-Mail

Marshall
165 Buckthorn
Brea, Ca 92823

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Name VERELYN PRESTAGE

Address 354 OLINDA DR

City BREA, CA 92823 E-Mail verelyn@msn.com

John & Verelyn Prestage
354 Olinda Drive
Brea, Ca. 92823-7040

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Name SUE AND DICK KNIRK 714 990-2192

Address 869 W. WOODCREST AVE

City BREA 92821 E-Mail RKNIRK@EARTHLINK.NET

RICHARD L. KNIRK
869 W. WOODCREST AVENUE
BREA, CA 92821-1852
"Support Our Troops"

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320 N. Flower Street, Suite 400
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Name LUANNE COLLINS

Address 540 E. BUTTONWOOD DR

City BREA E-Mail

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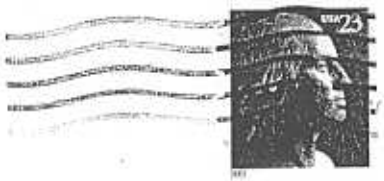
Name Stella L Causland

Address 240 Brookshire Pl

City Brea E-Mail KLASSACTT@AOL.COM

L Causland
240 Brookshire Pl
Brea, Ca 92821



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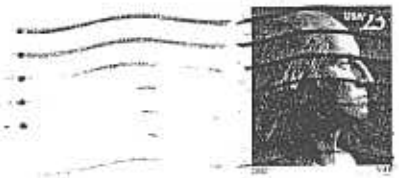
Name Roy and Frances Hanks

Address 1280 Mariposa Dr.

City Brea 92821 E-Mail



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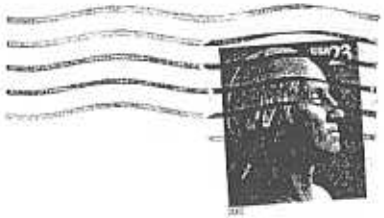
Name KATHLEEN MARTIN

Address 833 DAVIDSON CT.

City BREA E-Mail KATHMAT@aol.com

KLM
833 Davidson Ct
Brea, CA 92821



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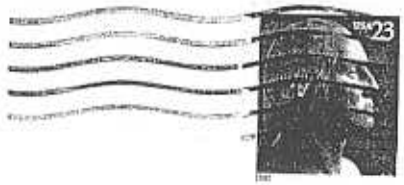
Name REED & ARLENE JOHNSON

Address 2591 FLANDERS CT.

City BREA E-Mail RJHOME@EARTHLINK.NET

Reed & Arlene Johnson
2591 Flanders Ct.
Brea, CA 92821



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Name LEO BURKE

Address 409 DEVONSHIRE DRIVE

City BREA E-Mail LEOBC@PACBELL.NET

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JUL 29 2004

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Integrated Waste Management Department
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Name JOHN S. & ANTOINETTE PALAZZO

Address 258 GOLDENROD ST.

City BREA, CA 92821 E-Mail —

J. PALAZZO
258 Goldenrod ST.
BREA, CA 92821

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JUL 29 2004

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Alice L. Buckles

Address 5700-113 Carbon Cyn Rd

City Brea E-Mail

Alice L. Buckles
5700-113 Carbon Cyn Rd
Brea, CA 92823

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JUL 29 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
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Santa Ana, CA 92703

03+5000

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Name John Barlass

Address 745 N. Forbes Dr.

City Brea E-Mail slerrajohn@bigzoo.net

Barlass
745 N. Forbes Dr.
Brea, CA 92821

INDUSTRY, CA 917 69
PM
28 JUL
2004

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JUL 29
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

09

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Name Craig King

Address 1340 La Canada Dr.

City Brea Ca E-Mail craigking@adelphia.net

Craig King
1340 La Canada Dr.
Brea, CA 92821

RECEIVED
JUL 29 2004
I.W.M.D.

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County of Orange
Integrated Waste Management Department
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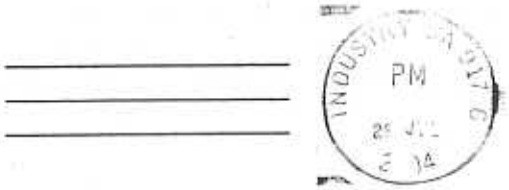
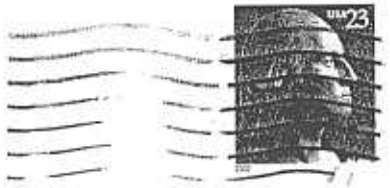
Name SANDRA EWER

Address 5700 CARBON CANYON RD. #49

City BREA E-Mail 0





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JUL 29 4
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
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Santa Ana, CA 92703

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Name DANIEL FEHNER

Address 1702 Eucalyptus st.

City Brea CA. E-Mail Concitato@Hotmail.com

D. FEHNER
1702 EUCALYPTUS
BREA, CA 92821

RECEIVED
JUL 29 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

09

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

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- I support increased traffic mitigation along Valencia Avenue.

Name Michelle D'Mello

Address 1104 Linden Way

City Brea E-Mail mdimea@ucsd.edu

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County of Orange
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Name Ed Reed

Address 1626 N. Dorothy Dr.

City Brea CA 92821 E-Mail

Reed
1626 N. Dorothy Dr.
Brea CA 92821

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Name Mike Lowe

Address 360 SEQUOIA AVE

City BREA E-Mail

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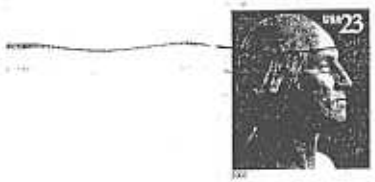
Name CHARLES HUNTER

Address 5700 CARBON CYN. RD. SP121

City BREA, CA E-Mail



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EXPANSION/EXTENSION, BUT IF THIS HAPPENS, A ROAD MUST BE BUILT TO GET TRASH TRUCKS OFF BREA'S STREETS

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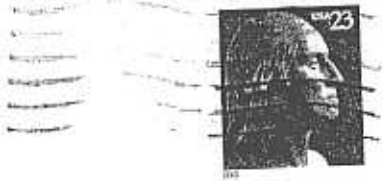
Name DIANE TAYLOR

Address 175 BUCKTHORN DRIVE

City BREA, 92823 E-Mail



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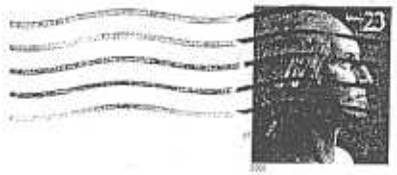
Name Ron & Joyce Ulshafer

Address 321 Roundtree

City Brea, CA E-Mail ulshafer@pobox.com

Ronald and Joyce Ulshafer
321 Roundtree Court
Brea, CA 92821



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27034S000

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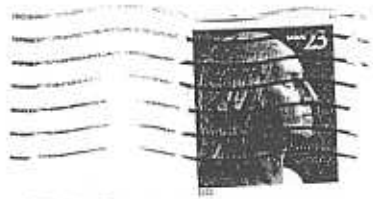
Name RICK & ANN MARSHALL

Address 1430 BEECHWOOD DR

City BREA, CA 92821 E-Mail BCCRICK50@TSN.CO

MARSHALL
1430 BEECHWOOD DR
BREA, CA 92821



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Name Robert E. Caldwell

Address 5700 Carbon Cyn. Rd.

City Brea E-Mail

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7002 5000

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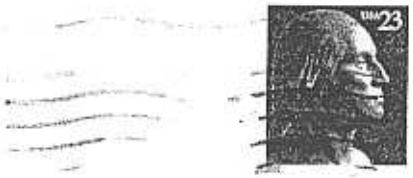
Name Lenore Anvick

Address 5700 Carbon Canyon Rd #55

City Brea E-Mail

Ms. Lenore Anvick
5700 Carbon Can Rd. Spc. 55
Brea, CA 92823



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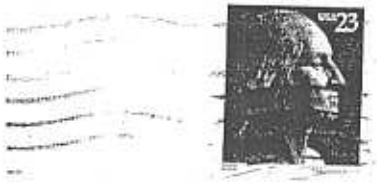
Name CARL B. WATTS

Address 297 ROUNDTREE CT.

City BREA E-Mail cbw11@hotmail.com



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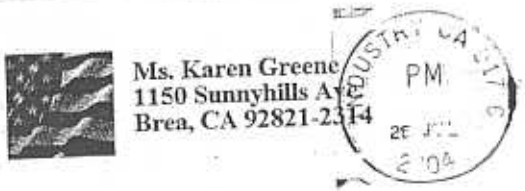
Name LYNN M. GREENE

Address 1150 SUNNYHILLS AVE

City BREA E-Mail LMGREENE@THALESRAYTHEON-US.COM



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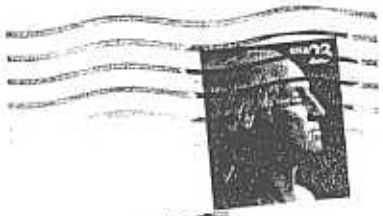
Name Virginia E. Grantham

Address 1726 E Eucalyptus St

City Brea 92821 E-Mail

Virginia Grantham
1726 E. Eucalyptus St.
Brea, CA 92821



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Name Linda & Eric Chapman

Address 222 Amberwick Cir.

City Brea 92821 E-Mail

Mr. & Mrs. Eric Chapman
222 Amberwick Cir.
Brea, CA 92821

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Name ____ Ms. I. Spiegl

Address ____ 117 Foxglove St.
Brea, CA 92821-4706

City ____ E-Mail ____

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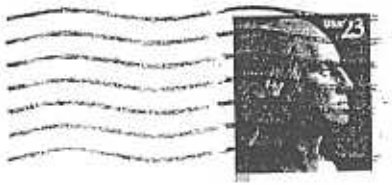
Name Mary and John Blaydes

Address 226 Delphia Ave

City Brea E-Mail ____

Ms. I. Spiegl
117 Foxglove St.
Brea, CA 92821-4706



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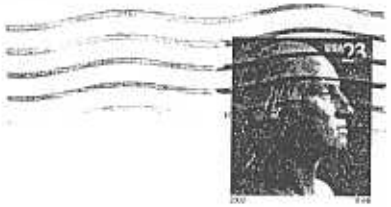
03

Mr. John Blaydes
226 Delphia Ave.
Brea, CA 92821-4012



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27703+6000

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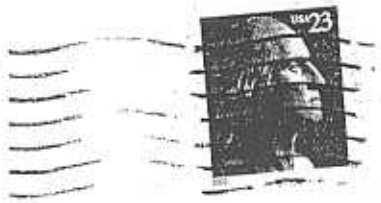
Name Mr and Mrs Craig Baker

Address 136 Donnybrook rd.

City Brea E-Mail

Craig Baker
136 Donnybrook
BREA, CA
92821



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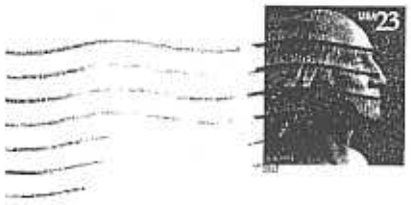
Name BLAZEK MR & MRS

Address 333 OLINDA DRIVE

City BREA E-Mail MBLAZEK2@CS.COM

Mr. & Mrs. M. F. Blazek
333 Olinda Dr
Brea, CA 92823-7041



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Name Brian Helms

Address 106 St Crispen

City Brea Ca 92821 E-Mail

Brian Helms
106 St Crispen
Brea Ca 92821

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7034-5000

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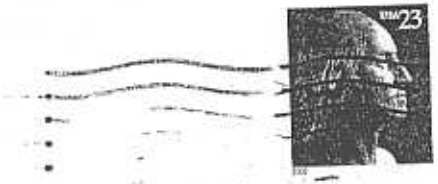
Name Evelyn Zucker Evelyn Zucker

Address 113 Acorn Circle

City Brea CA 92821 E-Mail

Mrs. Evelyn Zucker
113 Acorn Cir
Brea CA 92821



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Name Ron Daley

Address 2361 Skyline Dr.

City Brea, 92821 E-Mail

R.W. Daley
2361 Skyline Dr
Brea, CA. 92821

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27024-5000

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Name Jean Chung

Address 171 Starflower St

City Brea E-Mail

Chung
171 S. Starflower
Brea Ca 92821

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Name [illegible signature] Kate Johnson

Address 1025 Glen Canyon Way

City Brea, CA 92821 E-Mail Kjohnson@fullcoll.edu

1025 Glen Canyon
Brea, CA
92821

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270345000

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Name Ellen Mossey

Address 2116 Treeridge Cir

City Brea 92821 E-Mail

[redacted]

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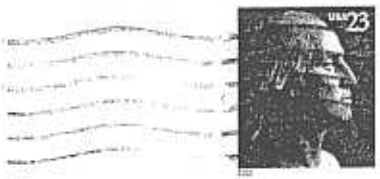
Name Jack Rider

Address 1132 Berenice Drive

City Brea, CA E-Mail

Mr. Jack M. Rider
P.O. Box 99
Brea, CA 92822-0099



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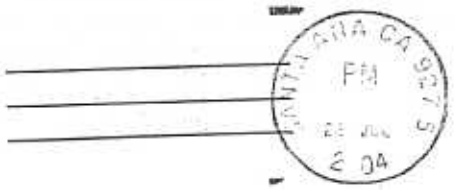
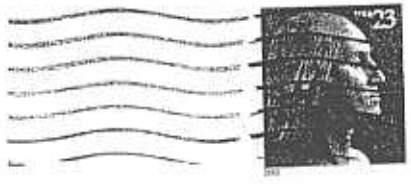
Name GARY & KATHRYN HANCOCK

Address 152 MORNING GLORY ST

City BREA E-Mail





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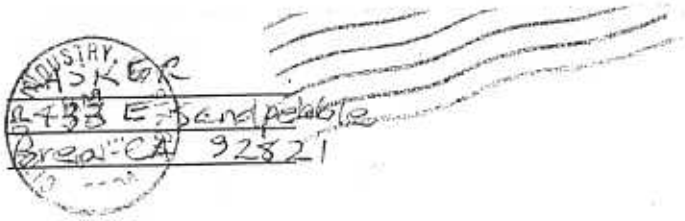
Name Marilyn Yorba Lesker

Address 2433 E. Sandpebble Ln.

City Brea CA 92821 E-Mail



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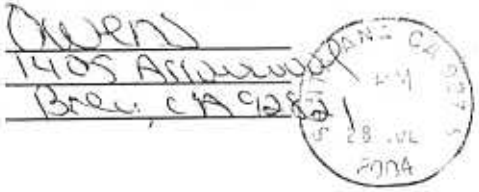
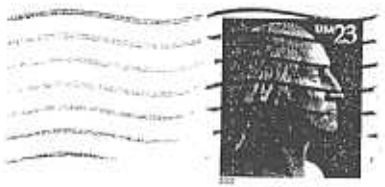
Name Michelle & Cliff Owens

Address 1405 Arrowwood

City Brea, CA 92821 E-Mail MAowens@Pacbell.net





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Name Kathryn H.K. Branman

Address 313 Buttonwood Drive

City Brea 92821 E-Mail kbranman@earthlink.net

PO Box 426
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County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

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- I support increased traffic mitigation along Valencia Avenue.

Name Tony Bell (TONY BELL

Address 1038 N. GLEN CANYON WAY

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Mr. Tony Bell
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Name Chris Jamison

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Please note: 4 Registered Voters below

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① Mrs. Martha Piroutek ③ Ms. Mary Jane Piroutek
② Dr. Gary Piroutek ④ Ms. Laura A. Piroutek

Name

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Name FRED & ANITA FELDMAN

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Name

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Mr. Herbert Ertel
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Name Jane M. O'Brien

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Name Melissa Jean Clifford

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Name David & Erin Wright

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Name Lesli Maul

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Name Eric Eichinger

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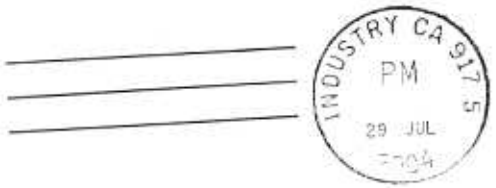

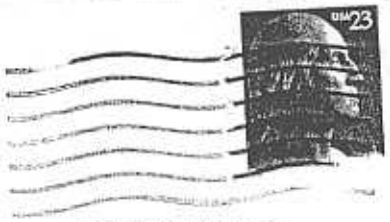

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Name DAVID NORRIS

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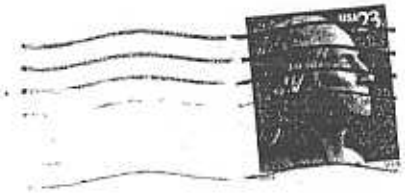

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Name Paul & Vicki Brewer

Address 2182 Arbor Circle

City Brea E-Mail ~~pvbre~~ pmbrewer@covad.net

Paul Brewer
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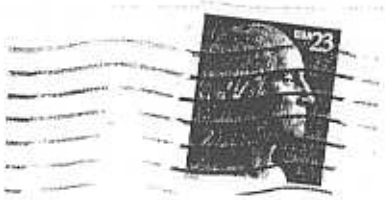
Brea CA 92821



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Name Leeanna Bremer

Address 1435 Ponderosa Ave

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Name Doug Buck

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Mr. Doug Buck
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Name

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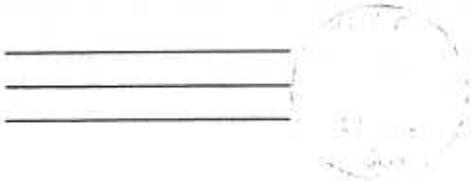

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Name Anne NOONAN

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Anne Noonan
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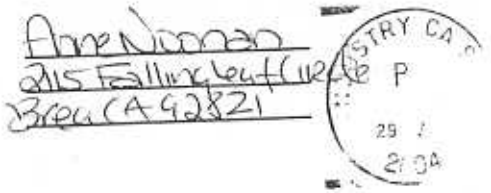

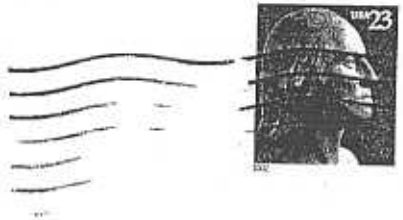

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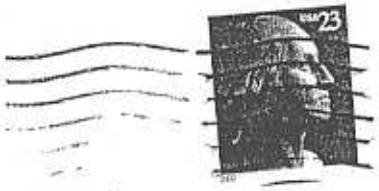
Save-the-Redwoods League



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Name MALVIN RYGH

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Name CRAIG S. KAMANSKY

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Name Christiane Shannon - Ch. Shannon

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Name Harry Miller

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Name Karin Stadaon

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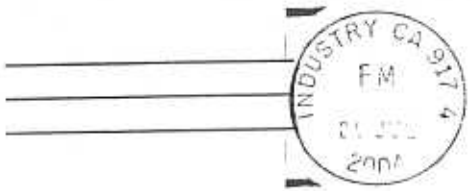

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name ELOISE KRIVOSHEIA

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Eloise H. Krivosheia
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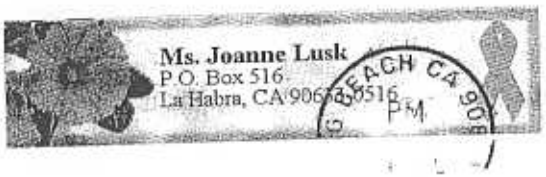
Name Joanne Lusk

Address P.O. Box 516

City La Habra 90633 E-Mail



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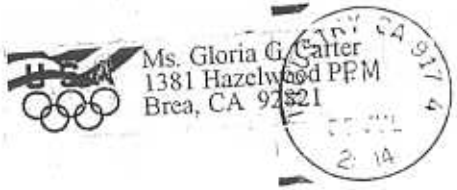
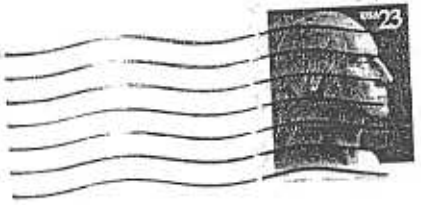
Name GLORIA CARTER

Address 1381 HAZELWOOD

City BREA E-Mail





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Name RUSS BAHLENHORST

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Name DUKE SHEA

Address 1382 STRATTFORD ST.

