



# ANTELOPE VALLEY PUBLIC LANDFILL CUP

## AMENDMENT TO DRAFT ENVIRONMENTAL IMPACT REPORT (SCH #1990010988)

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Palmdale, California 93550

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Irvine, California 92612

**May 2010**



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**May 2010**



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## 1.0 EXECUTIVE SUMMARY

This Draft Environmental Impact Report (EIR) has been prepared by EDAW, Inc. (now EDAW/AECOM) under the direction of the City of Palmdale to identify and evaluate potential environmental impacts associated with the proposed expansion project of the Antelope Valley Public Landfill (AVPL). EDAW/AECOM was contracted by Waste Management of California (WMI) with City of Palmdale approval of the scope of work to be performed. The AVPL has been owned and operated by Waste Management of California, Inc. (WMI) since May, 1999.

Subsequent to the preparation of this Draft EIR in December of 2005, the City of Palmdale has proposed to widen Tierra Subida Avenue between City Ranch Road and Cactus Drive (City Project Number 482). Since the City Project Number 482 would affect the proposed project site's existing access at the intersection of City Ranch Road and Tierra Subida Avenue, a sight distance evaluation was conducted (JT Engineering 2010) (see **Appendix G-1**). Based on the sight distance evaluation, the project engineer recommended the construction of a new frontage road connecting to Tierra Subida at Rayburn Road as the future access to the project site. Section 4.7, Traffic and Circulation, of this Draft EIR Amendment includes analysis of the new circulation improvement. In addition, with the passing of the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32: California Health and Safety Code Division 25.5, Section 38500, et.seq., or AB 32), the City of Palmdale decided to incorporate a greenhouse gas (GHG) emission and climate change analysis in this Draft EIR Amendment. Section 4.2, Air Quality, of this Draft EIR Amendment includes a discussion of the GHG and climate change analysis results (see **Appendix C-1**). It should be noted that these amendments did not result in any changes to the conclusions of the proposed project based on the new analysis conducted.

In December 2005, the original Draft EIR was circulated for the California Environmental Quality Act (CEQA) mandated 45-day public review from December 14, 2005 to January 27, 2006. A total of nine comment letters and the Office of Planning and Research (OPR) transmittal letter were received on the Draft EIR. The comment letters were received from:

1. Southern California Association of Governments, Brian Wallace – January 9, 2006
2. County of Los Angeles, Department of Public Works, Donald Wolfe – January 11, 2006
3. State of California, Health and Human Services Agency, Department of Health Services, Joseph E. Crisologo – January 11, 2006
4. California Integrated Waste Management Board, Raymond M. Seamans – January 12, 2006
5. Steve Schirmbeck – January 14, 2006
6. State of California, Public Utilities Commission – January 24, 2006
7. State of California, Business, Transportation and Housing Agency, Department of Transportation, District 7, Cheryl J. Powell – January 24, 2006
8. County of Los Angeles, Department of Public Works, Donald L. Wolfe – January 26, 2006
9. California Regional Water Quality Control Board, Lahontan Region – January 27, 2006
10. State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit – January 30, 2006

In addition to the comment letters, verbal comments were received from Jack and Rose O'Conner during a meeting with Waste Management on January 4, 2006. Responses to comment letters and verbal comments were prepared and sections of the December 2005 Draft EIR were revised (including

typographical errors) as a result of the comments received during the 45-day public review period. Changes made to the Draft EIR text in response to comments are indicated in ~~strikeout~~ (deletion) and underlined (addition) text.

## 1.1 DESCRIPTION OF THE PROPOSED PROJECT

The AVPL facility is located in the northeastern portion of Los Angeles County, in the City of Palmdale, California. The project site is located west of the Antelope Valley Freeway (SR-14) and north of the Anaverde Creek in an area known as the Anaverde Valley. The site lies at the existing terminus of City Ranch Road west of Tierra Subida Avenue. The project site can be found on page 4285-G2 of The Thomas Guide 2004, Los Angeles & Orange Counties Street Guide; the County of Los Angeles Assessor's Parcel Numbers related to the project site are 3004-013-009 through 3004-013-012. Until recently the area surrounding the project site was characterized as rural in setting. The area has experienced substantial growth in recent years. The majority of this growth has occurred in the Cities of Palmdale and Lancaster (**Figure 1-1**, Regional Location and **Figure 1-2**, Local Vicinity).