City BREA E-Mail DUKENYOU@aol.com

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Name DONNA AUSTIN

Address 1141 NORTH PALM ST

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D. SHEA
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County of Orange
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Name Carl & Betty Hillquist

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Name PAT WRIGHT Pat Wright

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Name Amy Tarnutowski

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Hello Ray

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Name Gale Haussmann

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Name RALPH + Pat Richardson

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R Richardson
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Name Keith Bowden

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Name Sandra L. Schmidth

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Name Cheryl & Joe Mendoza

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Name Richard + Mowita Kennedy

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City Brea, CA 92821 E-Mail mowitaKennedy@msn.c

RICHARD B. KENNEDY
MOWITA KARN-KENNEDY
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Name Karl Reitz

Address 941 W Pearl St.

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Name David Villancio-Wolter

Address 1231 Fawnridge Dr.

City Brea CA 92821 E-Mail david.vw@dslextreme.com

David Villancio-Wolter
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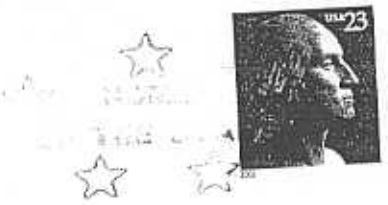

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Name TED BRYAN

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Name MAURICE F. SCOTT, JR.

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Mr. Maurice Scott
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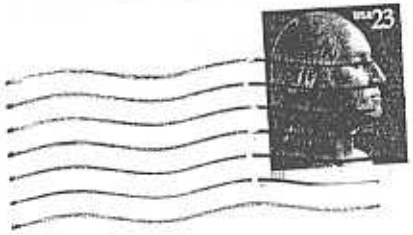

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Name Marty Chambers

Address 1585 N. Dorothy Drive

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Ms. Martha Chambers
1585 N Dorothy Dr.
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Name CAROL & RICHARD FLANDERS

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Name Peter Kurtz

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Name New Owner AT

Address 2085 FALLCREEK Cir.

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MARY Beth Carpenter

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Name CLAUDIA & Estella BUSHAW

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Name JACQUELINE HARRISON

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Name STEVE WILLIS

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Name David Ascencio + Sue Crider

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David and Sue Ascencio
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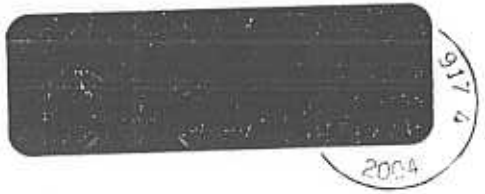
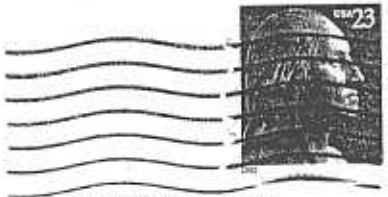
Name Rob and Leslie Ulrich

Address 357 Hilltop Lane

City Brea Ca 92821 E-Mail





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Name KEVIN R. BUSH

Address 3942 E. PRIMROSE

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Name Howard W. McCart Howard W. McCart

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County of Orange
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175 Copa De Oro Dr
Brea, CA

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92703+5000

92703+5000

Please listen to our requests !! We live and work in Brea !!!

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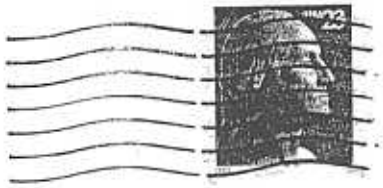
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Mike and Lorie April

Address 822 Shadowgrove Street

City Brea E-Mail mlapril@adelphia.net

Lorie April
822 Shadowgrove Street
Brea, CA 92821



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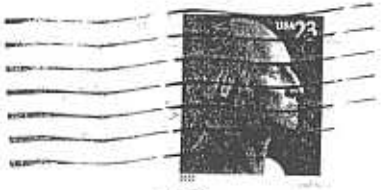
Name CAROL CALDWELL

Address 6092 OHIO ST

City YORBA LINDA 92886 E-Mail LUKKKEE@YAHOO.COM



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Name Greg Herr

Address 146 Coutry Club Dr

City Brea, CA 92821

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Name Dana Riser

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Greg Herr
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Dana R. Riser
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Name Jessie Palisin

Address 303 Windermere Circle

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Name Eileen Faulkner

Address 1001 N. Malibu Canyon Way

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1001 N Malibu Cyn.
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92821

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03 03

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Name Kelley M. Smith

Address 301 W. MT. View Ave. Apt. I

City La Habra E-Mail _____

Kelley Smith
Apt. I
301 W Mountain View Ave.
La Habra, CA 90631

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03

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Name Elmer and Grace Cheah.

Address 198 Morning glory St.

City Brea E-Mail classicalN542@AOL.Co.

Elmer & Grace
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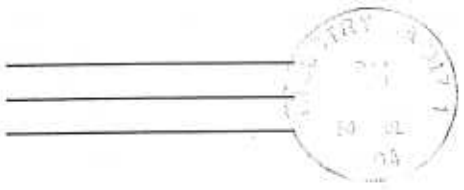
Name Kristen Rowland

Address 3860 Blue Gum Dr

City Yorba Linda E-Mail crseagull@aol.com



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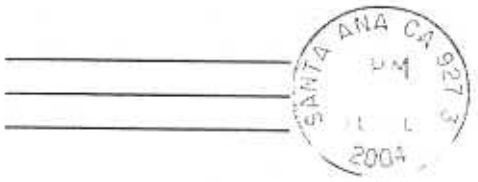
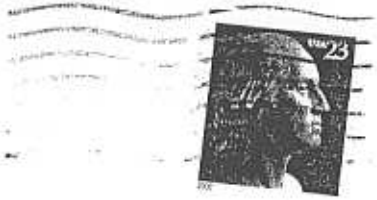
Name M. Tuttobene

Address 205 Verbena Ln

City Brea E-Mail





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Name William D. Madden

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City Brea E-Mail bd194@lafn.org

WILLIAM D.
830 AV
BREA, CA 92821

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Name Susan Espinoza

Address 529 S. Walnut St.

City Brea E-Mail

529 S. Walnut
Ave, Apt C
Brea

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Name Beverly, Michael, Melissa, & Kevin Hooper

Address 1050 N. Glen Canyon Way

City Brea E-Mail bevhooper@hotmail.com

The Hooper Family
1050 N. Glen Canyon Way
Brea, CA. 92821

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Name Jack S. Coldren + Amelia M Coldren

Address 4692 Woodhaven Dr
Yorba Linda CA 92886

City ~~Yorba~~ E-Mail

400 Amelia Coldren
4692 Woodhaven Dr.
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Name Daniel D. Alvarez

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City La Habra E-Mail ddalvarez24@yahoo.com

D. Alvarez
2241 Orchid Ave
La Habra, CA 90631

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Name Gregory Woodard

Address 2611 Wilshire Ave.

City La Habra, Ca. 90631 E-Mail

W
Greg Woodard
2611 Wilshire Ave
La Habra, CA 90631-5853

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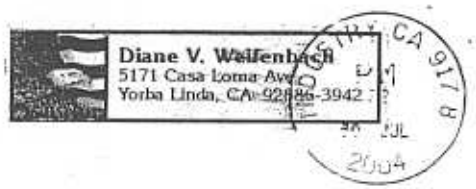
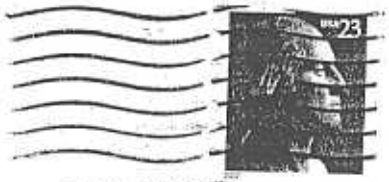
Name Diane Weifenbach

Address 5171 Casa Loma Ave

City Yorba Linda E-Mail Weifenbach@aol.com

Diane V. Weifenbach
5171 Casa Loma Ave
Yorba Linda, CA 92886-3942





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27034-3050

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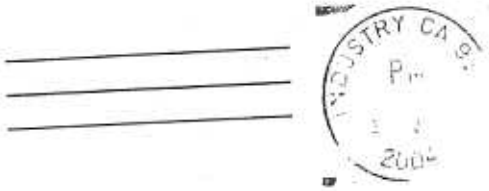
Name Ian Strachan

Address 2946 E. Shamrock Ave

City Brea 92821 E-Mail



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Name Kerry Diederich

Address 336 Heartwood Circle

City Brea E-Mail Diederich9@aol.com

Kerry Diederich
336 Heartwood Cir
Brea CA 92821

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Name

Address 2286 E. CRESTVIEW

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J S West
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Name Denise Calhoun

Address 946 E Avocado St

City Brea CA E-Mail

Denise Calhoun
946 Avocado St
Brea, CA 92821

I'm a supporter!

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Name TROY MATTSSON - TROY MATTSSON

Address 517 E BUTTONWOOD Dr. BREA CA 92821

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T. & S. Mattsson
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Name Troy & Pam Bellomy

Address 1255 Palm St.

City La Habra E-Mail

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Name NICK ARNOLD

Address 186 S. FLOWER HILL ST.

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Troy Bellomy
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Arnold
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Brea CA 92821

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Name Kathleen J Jardine

Address 948 W. Oakcrest Ave

City Brea E-Mail

Kathleen I. Jardine
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Brea, CA 92821-1826

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Name DAVID THIS

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Name J SCHUMACHER

Address 2268 CRESTVIEW

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Name Cindy Luna

Address 1231 Baldwin St

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Name HENRY BEERS

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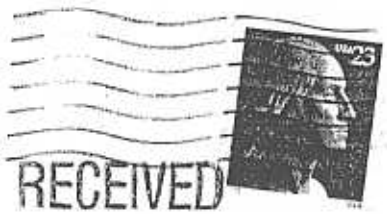
City LA HABRA CA. E-Mail HANKY B @ EARTHLINK .NET

HANK BEERS
1400 LAUNER
LA HABRA CA



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Name Ed Schuman

Address 4310 Willow Tree Ln

City Yorba Linda E-Mail

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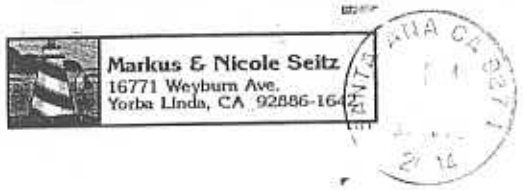
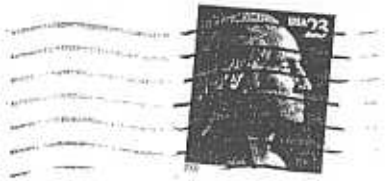
Name Markus & Nicole Seitz

Address 16771 WEYBURN AVE

City YORBA LINDA CA E-Mail headlaunchegalaw.com





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Name Bridgette & Robert Pinsky

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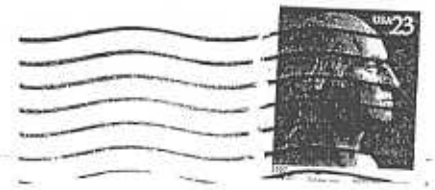
1450 Tamarack Ave
Brea, CA 92821



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AUG 02
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

70345000

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension.
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Dick & Peggy Heard

Address 2404 Stony Ln.

City Brea E-Mail peghearde@pacbell.net

Heards
2404 Stony Ln
Brea, CA 92821

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AUG 02 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

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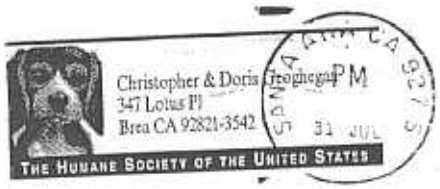
Name CHRISTOPHER & DORIS GEOGHEGAN

Address 347 LOTUS PLACE

City BREA E-Mail



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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5000

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Name David Elliott

Address 720 W. Pinehurst

City La Habra E-Mail

M. Anderson
D. Elliott
720 W. Pinehurst
La Habra, CA
90631

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AUG 02 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

03

ATTACHMENT F

LATE COMMENT LETTERS

Ellen Hull
224 Hilltop Ln.
Brea, Ca. 92821

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I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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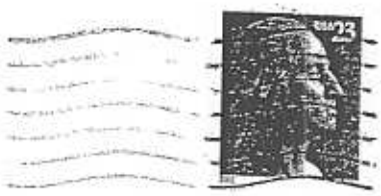
- I ~~support~~ establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Ellen & Ethel Hull

Address 224 Hilltop Ln.

City Brea, 92821 E-Mail

Ms. Carol Knobbe
268 Buttonwood DR
Brea CA 92821-3512



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AUG 03 2004
IWMD

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27034+5000

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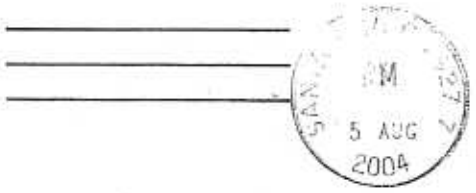
Name _____

Address _____

City _____ E-Mail _____



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AUG 06 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27034-5000

DO NOT CATER TO THIS SPECIAL INTEREST! HELLS FOR EVERYONE PUT THESE OUT. THEIR INTEREST IS NOT FOR THE PUBLIC GOOD. THEY ARE INVOLVED IN A SELFISH PURSUIT TO STEAL LAND WITHOUT COMPENSATION!

~~In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:~~

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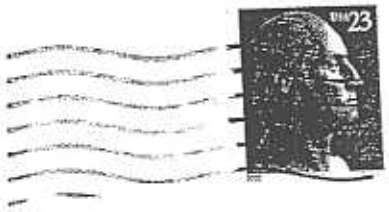
- ~~I support establishment of a mitigation fund to buy open space in the Brea region.~~
- ~~I support increased traffic mitigation along Valencia Avenue.~~

Name MILES BUSH

Address 1339 WOODCREST AVENUE

City BREA E-Mail

Gary E. J. Kain
195 Bucktlorn Dr.
Brea, CA 92823-7004



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AUG 09 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703+5060

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- I support increased traffic mitigation along Valencia Avenue.

Name GARY E. KAIN

Address 195 BUCKTHORN DRIVE

City BREA, CA 92823 E-Mail GEKAIN@AOL.COM

Bev & Al Bertulli
5610 Wesham Pl
Brea, CA 92821-7205

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AUG 09 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

[redacted]

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

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- (•) I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.
- (•) I support establishment of a mitigation fund to buy open space in the Brea region.
- (•) I support increased traffic mitigation along Valencia Avenue.

Name AL BERTULLI

Address 5610 WESHAM PLC
BREA CA 92821

[redacted]

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, August 17, 2004 10:10 AM
To: Hull, Ray
Cc: Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

-----Original Message-----
From: Shannon Cronin [mailto:shannonlcronin@yahoo.com]
Sent: Monday, August 16, 2004 8:37 PM
Subject: Dump the Trucks at OAL!

Toner Canyon would be a great solution as an access road to the Landfill. If there's any way you can help get this project underway, please do! We have a daughter who's almost 1 and it's a scary thought that she might hav eto walk on Valencia (once ther school is there on the corner of Rose) with huge trucks/semis racing up the road to the landfill. There are so many of them all day! It's very distrubing. Please help in any way you can! Thank you.

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

The Environmental Impact Report shows that almost all the intersections in Brea that are used by landfill traffic will experience an increase in congestion with this project. The DEIR does not offer mitigation that will restore these congested roads and intersections to the levels that are equal to the 'no project' level? This must be accomplished.

Air quality is also a great concern to me. This project will continue to impact air quality here in Brea. The County should reduced air pollution levels for this project so they are equal to the 'no project' levels. I am disappointed that certain air pollutants will exceed AQMD's thresholds by more than twenty times. The amount of pollution must be reduced, especially around the area of Birch St. and Valencia Ave. where our new sports park will be built.

As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Shannon Cronin
514 Cardinal Street
Brea, CA 92823

SANTA ANA CA 927 64
PM
21 AUG
2004

GREETINGS FROM

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AUG 23 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27033+5000

In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

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- I support increased traffic mitigation along Valencia Avenue.

Name Linda Sargent

Address 1017 Woodcrest Ave

City Brea CA 92821 E-Mail

210 Lilac Lane
Brea, CA 92823

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SEP 08
IWMD
HUMAN RESOURCES

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

27034-5000

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- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name STAN RASKOVIC

Address 210 Li'lac Lane

City Brea E-Mail

Hull, Ray

From: Amirhosseini, Susan on behalf of OAL, RELOOC
Sent: Tuesday, September 14, 2004 11:16 AM
To: Hull, Ray
Cc: Hagthrop, Linda
Subject: FW: Dump the Trucks at OAL!

FYI - just came in today.

-----Original Message-----
From: Gwen Murray [mailto:gwen_murray@yahoo.com]
Sent: Tuesday, September 14, 2004 10:58 AM
Subject: Dump the Trucks at OAL!

The expansion of Brea's landfill is of great concern to me. I do not want the traffic going to the landfill on Brea's streets anymore. If the City and County are determined to extend this landfill, then you must find an alternative traffic route to the landfill. This could be accomplished by using Tonner Canyon for a private, environmentally friendly access road or by closing the landfill on time in 2013. This road should be built as soon as possible to help alleviate the traffic nightmares that we already experience here in Brea. I am disappointed that the DEIR does not offer any realistic solutions to remove landfill traffic from Brea's streets, as residents had requested. The EIR must contain its own study for a western access road to the landfill.

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As for the regional park on top of the landfill, the county must replace the lost acres to a new park with the city limits of Brea. Olinda Regional Park should also be redesigned to what the Citizens Advisory Committee had originally planned in 1994.

Sincerely,

Gwen Murray
3941 Landmark Lane
Brea, CA 92823

714-996-4920

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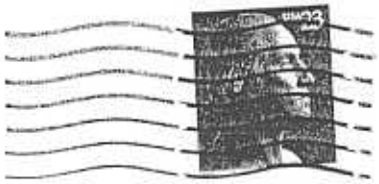
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name Phil, Shirley, & Janine Hooper

Address 4443 Ave. Rio Del Oro

City Yorba Linda E-Mail _____

Janine Hooper
4443 Ave. Rio Del Oro
Y.L., CA 92887



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SEP 27 2004
I.W.M.D

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Kim Jensen

Address 1801 VIRAZON DR.

City La Habra Hts. E-Mail _____

Kim Jensen
P.O. Box 547
La Habra, CA 90633-0547

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SEP 13 2004
I.W.M.D

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Lester B. Anderson

Address 240 Lilac Lane

City Brea CA E-Mail dollie240@aol.com

Lester B. Anderson
240 Lilac Lane
Brea, CA 92823-7830

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SEP - 9 2004
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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Nita & Paul Causey

Address 225 Boardtree Ct

City Brea E-Mail nitacausey@yahoo.

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Nancy + Jim Novak

Address 126 Ambling Dr

City Brea E-Mail JNNOVAK@Surfside.net

Novak
126 Ambling
Brea, CA

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

703+5000

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Name Sharon Farrell

Address 1245 Palm

City LaHabra E-Mail Sharfar@hotmail.com

Ms. Sharon Farrell
1245 N Palm St
La Habra CA 90631-3269

2004

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AUG 30 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Jon Taylor

Address 2301 Ramona Ave

City La Habra E-Mail JSTAYLOR@FULLERTON.EDU

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I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Pat Schwind

Address 2595 E. Flanders Ct.

City Brea CA 92821 E-Mail

Mrs. Patricia Schwind
2595 Flanders Ct
Brea CA 92821-4666

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AUG 27 2004
I.W.M.D

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Michael Green

Address 4332 Hillside Road

City Brea E-Mail

Michael & Rosemary Green
4332 Hillside Rd.
Brea, CA 92823

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AUG 26 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Janet E. Johnson

Address 12591 Whittier Ave

City Brea 92821 E-Mail

Mr. Thomas E. Johnson
12591 Whittier Ave.
Brea, CA 92821

RECEIVED
AUG 24 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name TERESA TOWNSEND

Address 514 W. HIGHLANDER

City LA HABRA E-Mail ✓

Ms. Teresa Townsend
514 Highlander Ave
La Habra, CA 90631-3708

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AUG 23 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Barbara A. Cote
Unit 32
985 S. Idaho St.
La Habra, CA 90631

Address _____

City _____ E-Mail BarbaraAnnCote@earthlink.net

Barbara A. Cote
Unit 32
985 S. Idaho St.
La Habra, CA 90631

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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AUG 20 2004
I.W.M.D.

92703+5000

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Name Jeff Denchfield

Address 173 N. Thistle Rd

City Brea E-Mail

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AUG 19 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

03

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Name Kathryn Gomez

Address 1439 Whittier Ave

City Brea E-Mail KT.Gomez@verizon.n

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AUG 19 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name Dorothy A. Lamb

Address 5708-108 Carbon Cyn. Rd.

City Brea 92823 E-Mail yom@earthlink.net

D.A. LAMB
5708-108 Carbon Cyn Rd.
Brea 92823

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AUG 13 2004
I.W.M.D.

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Integrated Waste Management Department
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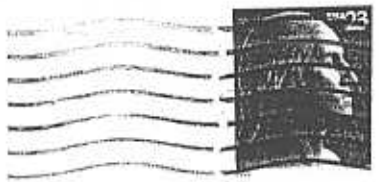
Name Arthur P. C. King

Address Mr. Arthur P. C. King
387 Nutwood St.
Brea, CA 92821

City

E-Mail

Mr. Arthur P. C. King
387 Nutwood St.
Brea, CA 92821



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Integrated Waste Management Department
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Name _____

Address _____

City _____ E-Mail _____

Pauline M. Rogers
680 Juniper Way
La Habra, CA 90631-5905

Pauline M. Rogers
680 Juniper Way
La Habra, CA 90631-5905

RECEIVED
AUG 11 2004
I.W.M.D.

Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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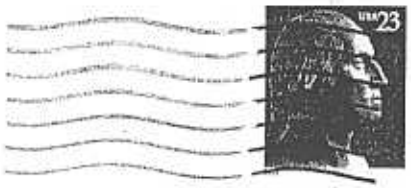
Name PETER K. EYMERT, SR.

Address 5700 CARBON CANYON

City BREA, CA 92823 E-Mail YES

P. K. EYMERT SR
5700 CARBON CANYON
BLDG. 75
BREA, CA. 92823



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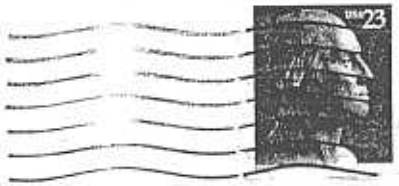
- I support increased traffic mitigation along Valencia Avenue.

Name Ginger Krelle

Address 4312 San Pablo Cr.

City Yorba Linda E-Mail mndseye1@aol.com

Ginger & Bill Krelle
4312 San Pablo Circle
Yorba Linda, CA 92886



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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Name RALPH JAKUERTH

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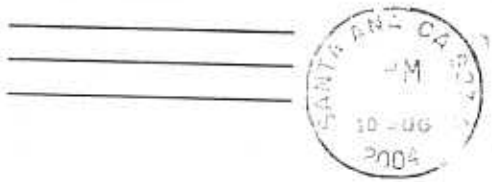

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Name Tom Dunford

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Dunford
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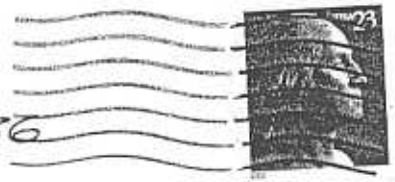
Yorba Linda, CA 92886



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Integrated Waste Management Department
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Name Harold Sintov

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Name Mrs. Marjorie Townsend

Address 520 N. Montevista St.

City La Habra E-Mail —

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
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Name Michelle Feamster

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City Brea E-Mail —

Ms. Michelle Feamster
343 Heartwood Cir
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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

92703435000

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Name Veronica Fewal

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City Brea E-Mail

Fewal
2455 Branch
Brea, CA 92821 26 AUG PM

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Name DAVE PEBLEY

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Name Susan Griesbach

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92887

ANA. CA
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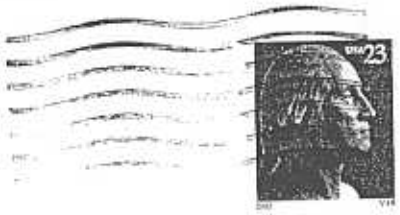

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Name Eric Parra

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Name Trish Hacking

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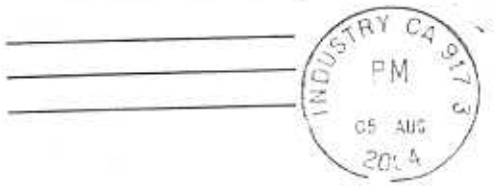

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Name Kris + Rod St Clair

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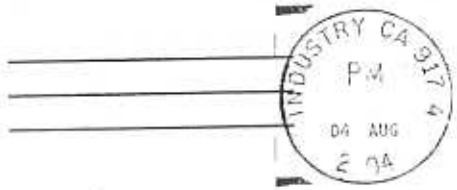
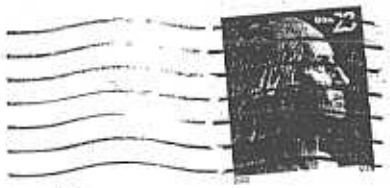
City Brea CA E-Mail Kristwstclair@aol.com





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Name Elke Crutchfield

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City Brea E-Mail

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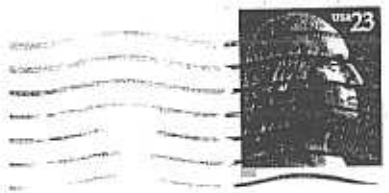
Name Diana Johnson

Address 245 Verbena Lane

City Brea E-Mail EricOrevenuecost.com

Mrs. Diana Yvette Johnson
245 Verbena Ln
Brea, CA 92823



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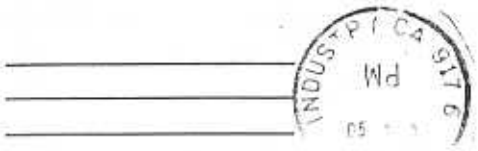
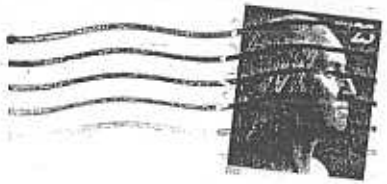
Name Eric Johnson

Address 245 Verbena Lane

City Brea E-Mail eric@revenuecost.com





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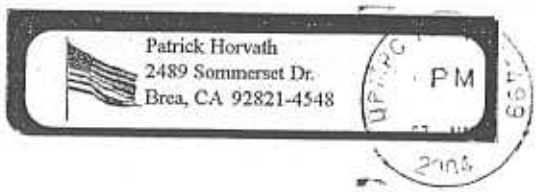
Name Carol Horvath Carol Horvath

Address 2489 Sommerset DR.

City BREA, CA 92821 E-Mail



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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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Tonner Canyon is a jewel and a necessary part of the wildlife corridor attaching Orange County to LA County

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Name Gloria Schlaepfer

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Gloria G. Schlaepfer
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Name TERESA STUART

Address 2123 WILDFLOWER CIR

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Name TIM McCALLISTER

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The McCallisters
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INDUSTRY, CA 917
PM
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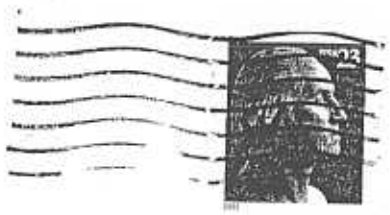

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Name L Soto

Address 1366 Summit Lake Cir

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L SOTO
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Mr. Ray Hull
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Integrated Waste Management Department
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Name Mrs. Marian Sussman

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Mrs. Marian Sussman
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Integrated Waste Management Department
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Name Hal and Maureen Clark

Address 2119 Treeridge Circle

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Mr & Mrs Hal Clark
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Name MILT BURDICK, JEAN O'CONNELL

Address 5700 CARBON CANYON Rd #131

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Mil Burdick
5700 Carbon Canyon Rd #131
Brea CA 92823

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Name GARY A. RICHLE

Address 2594 E. Chelsea Ct.

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27703+5000

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Name Steve & Janeen Henderson

Address 232 Roundtree Court

City Brea E-Mail

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Name R. Stephen Simons

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Mr. Ray Hull
County of Orange
Integrated Waste Management Department
320 N. Flower Street, Suite 400
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BARRY FRIEDMAN
203 OLIVE PLACE
BREA CA 92821

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Name _____

Address _____

City _____

Barry Friedman
203 Olive Place
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Name Paul & Kay Madore

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Name Betty Elsing

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Name R Allen

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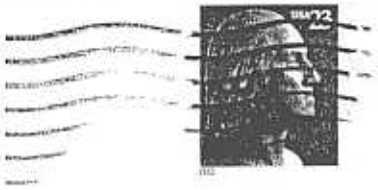

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Name Allen Quirk

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Mr. Ray Hull
County of Orange
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320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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- I support increased traffic mitigation along Valencia Avenue.

Name Harold L. Ehlers

Address 2132 FALLING LEAF CIRCLE

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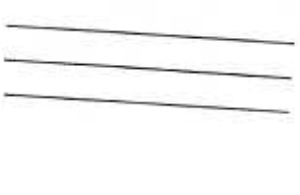

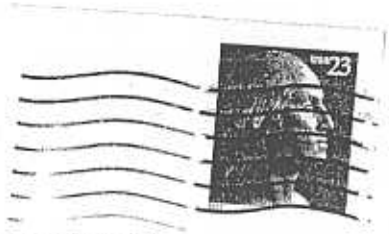

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Name Norma J. Allen

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92703+5000

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Name Lori Rush

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Name Denise Eastin / Schuyler Eastin

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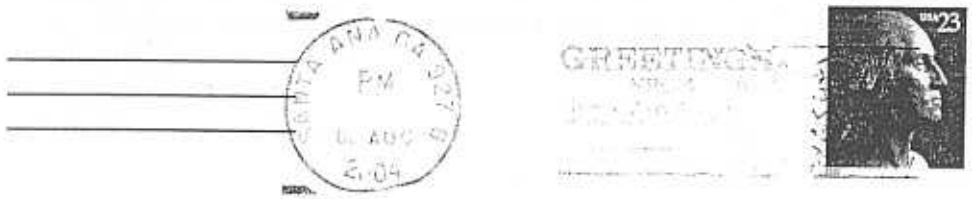

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Name Kellie Tripp

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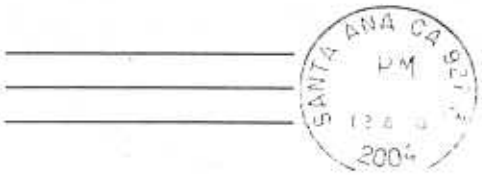

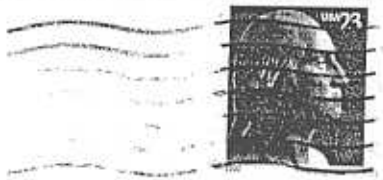

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Name [redacted] LINDA ACOSTA

Address 950 W. LAMBERT RD. #2

City LA HABRA E-Mail

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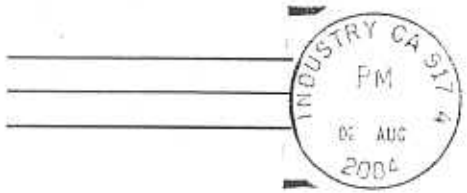
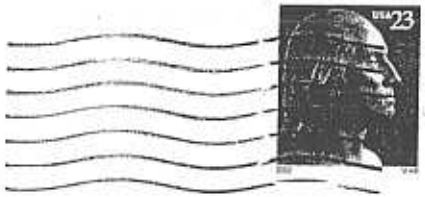
Name D. Lona

Address 156 S. Flower Hill

City BREA E-Mail

ARMANDO R ESPARZA
950 W LAMBERT RD UNIT 2
LA HABRA CA 90631-8908





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Mr. Ray Hull
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[redacted]
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Name Holly McKnight

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City Brea E-Mail

Michael & Holly McKnight
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Brea, CA 92821

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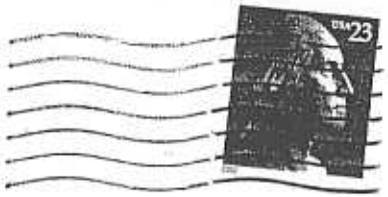
Name Pam Lopez

Address 1009 Ethelinda Way

City Brea, CA E-Mail



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Name LAURA JOSEPH

Address 2547 E. Skyline Drive

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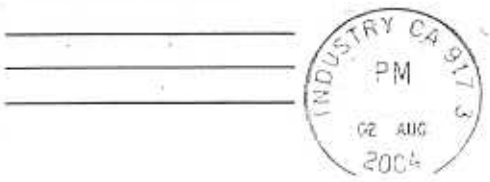

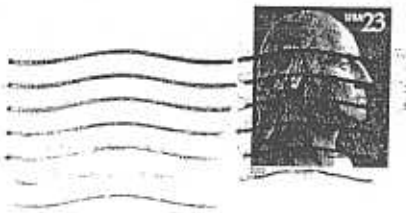

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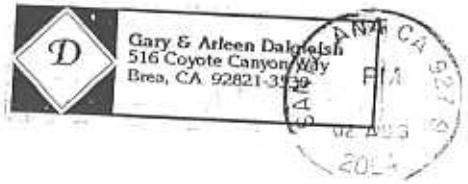
Name Gary & Arleen Dalgleish

Address 516 Coyote Canyon Way

City Brea 92821 E-Mail



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Name Mary Clark

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M. Clark
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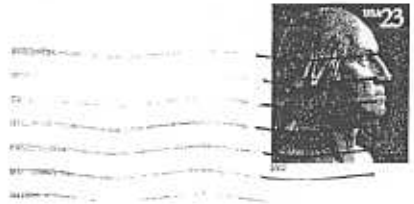

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Name John and Jeanne Back

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Name JAMES ALBERT

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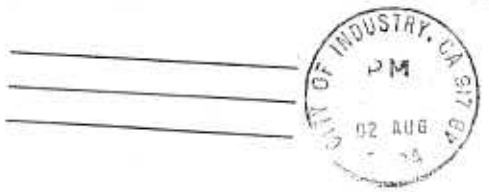

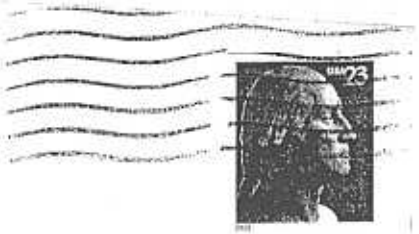

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Name Donna Eisenberg

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Name ROGER VAN OPPENS

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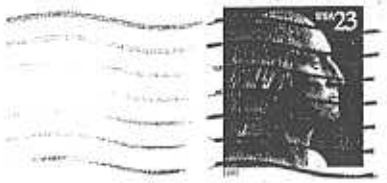

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Name Gayle Catalde

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Name Mary Glaser

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Proud Supporter of The Wildlife Land Trust

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In response to the Draft Environmental Impact Report on the Olinda Landfill Expansion please note that:

- I oppose the Olinda Landfill expansion and extension.
- I oppose using mitigation funds to build an alternate access road to the landfill in Tonner Canyon.
- I support establishment of a mitigation fund to buy open space in the Brea region.
- I support increased traffic mitigation along Valencia Avenue.

Name J Paul Ob

Address 832 E Cameron Ct

City Brea Ca 92821

L. Bombino
PO Box 36
La Habra CA 90633

AUG 18 2004

RETURN TO SENDER
NO SUCH ADDRESS

Mr. Ray Hull
County of Orange
Integrated Waste M
320 N. Flower Stree
Santa Ana, CA 9270

nvironmental Impact Report
nsion please note that:

Landfill expansion and extension.
ation funds to build an alternate
ndfill in Tonner Canyon.
ent of a mitigation fund to buy
Brea region.
ed traffic mitigation along Valencia

L. Bombino
36 (1260 Brookdale Ave)
E-Mail lbombino@juno.com

ATTACHMENT G

ADDITIONAL VIEW SHED ANALYSIS

- Olinda Alpha Landfill -

- 2004 Condor Avenue and Hawks Drive -
Summer/Fall

- Olinda Alpha Landfill -

- 2013 Condor Avenue and Hawks Drive -
Summer/Fall

- Olinda Alpha Landfill -

- 2021 Condor Avenue and Hawks Drive -
Summer/Fall

- Olinda Alpha Landfill -

- 2004 Condor Avenue and Hawks Drive -
Winter/Spring

- Olinda Alpha Landfill -

- 2013 Condor Avenue and Hawks Drive -

Winter/Spring

- Olinda Alpha Landfill -

- 2021 Condor Avenue and Hawks Drive -
Winter/Spring

- Olinda Alpha Landfill -

- 2004 East Lambert Road and Sunflower Street -
Summer/Fall

- Olinda Alpha Landfill -

- 2013 East Lambert Road and Sunflower Street -
Summer/Fall

- Olinda Alpha Landfill -

- 2021 East Lambert Road and Sunflower Street -
Summer/Fall

- Olinda Alpha Landfill -

- 2004 East Lambert Road and Sunflower Street -
Winter/Spring

- Olinda Alpha Landfill -

- 2013 East Lambert Road and Sunflower Street -

Winter/Spring

- Olinda Alpha Landfill -

- 2021 East Lambert Road and Sunflower Street -
Winter/Spring

- Olinda Alpha Landfill -

- 2004 North Ridge Trail -

Summer/Fall

- Olinda Alpha Landfill -

- 2013 North Ridge Trail -

Summer/Fall

- Olinda Alpha Landfill -

- 2021 North Ridge Trail -

Summer/Fall

- Olinda Alpha Landfill -

- 2004 North Ridge Trail -

Winter/Spring

- Olinda Alpha Landfill -

- 2013 North Ridge Trail -

Winter/Spring

- Olinda Alpha Landfill -

- 2021 North Ridge Trail -

Winter/Spring

ATTACHMENT H

ADDITIONAL VIBRATION STUDY

TRC

Customer-Focused Solutions

October 11, 2004

Mr. Bob Richmond
Orange County Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, California 92703

Subject: Transmittal of Vibration Analysis Technical Report, Olinda Alpha Landfill

Dear Mr. Richmond:

Enclosed are two copies of the technical report titled *Olinda Alpha Landfill Expansion Community Ground-Borne Vibration Study*. The study was conducted to measure vibrations from existing heavy truck traffic associated with the Olinda Alpha Landfill, to provide a basis for determining whether truck traffic associated with the planned landfill expansion will have a significant ground-borne vibration impact. The planned landfill expansion is not expected to change the character of existing truck traffic, but will extend the landfill life so that truck traffic will continue for approximately seven years beyond that currently permitted.