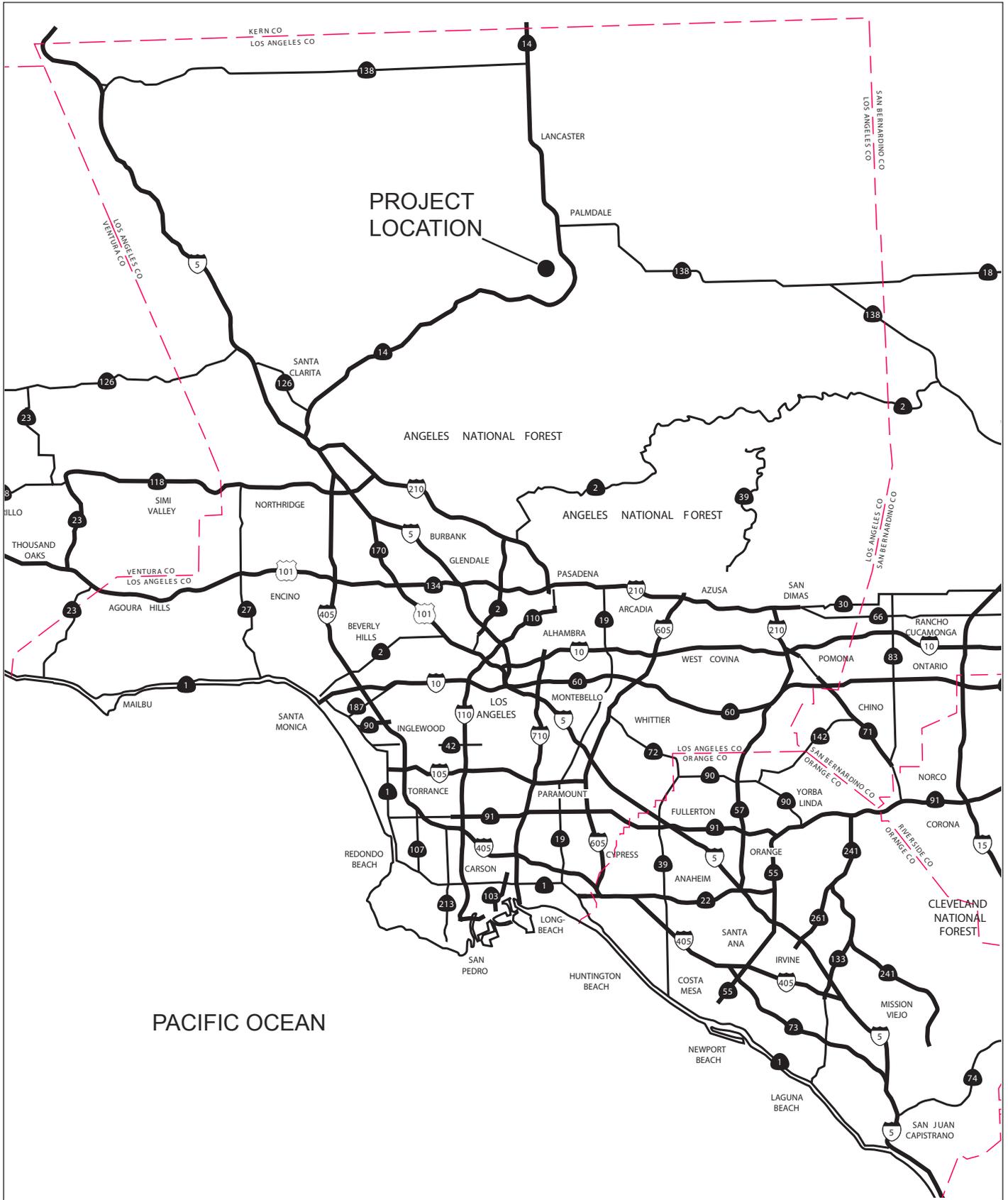
The current project applicant, WMI, submitted the revised application for Conditional Use Permit (CUP) for the AVPL project. The original application was filed by the former owners, the Arklin Brothers Enterprises on November 2, 1998. Subsequent to filing the 1998 application, a lot line adjustment facilitating sale of the landfill, was conducted by the Arklin Brothers and approved by the County of Los Angeles in April 1999. WMI purchased the property in May 1999.