The study described in the enclosed report measured vibrations from existing landfill-related truck traffic in residential areas on the landfill haul route at the following four locations within the City of Brea:

- N. Placentia Avenue south of E. Imperial Highway
- Castlegate Lane north of E. Imperial Highway
- Sandpiper Way east of Valencia Avenue
- Santa Fe Road east of Valencia Avenue

At each of these locations, measurements taken included sample points representing ground-borne vibrations at the residential structures closest to the roadway.

Of all four locations, the maximum measured ground-borne vibrations at the closest residential structures occurred at Castlegate Lane north of E. Imperial Highway where residences are relatively close to the roadway. The measured ground-borne vibrations at the closest residential structures at this location, and the calculated ground-borne noise based on these measured vibrations, are as follows:

RMS VELOCITY LEVEL	NOISE LEVEL	PEAK PARTICLE VELOCITY
82 VdB	42 dBA	0.50 in/sec

The root-mean-square (RMS) velocity and ground-borne noise level are used to assess human response to ground-borne vibration, while the peak particle velocity is a better measure of the

21 Technology Drive • Irvine, California 92618
Telephone 949-753-0101 • Fax 949-753-0111

potential for vibrations to cause damage to structures. Relative scales and values for each of these parameters are described in the enclosed report. The maximum measured 82 VdB RMS velocity level and the associated ground-borne noise level fall into the range of values that the Federal Transit Administration (FTA) has determined is "distinctly perceptible." The measured level is below the level at which most people would be strongly annoyed by the vibration.

As shown in Table 2-1 of the enclosed report, the threshold for human annoyance is far below the threshold for potential damage to structures. Accordingly, since the landfill truck haul route includes residential streets with structures relatively close to the roadway, the potential human response will determine the ground-borne vibration and ground-borne noise levels below which there will be "less than significant" environmental impact. Establishing a reasonable ground-borne vibration level significance threshold based on the potential for human annoyance will automatically be protective to structures.

We know of no established regulatory threshold for ground-borne vibrations or noise. Human response depends on the sensitivity of the individual, the environmental setting (e.g., quiet residential, urban residential) and the time of day (e.g., potentially higher sensitivity during sleeping or other quiet hours). Some important considerations for landfill related truck traffic include:

- Truck traffic is limited to a portion of the day (typically around 7 a.m. to 4 p.m.) Monday through Friday, plus a lower level of traffic on Saturday.
- Peak landfill related truck traffic occurs near the middle portion of the day.
- Vibrations from individual truck passes occur for a very short duration.
- There is no landfill truck traffic on Sunday.

These characteristics help to limit the extent to which human annoyance might be expected compared to projects such as rail transportation or construction related pile-driving where longer duration vibrations may occur up to 24-hours per day and 7 days per week.

Since the ground-borne noise levels are calculated from the ground-borne vibration, significance criteria need only address ground-borne vibration. For the landfill-related truck traffic, a reasonable threshold for determining ground-borne vibrations to have a significant impact could be established at either 88 VdB or 85 VdB. Using either of these threshold levels, the vibrations measured at the closest residences to the street pursuant to the study described in the enclosed report would be less than significant. The following paragraphs describe the rationale for establishing the significance threshold at either 88 VdB or 85 VdB.

A threshold of 88 VdB would correspond with the level at which FTA has determined ground borne vibration is "unacceptable" due to adverse human response (see Table 2-1 in the enclosed report). In addition, based on the distribution of ground-borne vibration spectra measured for this study, 88 VdB would be the upper threshold for the range of recommended daytime vibration for residential spaces in American National Standards Institute (ANSI) S3.29 "Guide to Evaluation of Human Exposure to Vibration in Buildings."

A threshold of 85 VdB would be a somewhat more conservative significant impact threshold.

Ground-borne vibrations below this threshold would be well within the range of recommended daytime vibration for residential spaces in ANSI S3.29 and would be within the range of "distinctly perceptible" or below the threshold of human perception (see Table 2-1 in the enclosed report). Within the 75 VdB to 84 VdB range, the level of human annoyance strongly depends on the sensitivity of the individual and other factors such as those described above. Vibrations in this range will not be strongly annoying to most people. Considering the characteristics of the landfill-related traffic, in particular, the limited hours of occurrence, this level of vibration would be a more conservative significance threshold. It would be more protective to sensitive individuals than the 88 VdB threshold described above.

Please call me at 949-697-7169 if you have questions.

Sincerely,

Joseph L. Stenger

Joseph L. Stenger, R.G., R.E.A.
Project Director
JLS/rw

cc: John Arnau, IWMD
Eric Walther, TRC

Acentech

Project No. 616990
Report No. 342

OLINDA ALPHA LANDFILL EXPANSION COMMUNITY GROUND-BORNE VIBRATION STUDY

Prepared by:
Ramon E. Nugent
Acentech Incorporated
1429 E. Thousand Oaks Blvd., Suite 200
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September 2004

Submitted to:
TRC
21 Technology Drive
Irvine, CA 92618

Prepared for:
Orange County Integrated Waste Management Department
320 N. Flower Street, Suite 400
Santa Ana, CA 92703

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TABLES

FIGURES

EXECUTIVE SUMMARY

This ground-borne vibration report presents the results of vibration measurements made adjacent to roads used to access the Olinda Alpha Landfill in Brea, California. Measurements were performed on September 16, 2004 adjacent to four intersections:

1. N. Placentia Ave and E. Imperial Highway
2. Castlegate Lane and E. Imperial Highway
3. Sandpiper Way and Valencia Ave
4. Santa Fe Road and Valencia Ave

This report includes in Chapter 1 a discussion of ground-borne vibration, human perception of vibration, and factors influencing the propagation of vibration. Vibration evaluation criteria are presented in Chapter 2. The measured levels of vibration are presented in Chapter 3.

The focus of the study described herein was to obtain vibration measurements and ground-borne noise values for existing traffic conditions, including landfill-related traffic, that would enable the evaluation of potential impacts of vibrations in residences adjacent to haul routes due to heavy truck traffic associated with the landfill. The locations of the measurements and the measured vibration and calculated ground-borne noise values for existing landfill-related heavy truck traffic are summarized below.

MEASUREMENT LOCATION	VIBRATION AND GROUND-BORNE NOISE AT CLOSEST RESIDENCES
N. Placentia Ave. south of E. Imperial Highway	• Vibration levels are an order of magnitude below Caltrans published thresholds for potential architectural or structural building damage. • Vibration and ground-borne noise levels are below the U.S. Department of Transportation Federal Transit Administration (FTA) published threshold of human perception.
Castlegate Lane north of E. Imperial Highway	• Vibration levels are well below Caltrans published thresholds for potential architectural or structural building damage. • Vibration and ground-borne noise levels are in the upper half of the FTA published "distinctly perceivable" range. According to FTA, many people will find transit-induced vibration and ground-borne noise unacceptable at this level. The vibration level is below the threshold at which most people would be strongly annoyed.
Sandpiper Way east of Valencia Ave	• Vibration levels are well below Caltrans published thresholds for potential architectural or structural building damage. • Vibration and ground-borne noise levels in the lower half of the FTA published "distinctly perceivable" range. According to FTA, many people will find transit-induced vibration unacceptable at this level. However, the measured level is below the level at which most people would be strongly annoyed.
Santa Fe Road east of Valencia Ave	• Vibration levels are well below Caltrans published thresholds for potential architectural or structural building damage. • Vibration and ground-borne noise levels are near the middle of the FTA published barely perceivable range.

1 GROUND-BORNE VIBRATION

The Federal Transit Administration (FTA) and the California Department of Transportation (Caltrans) have published guidance for preparing and reviewing transportation noise and vibration analysis (1, 2).

1.1 GROUND-BORNE VIBRATION AND NOISE

Ground-borne vibration can impact nearby neighbors of a major truck route causing buildings to shake and rumbling sounds to be heard inside. The effects of ground-borne vibration include feelable movement of the building floors, rattling of windows, shaking of items on shelves or hangings on walls, and rumbling sounds. In extreme cases, the vibration from blasting and pile driving during construction can cause damage to buildings. The threshold of perception is an order of magnitude below the damage threshold for normal buildings.

The source of ground-borne vibration is the rolling of vehicle wheels on the surface of the road, creating vibrational energy that is transmitted through the roadbed and into the ground. The amount of energy that is transmitted into the ground depends on factors such as how smooth the road surface is, the weight of the vehicle, the speed of the vehicle and the resonance frequencies of the vehicle suspension system. These systems have resonances, which result in increased vibration response at certain frequencies.

The vibration excites the adjacent ground creating waves that propagate through soil and rock strata to the foundations of nearby buildings. The waves propagate from the foundation throughout the remainder of the building structure. The maximum vibrational amplitudes of the floors and walls of a building often will be at the resonant frequencies* of various components of the building.

The amplitude of particle motion may be described three ways:

1. **Particle displacement** - the distance the soil particles travel from their original position. Units are millimeters (mm) or inches (in).
2. **Particle velocity** - the velocity of the soil particles. Units are inches per second (in/sec) or millimeters per second (mm/sec). Sometimes expressed logarithmically in decibels (dB) with reference to a specified unit of velocity such as 10^{-6} in/sec, or 10^{-6} mm/sec.
3. **Particle acceleration** - the acceleration of the soil particles. Units are inches per second per second (in/sec2), millimeters per second per second (mm/sec2), or g-force (g = acceleration of gravity = 32.2 feet per second per second (ft/sec2) = 9.81 meter per second per second (m/sec2). Sometimes expressed logarithmically in decibels (dB) with reference to a specified unit of acceleration, such as 1 g, or 10^{-6} g.

* Resonant frequency of a structure is dependent upon its stiffness and mass. When the frequency of the transmitted energy approaches the resonant frequency of the structure, amplification of the energy can occur depending on the damping of the structure.

There are three main wave types of concern in the propagation of ground-borne vibrations:

1. **Surface or Rayleigh waves**, which as the name implies, travel along the ground surface. They carry most of their energy along an expanding cylindrical wave front, similar to the ripples produced by throwing a rock into a lake. The particle motion is retrograde elliptical, more or less perpendicular to the direction of propagation.
2. **P-waves, or compression waves.** These are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal, "push-pull". P-waves are analogous to airborne sound waves.
3. **S-waves, or shear waves.** These are also body waves, carrying their energy along an expanding spherical wave front. Unlike P-waves, however, the particle motion is transverse, or perpendicular to the direction of propagation.

All vibrations generated by construction or operation of surface transportation facilities are mainly in the form of surface or Rayleigh waves. Soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to reach bedrock. Stiff clay soils propagate vibrational energy further than sandy soil, while shallow rock can concentrate the vibration energy close to the surface resulting in ground-borne vibration propagation over larger distances. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of ground-borne vibration depending upon soil type.

The vibration of floors and walls may cause perceptible vibration, rattling of items such as windows or dishes on shelves, or a rumbling noise. The rumble is the noise radiated from vibrating room surfaces. In essence, the room surfaces act like a giant loudspeaker diaphragm. This audible sound is called ground-borne noise.

Ground-borne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. In addition, the rumbling noise that usually accompanies a building's vibration develops inside buildings.

1.1.1 Vibratory Motion

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, and acceleration. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement, and the acceleration is the rate of change of the speed. Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. The response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration.

1.1.2 Amplitude Descriptors

Vibration consists of a rapidly fluctuating motion with an average displacement from rest of zero. There are several different methods that are used to quantify vibrational amplitude. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak

of the vibration signal. PPV is often used to monitor vibrations due to blasting, since it is best related to the stresses that are experienced by buildings.

Although peak particle velocity is appropriate for evaluating the potential of building damage, it is not suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to the average vibrational amplitude. The root mean square (rms) of a signal is the average of the squared amplitude of the signal. The average is typically calculated over a 1 second period. The rms amplitude is always less than the PPV* and is always positive.

The PPV and rms velocity is often described in units of inches per second. Although it is not universally accepted, decibel notation is in common use for vibration. Decibel notation acts to compress the range of numbers required to describe vibration. Vibrational velocity level in decibels is defined as:

$$Lv = 20\times \log_{10} (\nu/\nu_{ref})$$

In the above equation, "Lv" is the velocity level in decibels, "ν" is the rms velocity amplitude, and "ν_{ref} " is the reference velocity amplitude. A reference value must always be specified whenever a quantity is expressed in terms of decibels. The accepted reference quantity for vibration velocity is 1×10^{-6} in/sec in the USA. Although not a universally accepted notation, the abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

1.2 HUMAN PERCEPTION OF GROUND-BORNE VIBRATION

1.2.1 Typical Levels of Ground-Borne Vibration

In contrast to airborne noise, ground-borne vibration is not a phenomenon that most people perceive every day. Human reaction to groundborne vibration is virtually always characterized in terms of the root-mean-square (rms) vibration velocity. The rms is considered the best available measure of potential human annoyance from ground-borne vibration and measurements are usually reported in terms of the maximum rms vibration velocity level, Lv for analysis of human perception and impact. The vibration perception threshold for humans is 75 VdB, however, because of the ground-borne noise that is radiated from the room surfaces, the overall perception threshold is 65 Vdb.

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the 65 VdB threshold of perception for humans. Most perceptible indoor vibration is caused by sources within buildings such as mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration due to traffic is rarely perceptible.

* The ratio of PPV to maximum rms amplitude is defined as the **crest factor** for the signal. The crest factor is always greater than 1.4, although a crest factor of 8 or more is not unusual for impulsive signals. For ground-borne vibration from trucks, the crest factor is usually less than 4.

Figure 1-1 illustrates common vibrational sources, and the human and structural response to ground-borne vibration. The range of interest is approximately 50 VdB to 100 VdB. Background vibration is of concern only when the vibration affects very sensitive manufacturing or research equipment. For example, both electron microscopes and high-resolution lithography equipment are highly sensitive to vibration.

Although the threshold of perception is about 65 VdB, vibration is not distinctly perceptible unless the vibration is about 75 VdB or greater. If the vibrational level in a residence is 85 VdB or more, most people will be strongly annoyed by the vibration. (1)

The vibration levels inside of a building depend on the soil and the propagation paths of the vibration into the building's foundation and throughout the building. The relationship between ground-borne vibration and ground-borne noise depends on the frequency content of the vibration and the acoustical absorption of the receiving room. In general, the heavier a building, the lower the response will be to the ground-borne vibration and the more acoustical absorption in the room, the lower the noise level will be. For a room with average acoustical absorption, the sound pressure level is approximately equal to the average vibration velocity level of the room surfaces*. Hence, the A-weighted level of ground-borne noise can be estimated by applying A-weighting to the vibration velocity spectrum. If the vibration spectrum peaks at 30 Hz, the A-weighted sound level will be approximately 40 decibels lower than the velocity level. Correspondingly, if the vibration spectrum peaks at 60 Hz, the A-weighted sound level will be about 25 decibels lower than the velocity level.

1.2.2 Quantifying Structural Response to Ground-Borne Vibration

Caltrans states that "peak particle velocity" correlates best with damage and complaints and has adopted the Peak Vertical Particle Velocity descriptor, with units of mm/sec or in/sec." PPV is often used to monitor vibrations due to blasting and construction activities, since it is best related to the stresses that are experienced by buildings.

* The sound level approximately equals the average vibration velocity level only when the velocity level is referenced to 1 micro inch/second (1 μin/sec).

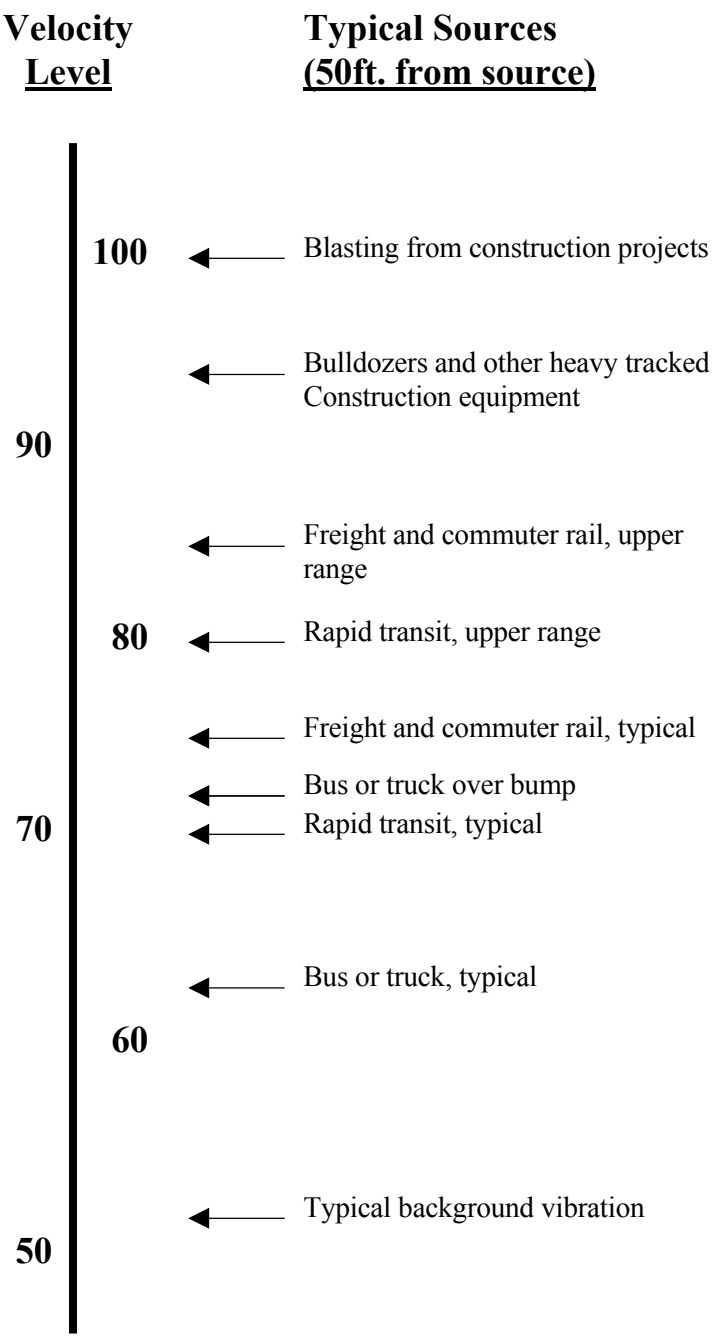


Figure 1-1 Typical RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second

REFERENCES

1. "Transit Noise and Vibration Impact Assessment" U.S. Department of Transportation, Federal Transit Administration, DOT-T-95-16, April 1995.

2. Rudy Hendriks, "Transportation Related Earthborne Vibrations (Caltrans Experiences)," Technical Advisory, Vibration, TAV-02-01-R9601, Department of Transportation, Division of Environmental Analysis, Office of Noise, Air Quality, and Hazardous Waste Management, Sacramento, CA, 2002.

3. Y. Tokita, "Vibration Pollution Problems in Japan," Inter-Noise 75, Sendai, Japan, pp. 465-472, 1975.

2 VIBRATION IMPACT CRITERIA

There has been limited research into the response of humans to building vibration and structure-borne noise. However, with the construction of new rail rapid transit systems in recent years, considerable experience has been gained as to how communities will react to various levels of building vibration. This experience, combined with available national and international standards, represents a good foundation for predicting annoyance from ground-borne noise and vibration in residential areas (1, 2).

Table 2-1 presents vibration and ground-borne noise guidelines published by Caltrans and FTA for evaluating the likelihood of producing human annoyance or causing structural damage. Criteria for assessing ground-borne vibrations and noise are based on the maximum levels of an event. The criteria for acceptable ground-borne vibration are expressed in terms of rms velocity levels, in decibels. The criteria for acceptable ground-borne noise are expressed in terms of A-weighted sound level. The criteria for protecting against structural damage are in terms of PPV. It is extremely rare for vibrations from truck traffic operations to cause building damage.

Table 2-1 Damage Risk and Human Ground – Borne Noise and Vibration Evaluation Guidelines

FTA Ground – Borne Noise and Vibration (3)				**Caltrans** (4)	
RMS Velocity Level, (VdB, re 10^{-6}in/sec)	**Noise Level**		**Human Response**	**Effect on Buildings**	**PPV, in/sec** [3]
	Low Freq[1]	**Mid Freq**[2]			
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound is excessive for quiet sleeping areas.	Vibrations unlikely to cause damage of any type	0.006
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit-induced vibration at this level unacceptable. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.		0.019

Table 2-1 Damage Risk and Human Ground – Borne Noise and Vibration Evaluation Guidelines					
FTA Ground – Borne Noise and Vibration (3)				**Caltrans** (4)	
RMS Velocity Level, (VdB, re 10^{-6}in/sec)	**Noise Level**		**Human Response**	**Effect on Buildings**	**PPV, in/sec** [3]
	Low Freq[1]	**Mid Freq**[2]			
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise unacceptable for sleeping areas, even for infrequent events, mid-frequency noise unacceptable even for infrequent events with institutional land uses such as schools and churches.	Recommended upper level of vibration to which ruins should be subjected	0.08
88 VdB	48 dBA	63 dBA	Unacceptable	Virtually no risk of "architectural" damage to normal buildings	0.10
94 VdB	54 dBA	69 dBA	Unacceptable	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings	0.20
100 – 104 VdB	60 – 64 dBA	85 – 89 dBA	Unacceptable	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage	0.4 – 0.6

Notes:
1. Approximate noise level when vibration spectrum peak is near 30 Hz.
2. Approximate noise level when vibration spectrum peak is near 60 Hz.
3. Assumes a Crest Factor of approximately 4.

Repeated exposure to ground vibration levels in excess of 120 VdB have been known to result in cracks in wallboard and loosening of nails. Repeated exposure to ground vibration levels in excess of 130 VdB have been known to result in cracks in masonry structures as well as loosening mortar. Repeated exposure to ground borne vibration can result in existing cracks to get larger. Protective guidelines of 102 VdB have been recommended by the Committee on Hearing, Bioacoustics and Biomechanics to protect residential structures from damage due to ground borne vibration (5). This corresponds to Caltrans' recommendation for guarding against structural damage.

REFERENCES

1. Acoustical Society of America, "American National Standard: Guide to Evaluation of Human Exposure to Vibration in Buildings," ANSI S3.29-1983 (ASA 48-1983)

2. International Standards Organization, "Evaluation of Human Exposure to Whole-Body Vibration, Part 2: Continuous and Shock-Induced Vibration in Buildings (1-80Hz)," ISO-2361-2, 1989.

3. "Transit Noise and Vibration Impact Assessment" U.S. Department of Transportation, Federal Transit Administration, DOT-T-95-16, April 1995.

4. Rudy Hendriks, "Transportation Related Earthborne Vibrations (Caltrans Experiences)," Technical Advisory, Vibration, TAV-02-01-R9601, Department of Transportation, Division of Environmental Analysis, Office of Noise, Air Quality, and Hazardous Waste Management, Sacramento, CA, 2002.

5. National Research Council, "Guidelines for Preparing Environmental Impact Statements on Noise," Committee on Hearing, Bioacoustics, and Biomechanics, National Academy of Sciences, Washington, DC, 1977.

3 VIBRATION MEASUREMENTS

Measurements of ground-borne vibration were made on September 16, 2004 in residential communities adjacent to E Imperial Highway and Valencia Avenue, which are major access routes to the Olinda Alpha Landfill as shown in Figure 3-1.

Figure 3-1 Measurement Area

Residential areas near four streets were selected for measurements:

1. N. Placentia Ave south of E Imperial Highway
2. Castlegate Lane north of E Imperial Highway
3. Sandpiper Way east of Valencia Ave
4. Santa Fe Rd east of Valencia Ave

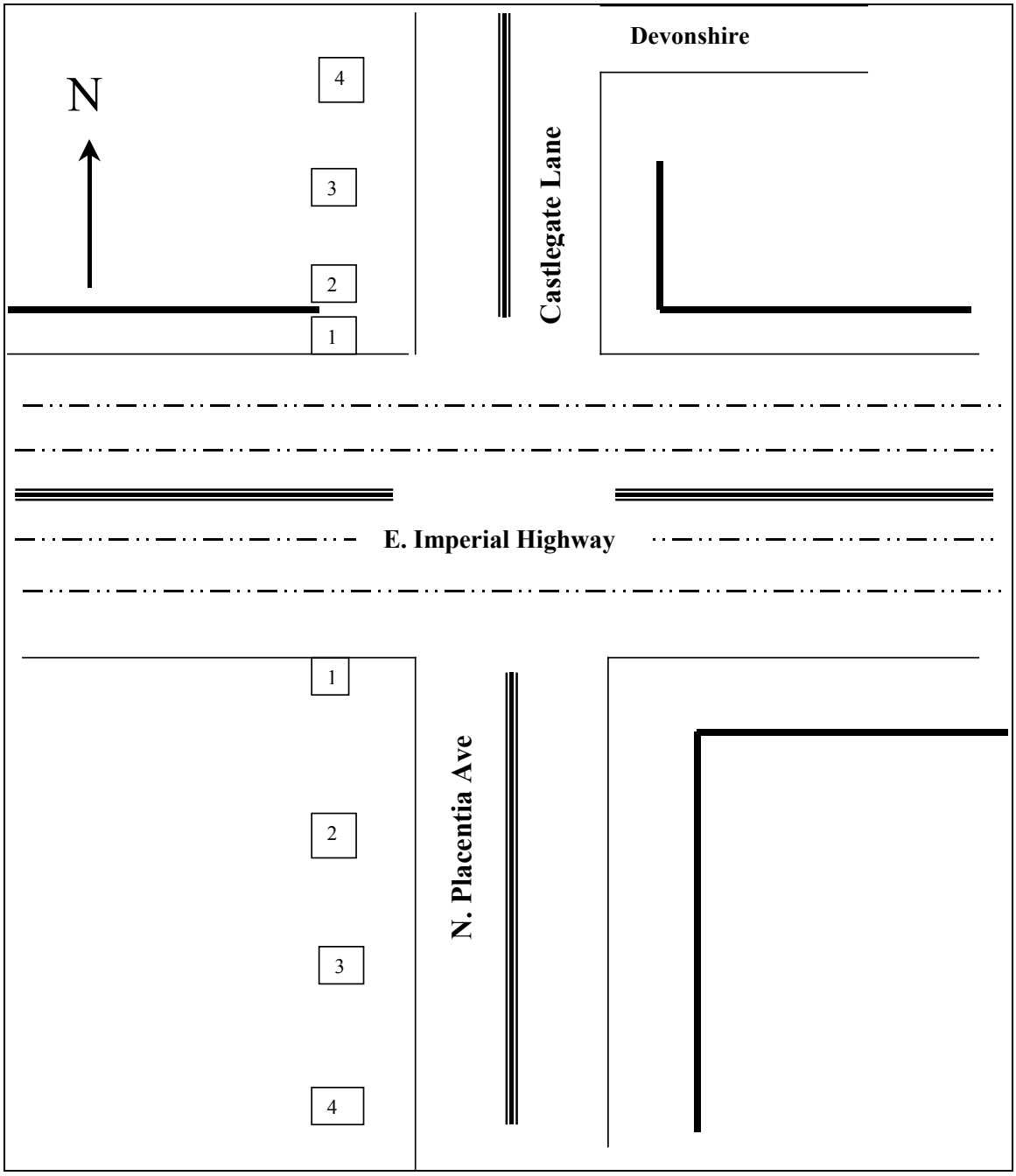
A vibration sensor was attached to the ground close to the roadway as a reference. [1] A second sensor was located at critical location(s) corresponding to the distances to the nearest residential structure(s). The reference sensor remained fixed in one location near the source, while the response sensor(s) may be moved to different locations. Maximum vibration levels were measured for at least for ten passes of heavy trucks for each location.

[1] Wilcoxon Research Model 793L Premium, Low Frequency Accelerometer; frequency response of 0.6 Hz to 700 Hz.

3.1 N. PLACENTIA AVE RESULTS

Vibration measurements were made between 7:00 a.m. and 8:15 a.m. at four locations shown at the lower half of Figure 3-2.

Figure 3.2 E. Imperial Highway Measurement Locations



E. Imperial Highway has three lanes on each side of a central medium. On the south side of the Highway there is a residential community protected by a high block wall (depicted by the

heavy lines in the above sketch. The vibration measurements were made along the west edge of the sidewalk on the west side of N. Placentia Ave. Since the vibration transducers were within 15 ft of the curb along N. Placentia Ave, the traffic on this street may have contributed to the measured levels at the further distances. Measurement locations 2, 3 and 4 correspond with the edges of the rows of houses observed over the top of the wall that would be nearest to E. Imperial Highway.

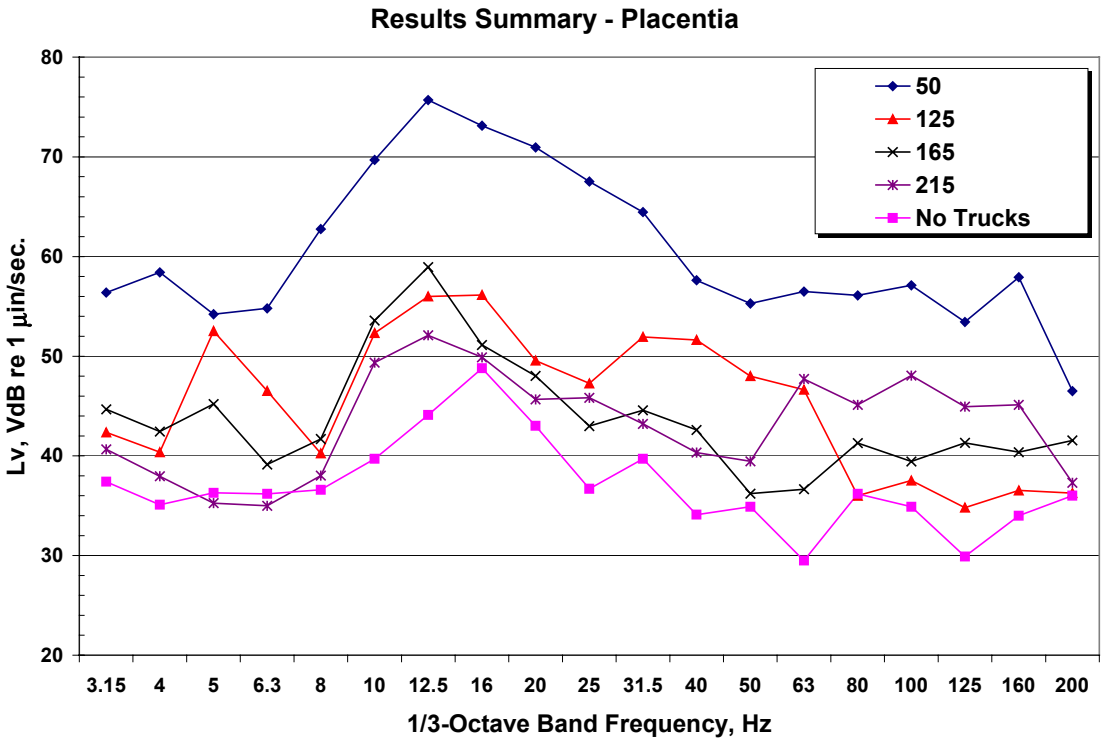
Table 3-1 summarizes the measurement locations and vibration levels from truck traffic. We observed approximately 3 heavy trucks per minute that were either on the way to the landfill or returning from the landfill.

Table 3-1 N Placentia Vibration Measurement Results

Measurement Location	Distance from Centerline, ft	RMS Velocity Level, VdB	Noise Level, dBA	PPV, in/sec
1	50	80	N/A	0.040
2	125	63	23	0.006
3	165	61	21	0.004
4	215	58	18	0.003

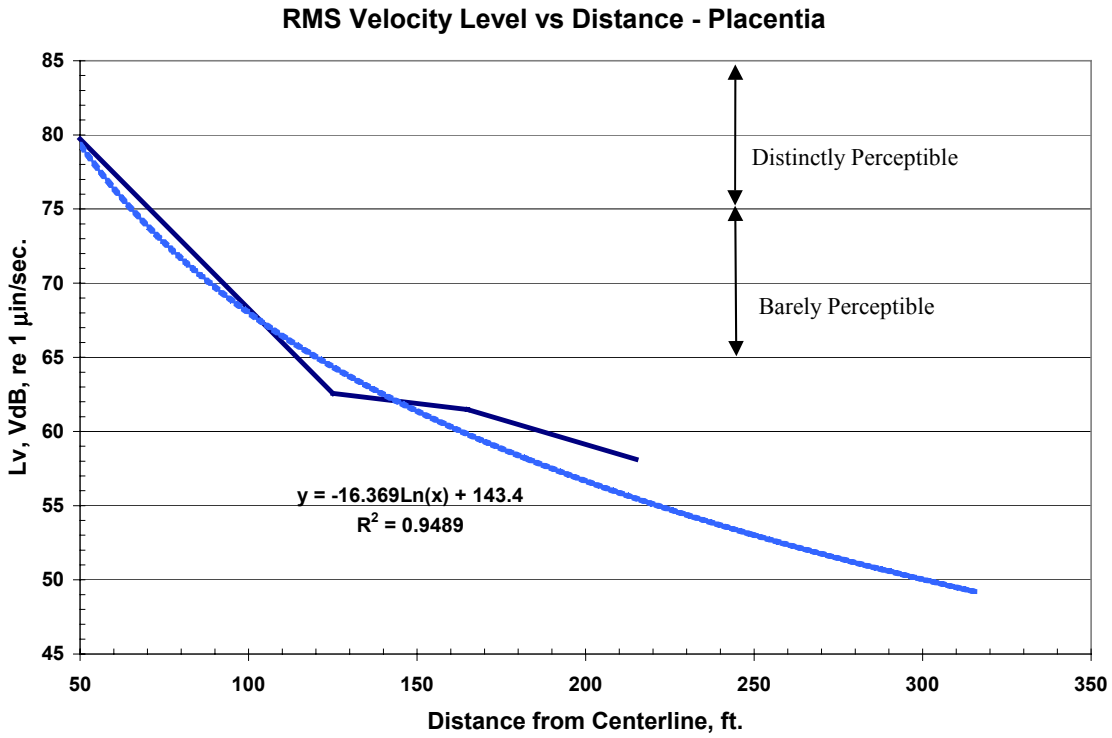
Figure 3-3 presents the maximum measured truck vibration spectra at the four distances and the spectra when there were no trucks. Since the vibration spectrum peak was below 30 Hz, the estimated ground-borne noise levels reported are 40 dB below the maximum vibration levels.

Figure 3-3



Vibration levels were below the threshold of perception at the distance of the nearest residential structure. Vibrations are unlikely to cause damage of any type. Figure 3-4 presents the observed vibration propagation with distance relationship. The "Distinctly Perceptible" range extends approximately 70 ft of the street centerline and the "Barely Perceptible" range extends approximately 115 ft from the centerline of the street. Residential structures were observed to be 125 ft from the street centerline.

Figure 3-4



3.2 CASTLEGATE LANE RESULTS

Vibration measurements were made between 8:45 a.m. and 10:15 a.m. at four locations along Castlegate Lane as shown at the upper half of Figure 3-2. The vibration measurements were made along the west edge of the sidewalk on the west side of Castlegate Lane. Measurement locations 2, 3 and 4 correspond with southern edge of the first, second and third house, respectively. Since the vibration transducers were within 15 ft of the curb along Castlegate Lane, the traffic on this street may have contributed to the measured levels at the further distances. Also, there is a speed bump located about 315 ft north of the Imperial Highway centerline and vibration created by cars going over the speed bump may have contributed to the levels measured at location 4.

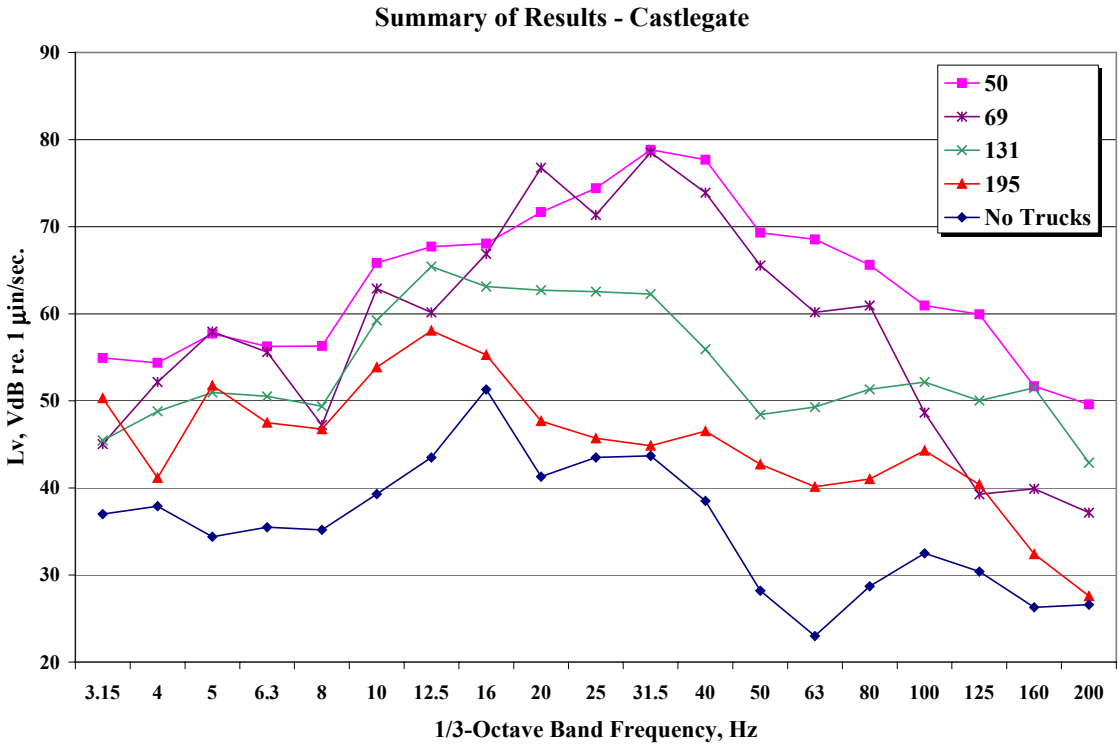
Table 3-2 summarizes the measurement locations and results. We observed approximately 2 to 3 heavy trucks per minute that were either on the way to the landfill or returning from the landfill.