The AVPL consists of Landfill I (72 acres) and Landfill II (98 acres) totaling 170 acres. These acreage figures are contained on the County of Los Angeles approved Exhibit A (**Figure 1-3**, County Approved Exhibit "A"). Landfill I has served the Antelope Valley since the 1950s, and comprises of refuse disposal and ancillary facility areas (i.e., office and hauling company operations). Landfill II, which has a County approved CUP, was previously located in the unincorporated portion of the County; however, it was annexed to the City of Palmdale as of November 21, 2003. Landfill II, though not yet constructed, is also comprised of a refuse disposal area and ancillary facility areas. The total combined area for landfill operations (including Landfills I, II, and ancillary facilities) is 180 acres (**Figure 1-3**, County Approved Exhibit "A"). The existing/permitted refuse footprint for Landfill I is 57 acres and for Landfill II is 57 acres totaling 114 footprint acres. The project proposes to enlarge the aggregate 114-acre refuse footprint by 11 acres to 125 acres total by incorporating the gap of unused land between Landfill I and Landfill II. The property limits are also increased from 180 to 184.94 acres.

### 1.1.1 PROJECT OBJECTIVES

Objectives of the proposed project include:

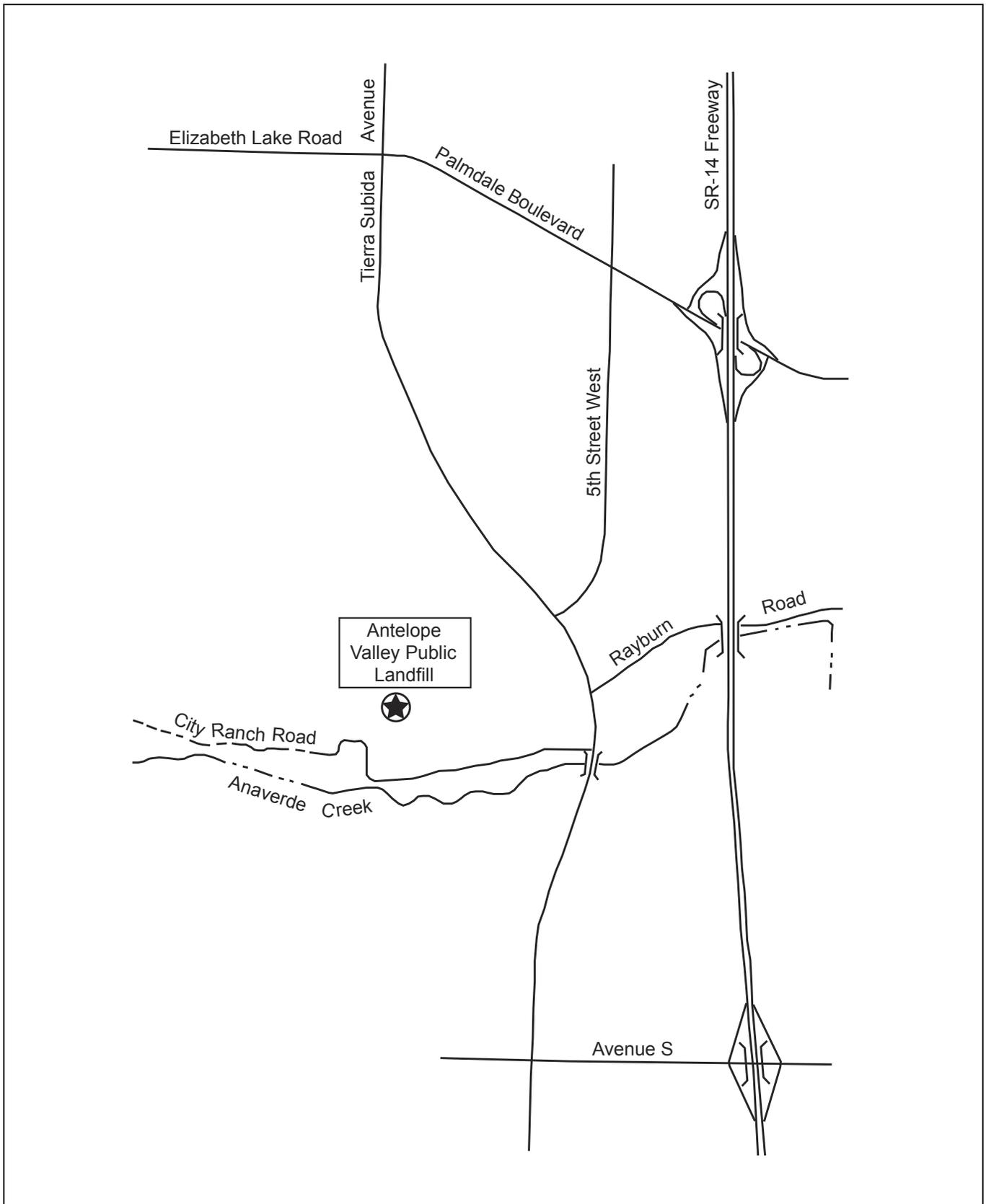
1. Expansion of the landfill to increase its capacity and life to the maximum extent practical by combining Landfills I and II.
2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.
3. Reconfigure two existing landfills by adding area to connect the landfills and maximize its capacity at this location through efficient use of land space and natural topography.