Table 3-2 Castlegate Vibration Measurement Results

Measurement Location	Distance from Centerline, ft	RMS Velocity Level, VdB	Noise Level, dBA	PPV, in/sec
1	50	83	N/A	0.057
2	69	82	42	0.050
3	131	71	31	0.014
4	195	63	23	0.003

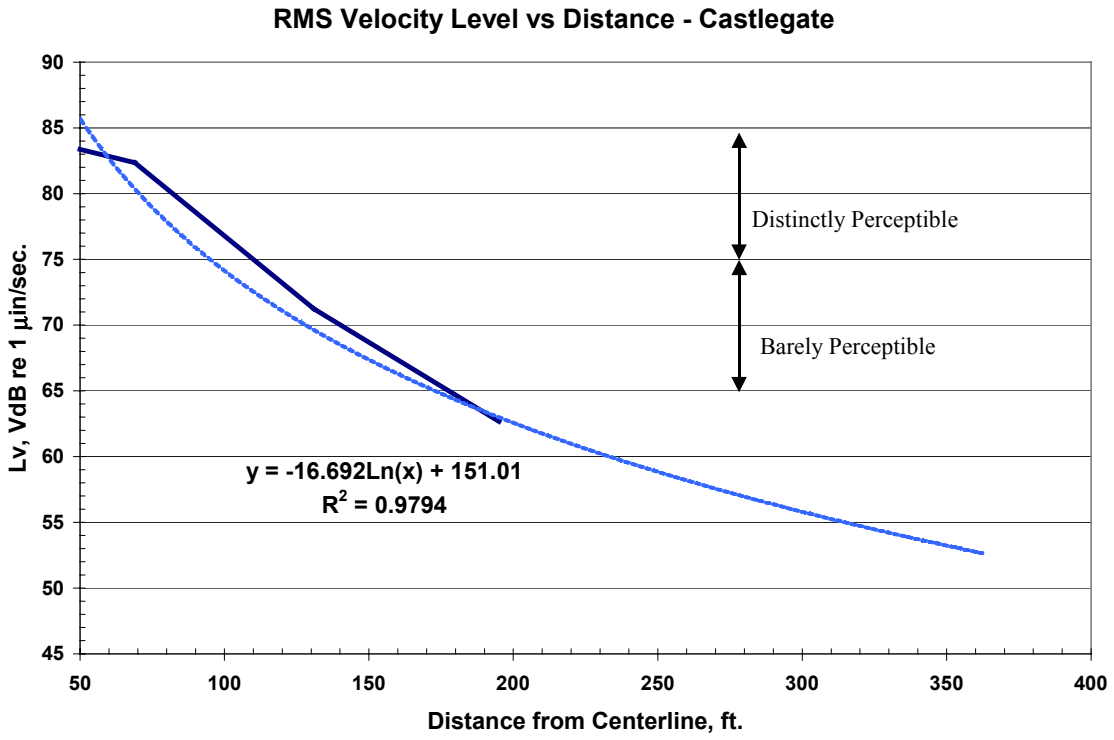
Figure 3-5 presents the maximum measured truck vibration spectra at the four distances and the spectra when there were no trucks. Since the vibration spectra peak was near 60 Hz at the nearest residences, the estimated ground-borne noise levels reported are 25 dB below the maximum vibration levels. The spectra peak for residences at greater distances was near or below 30 Hz and ground-borne noise levels reported are 40 dB below maximum vibration levels.

Figure 3-5



Vibration levels were above the threshold of perception at the distance of the two nearest residential structures along Castlegate and the residences on the south side of Devonshire. Figure 3-6 presents the observed vibration propagation with distance relationship. Residential structures within approximately 110 ft of the street centerline would be in the "Distinctly Perceptible" range. Residences within approximately 180 ft would be in the "Barely Perceptible" range. Vibrations are unlikely to cause architectural damage of any type.

Figure 3-6



3.3 SANDPIPER WAY RESULTS

Vibration measurements were made between 11:00 a.m. and 12:45 p.m. at five locations along Sandpiper Way as shown in Figure 3-7. The vibration measurements were made along the northern edge of the sidewalk on the north side of Sandpiper Way. Measurement locations 2, 3, 4 and 5 correspond with western edge of houses on either side of Sandpiper Way. We observed approximately 1 to 9 heavy trucks per minute that were either on the way to the landfill or returning from the landfill.

Table 3-3 summarizes the measurement locations and results and Figure 3-8 presents the maximum measured truck vibration spectra at the five distances and the spectra when there were no trucks. Since the vibration spectrum peak was below 30 Hz, the estimated ground-borne noise levels reported are 40 dB below the maximum vibration levels. Since the vibration transducers were within 10 ft of the curb along Sandpiper Way, the traffic on this street may have contributed to the measured levels at the further distances.

Figure 3-9 presents the observed vibration propagation with distance relationship. Residential structures within approximately 100 ft of the street centerline would be in the "Distinctly Perceptible" range. Residences within approximately 190 ft would be in the "Barely Perceptible" range. Vibrations are unlikely to cause architectural damage of any type.

Figure 3-7 Sandpiper Way Measurement Locations

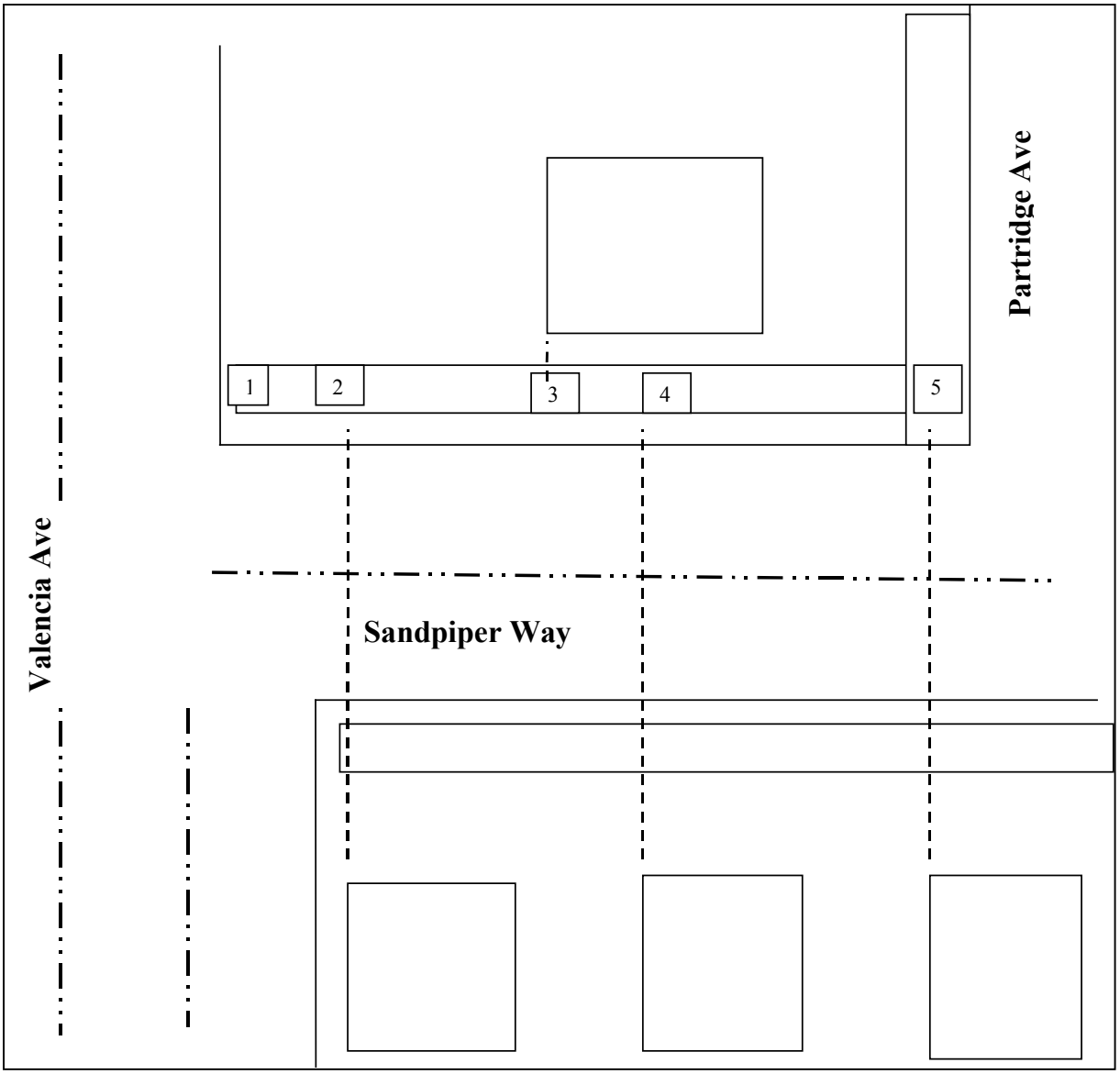


Table 3-3 Sandpiper Vibration Measurement Results

Measurement Location	Distance from Centerline, ft	RMS Velocity Level, VdB	Noise Level, dBA	PPV, in/sec
1	50	79	N/A	0.036
2	80	79	39	0.036
3	120	71	31	0.014
4	150	69	29	0.011
5	200	64	24	0.006

Figure 3-8

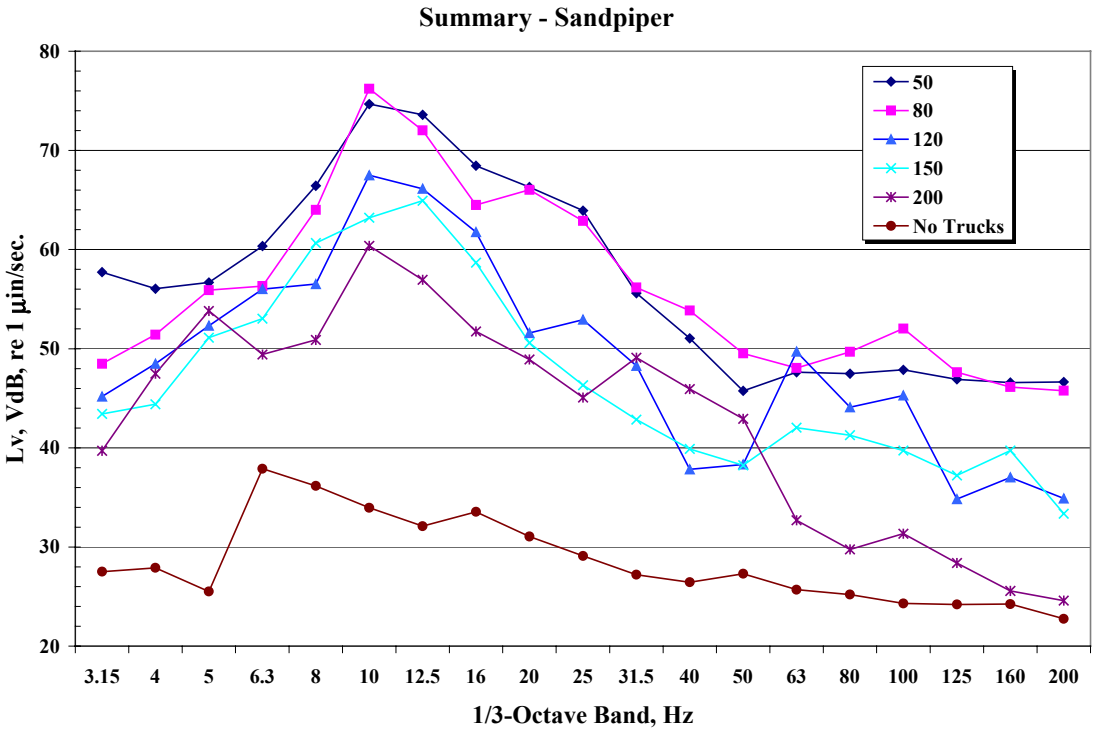
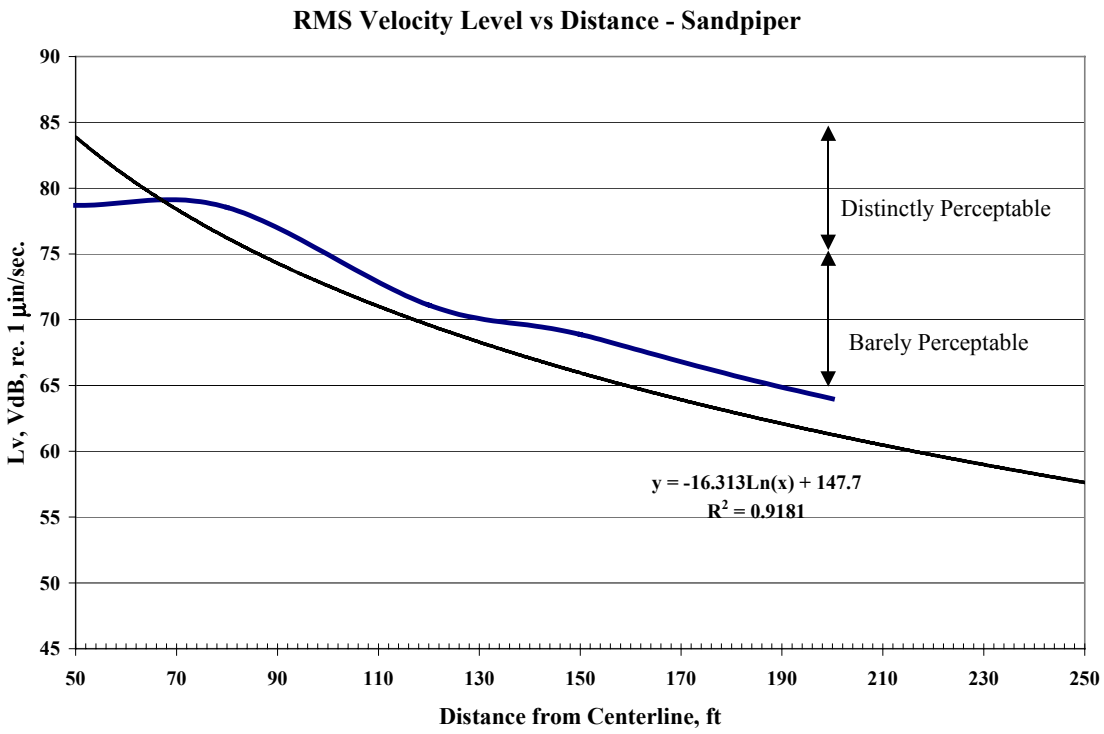


Figure 3-9



3.4 SANTA FE ROAD RESULTS

Vibration measurements were made between 1:00 p.m. and 2:35 p.m. at five locations along Santa Fe Rd as shown in Figure 3-10. The vibration measurements were made along the northern edge of the sidewalk on the north side of Sandpiper Way. Measurement locations 2, 3, 4 and 5 correspond with western edge of houses on either side of Santa Fe Rd. The traffic light at this intersection was observed to be on a 1-minute cycle. Consequently, many trucks on Valencia Way were traveling at a low rate of speed because many are either stopped by the stoplight or they were slowed down in anticipation of the light change. We observed approximately 1 to 9 heavy trucks per minute that were either on the way to the landfill or returning from the landfill. There is also about 2 to 5 vehicles per minute traveling on Santa Fe Rd that may have contributed to the vibration levels observed.

Figure 3-10 Santa Fe Rd Measurement Locations

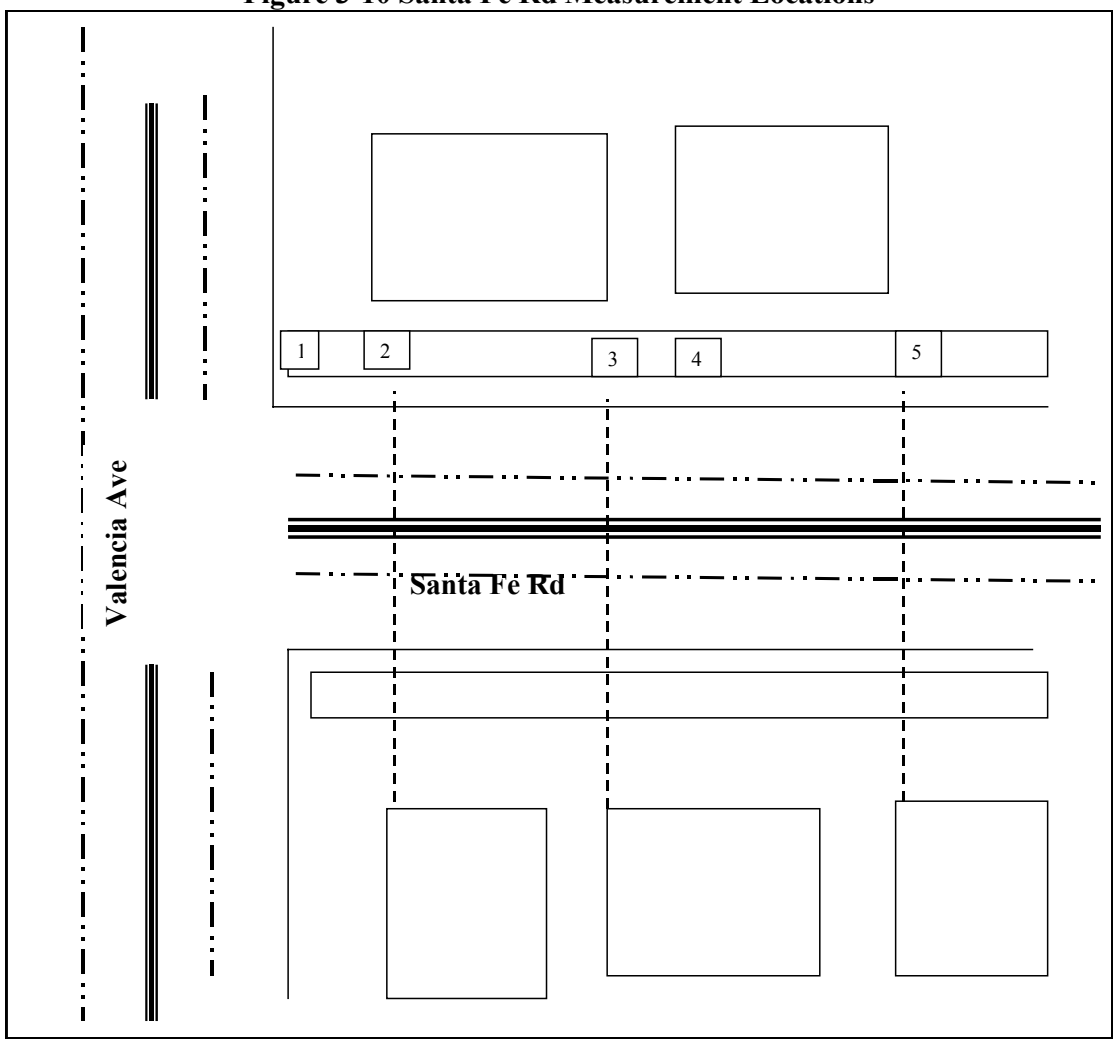


Figure 3-11 presents the maximum measured truck vibration spectra at the five distances and the spectra when there were no trucks and Table 3-4 summarizes the measurement locations and results. Since the vibration spectra peak was near or below 30 Hz and ground-borne noise levels reported are 40 dB below maximum vibration levels. Since the vibration transducers

were within 10 ft of the curb along Santa Fe Rd, the traffic on this street may have contributed to the measured levels at the further distances.

Figure 3-11

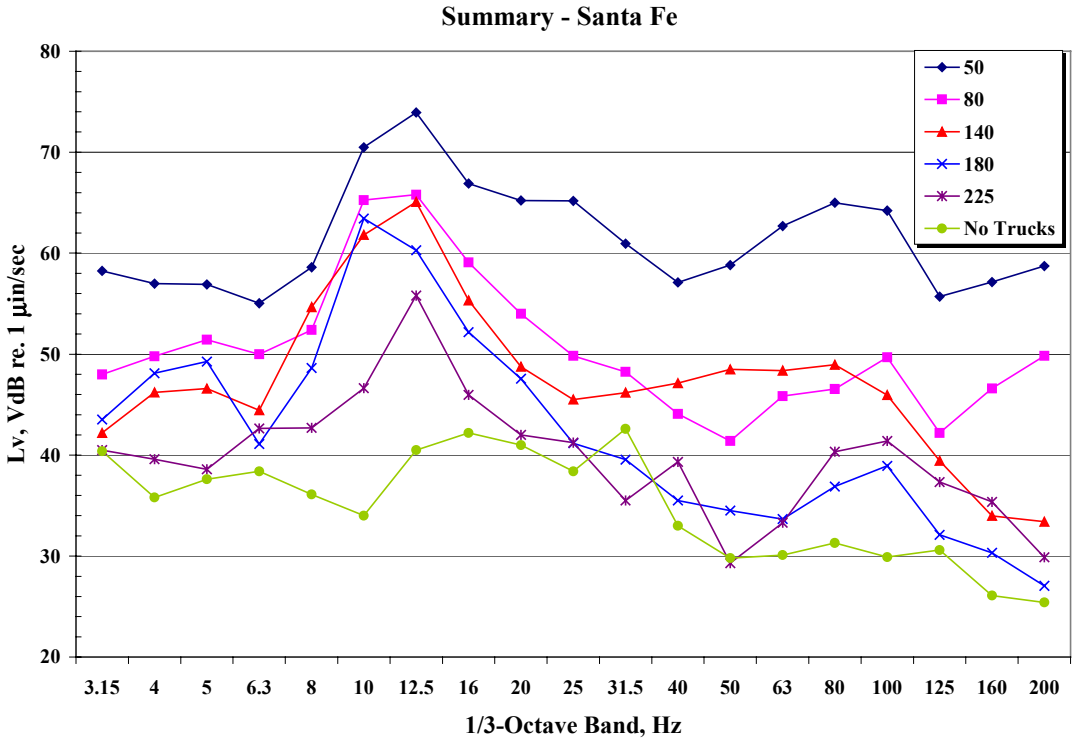


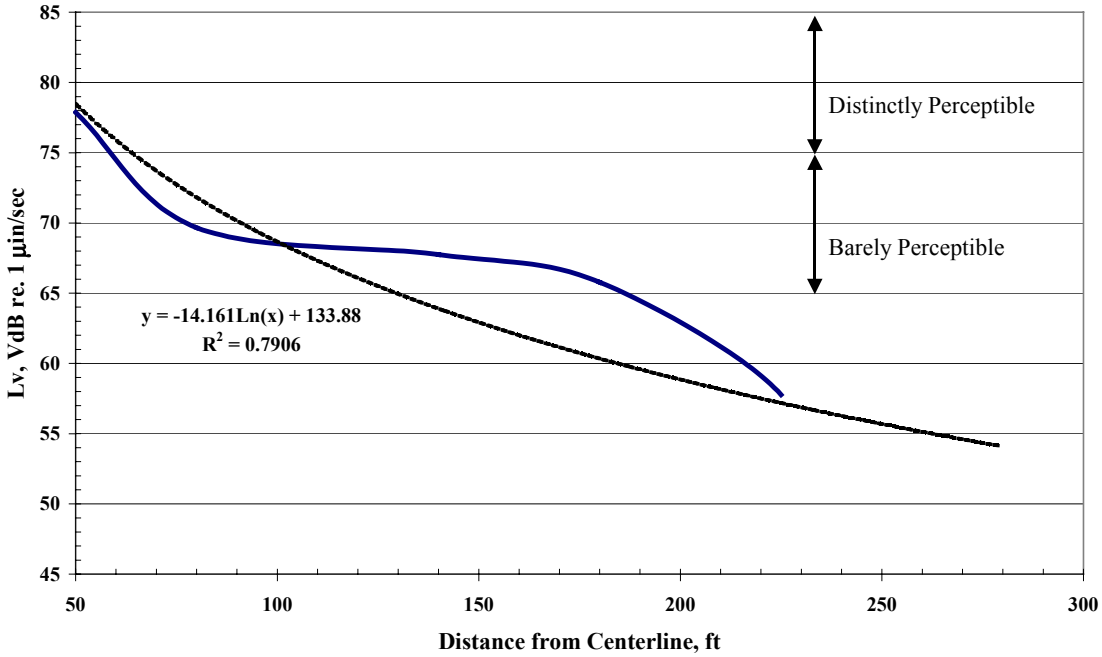
Table 3-4 Santa Fe Vibration Measurement Results

Measurement Location	Distance from Centerline, ft	RMS Velocity Level, VdB	Noise Level, dBA	PPV, in/sec
1	50	78	N/A	0.032
2	80	70	30	0.013
3	140	68	28	0.010
4	180	66	26	0.008
5	225	56	16	0.003

Vibration levels were in the "Barely Perceptible" range for the residences closest to Valencia Ave. Vibrations are unlikely to cause architectural damage of any type. Figure 3-12 presents the observed vibration propagation with distance relationship. The "Distinctly Perceptible" range extends to within approximately 60 ft of the street centerline. The "Barely Perceptible" range extends to within approximately 185 ft of the street centerline.

Figure 3-12

RMS Velocity Level vs Distance - Santa Fe



CLARIFICATIONS AND REVISIONS TO THE DRAFT ENVIRONMENTAL IMPACT REPORT

This Section consists of clarifications and revisions to the RELOOC Strategic Plan – Olinda Alpha Landfill Implementation Draft Environmental Impact Report (DEIR) that have resulted from responses to comments received from agencies and the public on the DEIR. The DEIR was released for a 45-day public review period (June 17, 2004 through August 2, 2004). Those parts of text that are underlined/crossed out indicate revisions by reference to the text of the DEIR.

SECTION 4.0 – PROJECT DESCRIPTION

4.5.5 WASTE COMPOSITION

The following discussion replaces the second paragraph on page 4-21 of the DEIR by reference to clarify waste composition and load checking at Olinda Alpha Landfill.

"The IWMD hazardous waste screening program includes monitoring refuse loads for hazardous wastes by an inspector as each load is unloaded at the working face. The site's load check program also involves the random selection of commercial refuse vehicles at the scale house, which are then directed to a designated area for waste load inspection at a rate of one random check per one thousand tons of waste received. This load check program involves spreading refuse from the load out in the designated area and visually inspecting for hazardous materials. Haulers may be subject to load checks if their loads are considered suspicious, from other service areas, or not typically used for municipal solid waste. Moreover, load checks are conducted on loads transported by previous offenders. A minimum of one designated landfill employee properly trained in the recognition, handling, and management of hazardous waste (designated landfill employee) will perform the load checks. Vehicles identified as carrying prohibited wastes (i.e., hazardous materials, liquid wastes and other non Class III wastes) are rejected. Hazardous wastes that are segregated from the wastes through the load check program or are found at the working face are placed in a temporary hazardous storage area. This area is specifically designed for hazardous material storage with secondary containment to provide a safe, convenient location for storing wastes discovered through the hazardous waste screening programs. On-site haul roads are provided to access this area. Waste oils and lubricants generated by on-site equipment maintenance activities are stored in the equipment maintenance area. These waste oils as well as other unacceptable wastes are stored on-site for a maximum of 90 days. These wastes may be removed earlier if a sufficient quantity has been collected to make a hazardous waste pick-up cost effective. In no instance are hazardous wastes stored on-site for more than 90 days."

SECTION 5.5 – TRANSPORTATION AND CIRCULATION

5.5.4.5 Other Traffic Issues

The following discussion replaces the fourth paragraph on page 5.5-27 of the DEIR by reference to clarify traffic control.

"The large majority of school children are driven to school by parents or are brought on school buses which must be made available (although at a cost) for students more than 1.5 miles from school. It appears that the potential for conflict between school children and vehicles on Valencia Avenue is small. Further, the basic ability to provide appropriate safety for students is under control of Caltrans in cooperation with the City, working through ~~its~~ the Traffic Committee ~~Commission~~ and Traffic Engineer. School crossing guards (one potential safety measure) at the two signalized intersections on Valencia Avenue at Lambert Road and Birch streets are a decision which would be assessed by Caltrans in cooperation with the Traffic Committee ~~Commission~~, Traffic Engineer and City Police Department in consideration of need and available funding. It should be noted that 88 percent of the daily traffic on Valencia Avenue near the proposed sports park is not landfill related traffic, but other traffic using this segment of Valencia Avenue. Other potential safety measures such as prohibiting parking along Valencia Avenue to enhance visibility and minimize conflicts between parked vehicles and on street traffic, and measures to limit mid-block pedestrian crossings along Valencia Avenue could also occur at the discretion of Caltrans in cooperation with the City."

The following discussion replaces the complete full paragraph on page 5.5-28 of the DEIR by reference to clarify traffic control.

"The establishment of, signing for and enforcement of speed limits are the responsibility of Caltrans in cooperation with the City of Brea. Therefore, Caltrans ~~the City~~ has the ability to adjust speed limits so long as the appropriate traffic and engineering surveys are conducted to post other than prima facie limits. It would be ~~the~~ Caltrans' ~~City's~~ prerogative to review the current speed limits on roads in the vicinity of the landfill, particularly the signing along Imperial Highway between SR 57 and Valencia Avenue to assure speed limits are adequately presented."

The following discussion replaces the second complete paragraph on page 5.5-28 of the DEIR by reference to clarify traffic control.

"During the conduct of the traffic study for the landfill expansion, it was observed that traffic in the eastbound left turn lanes at Imperial Highway and Valencia Avenue often backed into the through lanes or the through traffic backs up and prevents vehicles wishing to turn left from accessing the left turn lanes. The current left turn lanes are 200 feet long with a 100 foot transition. It appears these lanes could be extended west by removing parts of the existing raised median. Two small trees in the median may need to be relocated. It would be the responsibility of Caltrans in cooperation with the City of Brea to evaluate this intersection and determine the need for this type of improvements."

SECTION 5.6 – AIR QUALITY

5.6.4.1 Short Term Impacts

The following discussion replaces the second paragraph on page 5.6-18 of the DEIR by reference to clarify pollutants after implementation of standard dust suppression measures.

As shown in Table 5.6-6, peak-day construction emissions under the proposed expansion project would be below the SCAQMD daily thresholds for all criteria pollutants after implementation of standard dust suppression measures except for emissions related to PM10.

SECTION 5.8 – AESTHETICS

On pages 5.8-5, 5.8-8 and 5.8-9 in the DEIR, the existing conditions photographs and visual simulations in the aesthetic section in the DEIR were enlarged to allow the viewer to more clearly see the elements of the views. One photograph or view simulation is provided per page. These larger images are attached as Attachment A of this clarifications document.

SECTION 5.10 – HAZARDS

5.10.2.1 Potential Accidental Release of Hazardous Materials

The following discussion replaces the last paragraph on page 5.10-3 of the DEIR by reference to clarify additional monitoring probes.

"Pursuant to 27 CCR Sections 20919 and 20919.5, existing LFG recovery systems will be extended into the landfill expansion areas as refuse is added to the landfill's expansion area and monitoring of LFG perimeter probes will continue as waste is added to the landfill. It is anticipated that perimeter probes may ~~will~~ be moved or added to the eastern edge of the 33-acre expansion area. Because the current landfill operations produce TOC below limits defined by the SCAQMD in Rule 1150.1(e), because the expansion area is on the eastern edge and in the middle of the landfill property away from the Olinda Ranch PC, because additional LFG recovery systems will be added to the expansion area and additional monitoring probes may ~~will~~ be placed at the perimeter to comply with 27 CCR Sections 20919 and 20919.5 and SCAQMD requirements, and because it is not anticipated that the proposed project will cause TOC to exceed SCAQMD limits due to controls that will be in place during operation of the expansion area, potential impacts due to accidental release of LFG or lateral migration of LFG will be less than significant. For additional information regarding LFG and the potential for it to be released into the atmosphere, refer to Section 5.6 (Air Quality) of this EIR."

SECTION 5.11 – PUBLIC SERVICES

There was a printing error in the DEIR and some copies may not have included Figure 5.11-2 on page 5.11-6. A copy of that figure is provided in Attachment B of this clarifications document.

SECTION 6.0 – ALTERNATIVES TO THE PROPOSED PROJECT

6.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The following table replaces Table 6-1 on page 6-22 in the DEIR by reference to clarify the comparison of environmental impacts.

TABLE 6-1
COMPARISON OF THE ENVIRONMENTAL IMPACTS OF ALL PROJECT ALTERNATIVES

Environmental Parameter	Proposed Project	No Project Alternative	Alternative 2	Alternative 3
Land Use and Planning	2	2	2	2
Geology and Soils	2	1	1	1
Hydrogeology and Water Quality	2	1	1	1
Surface Water Hydrology	2	1	1	1
Transportation and Circulation	2	2/3	2/3	2/3
Air Quality	3 ~~2~~	2/3	2/3	2/3
Noise	2	2/3	2/3	2/3
Aesthetics	1	1	1	1
Cultural and Scientific Resources	2	2	2	2
Hazards	2	2	2	2
Public Services	1	1	1	1
Biological Resources	2	1	1	1

Legend
1. Insignificant or no impact.
2. Impact that can be mitigated to a level of insignificance.
3. Impact that can not be mitigated to a level of insignificance.

6.7 ABILITY OF THE ALTERNATIVE TO MEET THE PROJECT OBJECTIVES

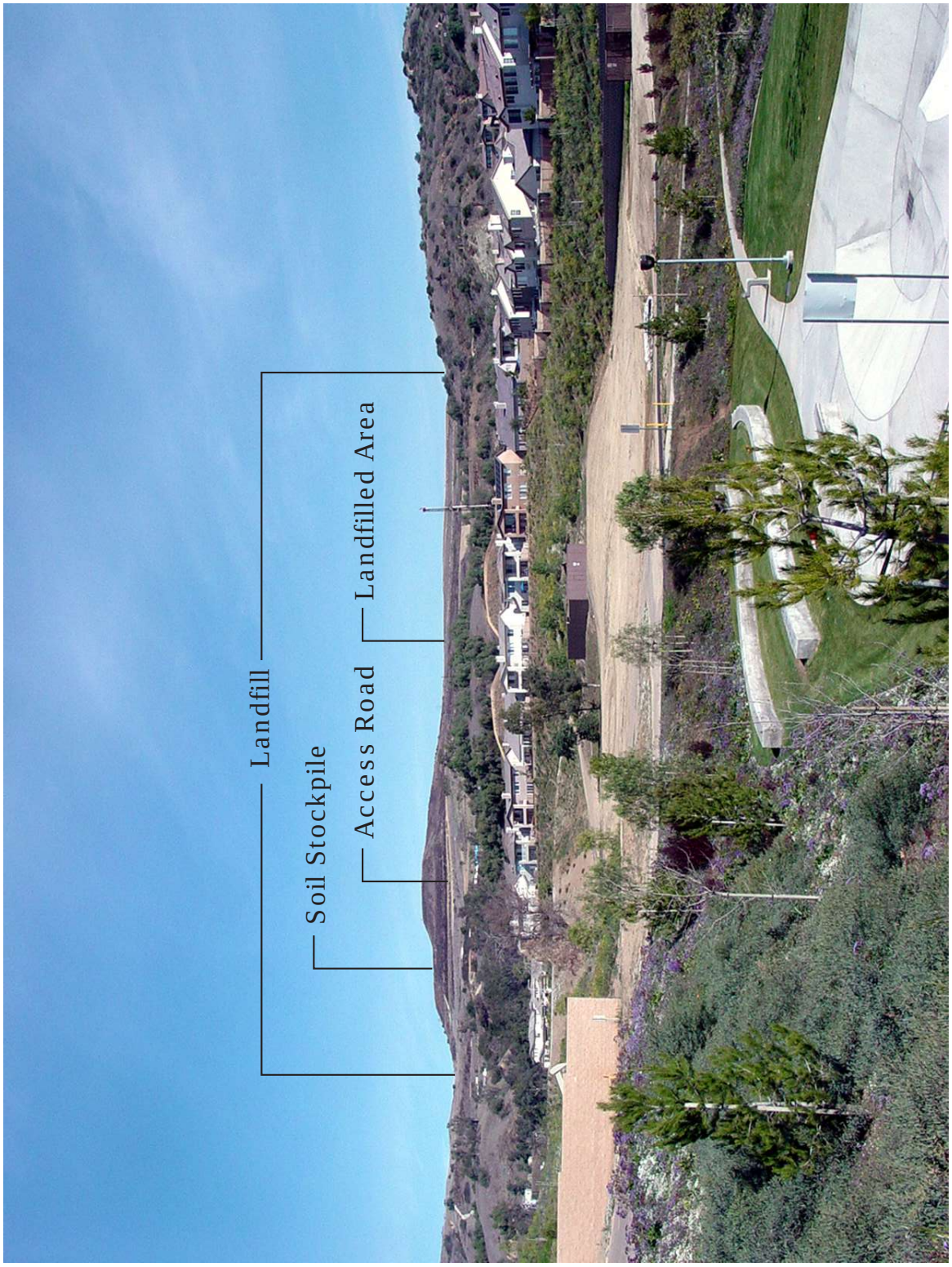
The following table replaces Table 6-2 on page 6-23 of the DEIR by reference to clarify the ability of the alternatives to meet certain objectives.

TABLE 6-2
ABILITY OF THE ALTERNATIVES TO MEET THE PROJECT OBJECTIVES

PROJECT OBJECTIVES	Proposed Project	No Project Alternative	Alternative 2	Alternative 3
	Does the Alternative meet the Project Objective?			
Define future waste disposal system by 2004 to provide a basis for renegotiation of WDAs with Orange County cities, franchised haulers and Districts.	Yes	No	Yes	Yes
Ensure that the County's near term waste disposal needs are met.	Yes	No	Yes	Yes
Maximize capacity of the existing Olinda Alpha Landfill.	Yes	No	No	No
Maintain adequate revenue and local control of waste disposal to provide consistent and reliable public rates and fees.	Yes	No	Yes ~~No~~	Yes ~~No~~
Maintain efficient, cost effective and high quality IWMD operations.	Yes	No	Yes	Yes
Minimize adverse environmental impacts associated with MSW disposal.	Yes	No	Yes	Yes

Source: P&D Consultants, Inc. (2004).

ATTACHMENT A



View 1. From north of Carbon Canyon Road looking north toward the Landfill.

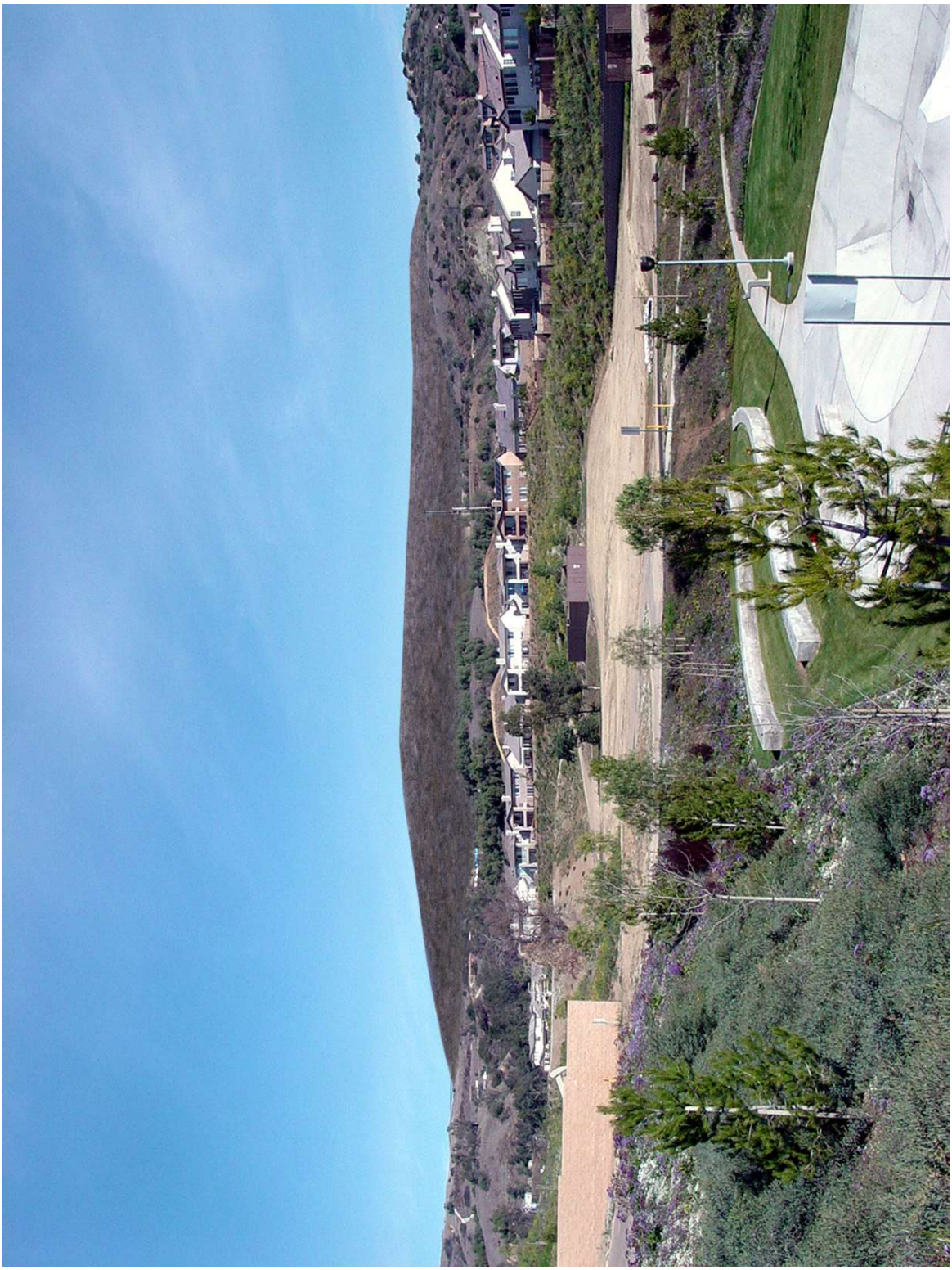
Source: P&D Consultants, Inc. (2004).

Figure 5.8-3
Existing Views

View 2. From Carbon Canyon Regional Park looking northwest toward the Landfill.

Source: P&D Consultants, Inc. (2004).

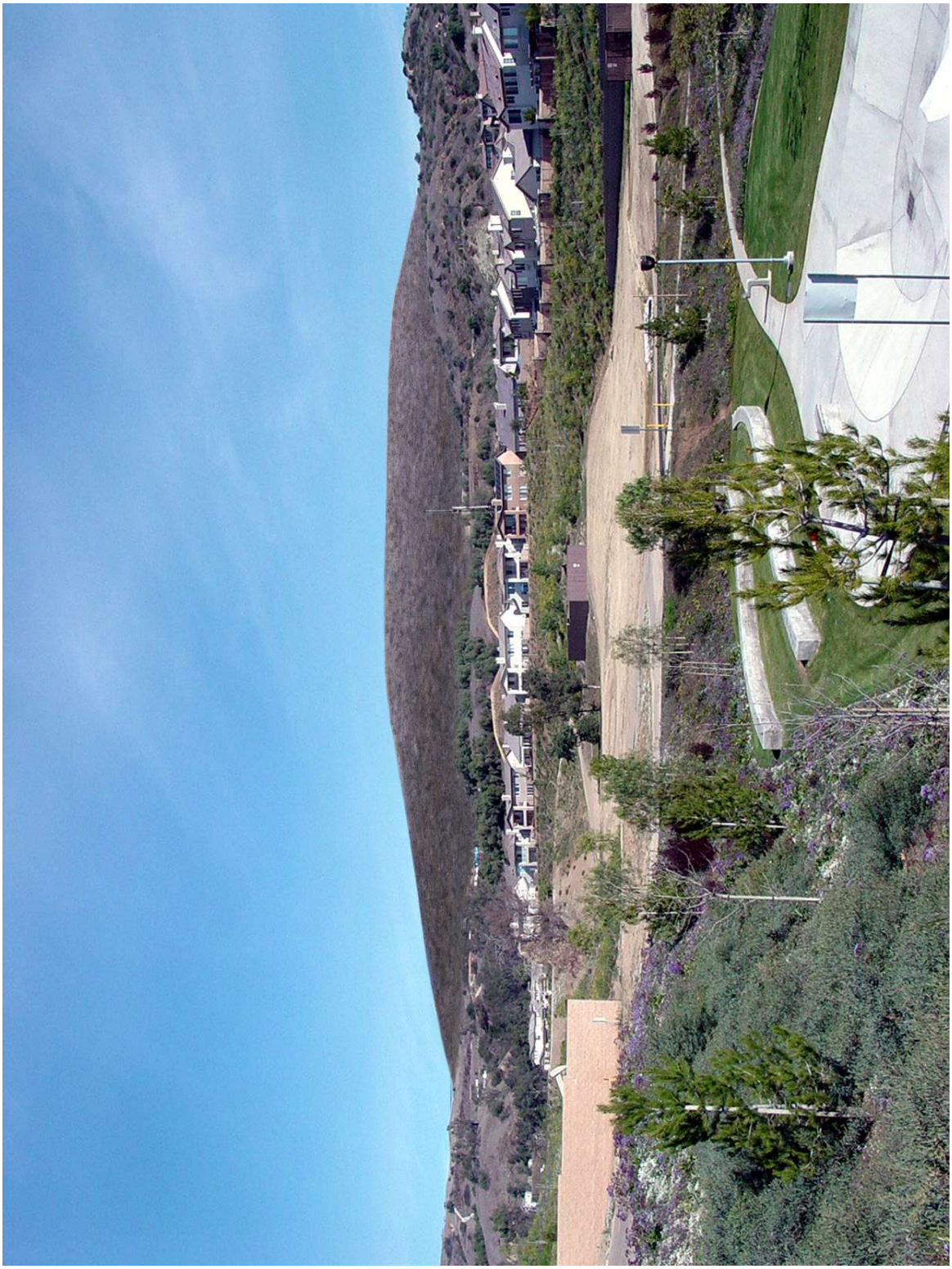
 Figure 5.8-3
Existing Views



Visual Simulation 1A - Permitted (1300 foot) Landfill from north of Carbon Canyon Road looking north.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

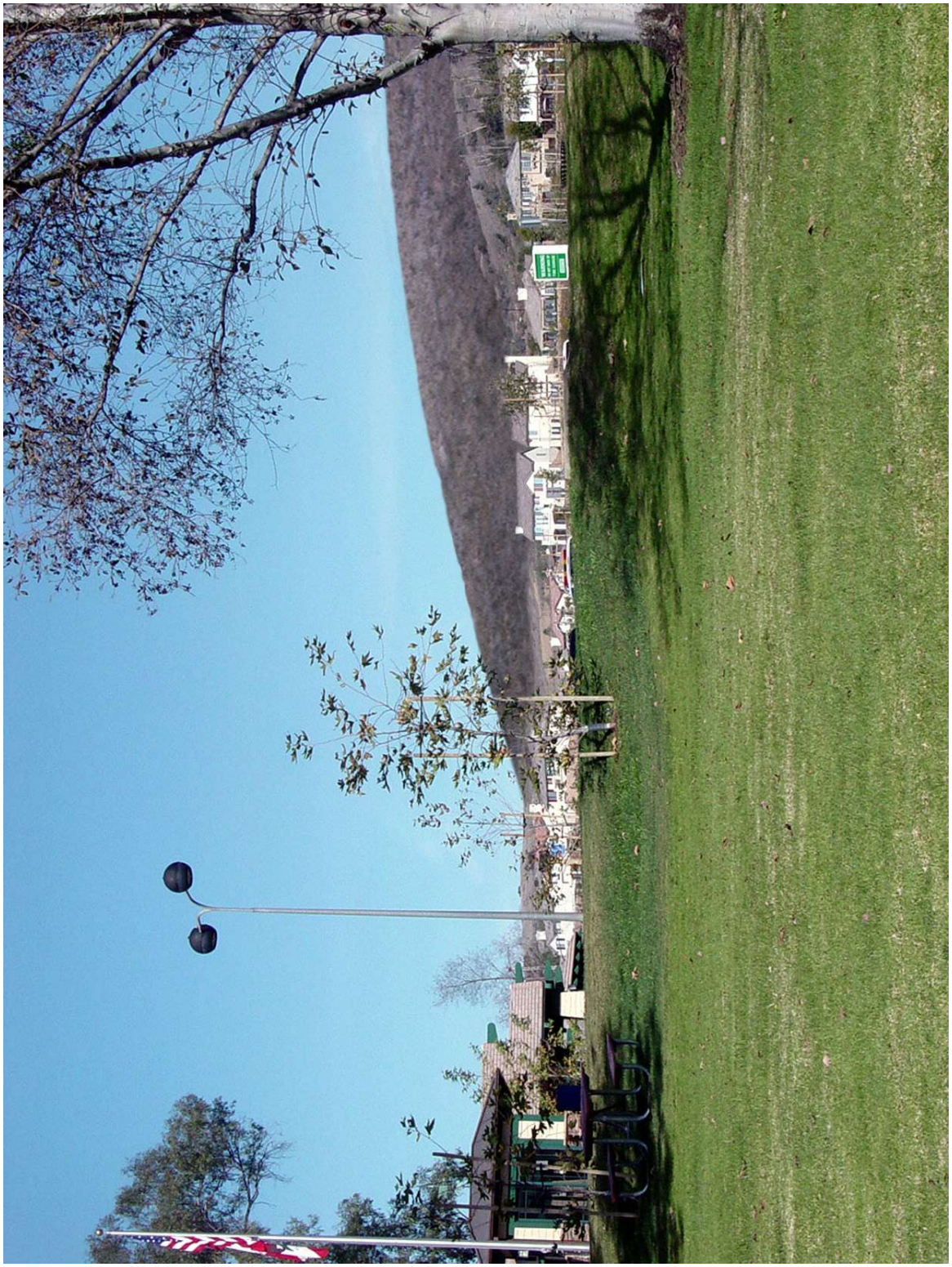
Figure 5.8-4
Visual Simulations



Visual Simulation 1B - Proposed (1415 foot) Landfill from north of Carbon Canyon Road looking north.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

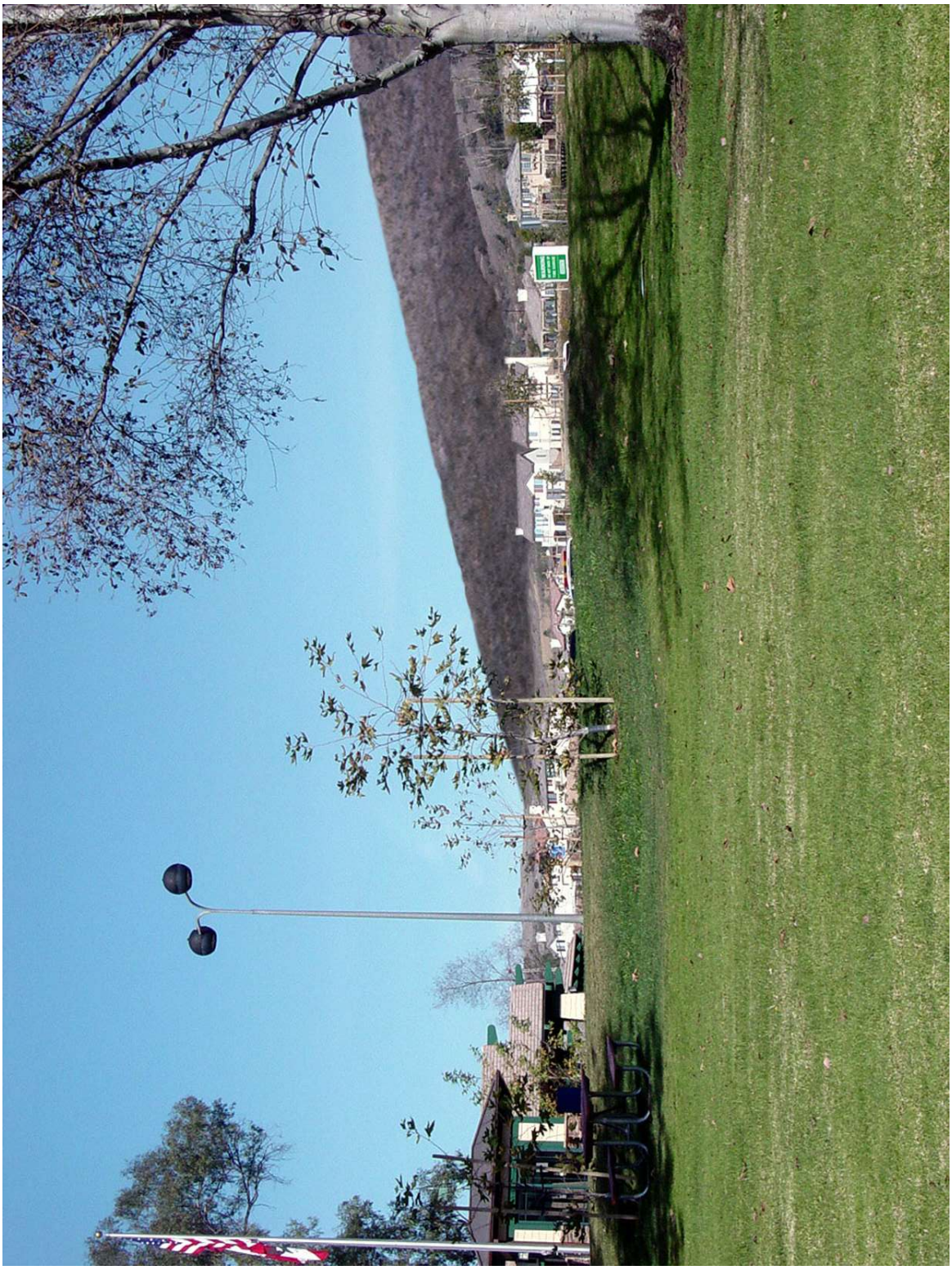
 Figure 5.8-4
Visual Simulations



Visual Simulation 2A - Permitted (1300 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

 Figure 5.8-4
Visual Simulations

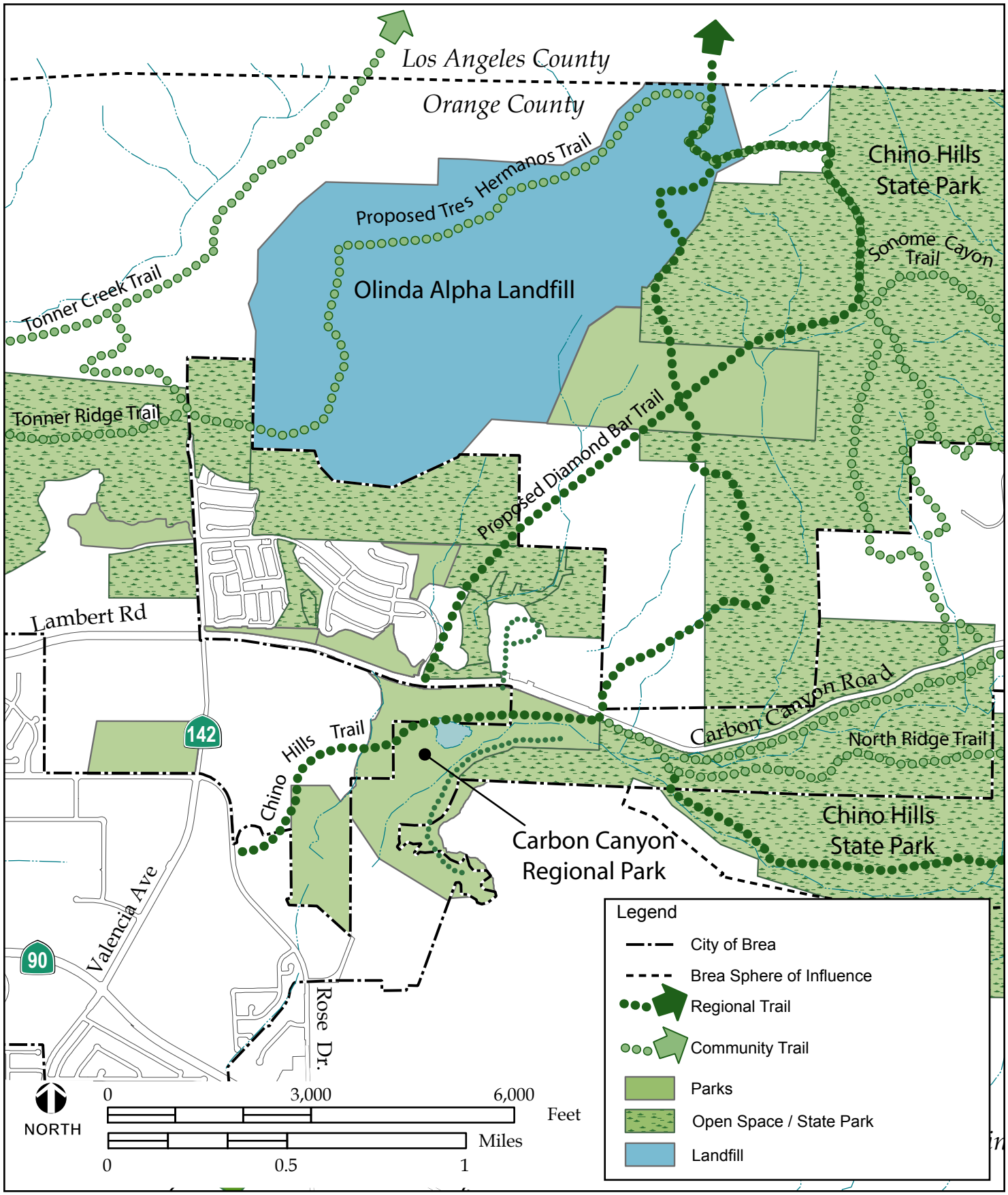


Visual Simulation 2B - Proposed (1415 foot) Landfill from Carbon Canyon Regional Park looking northwest.

Source: Bryan A. Stirrat & Associates / P&D Consultants, Inc. (2004).

Figure 5.8-4
Visual Simulations

ATTACHMENT B



Source: City of Brea General Plan (2003), County of Orange General Plan (2000) and P&D Consultants, Inc. (2004).

Figure 5.11-2

Riding and Hiking Trails in the Vicinity of the Olinda Alpha Landfill