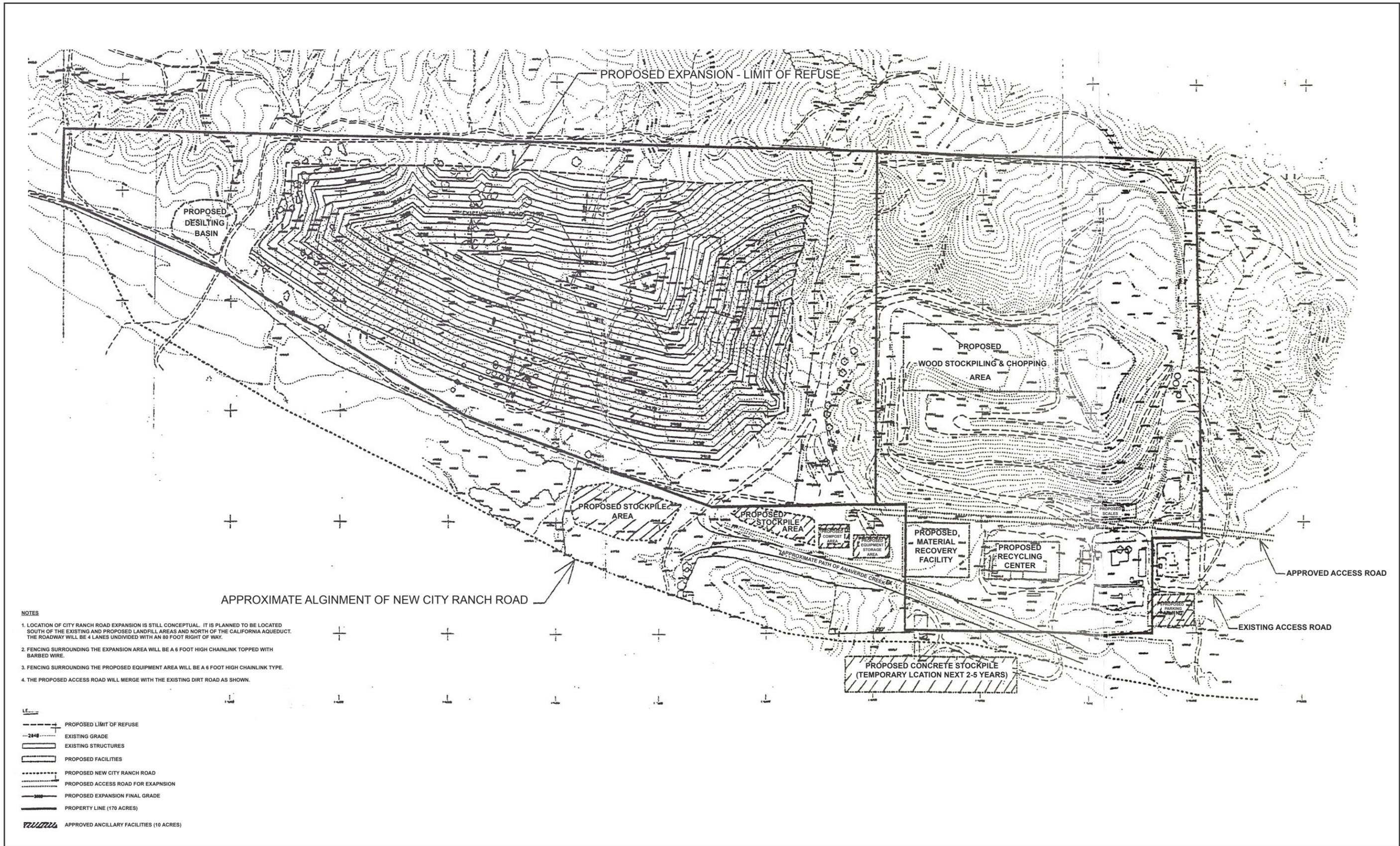


Source:RBF



**Figure 1-1**  
**Regional Location**





4. Continue to support the implementation of residential and commercial recycling programs and a household hazardous waste program for the Antelope Valley.
5. Ensure that landfill access does not occur through existing residential communities.
6. Increase the daily refuse handling capacity to handle anticipated refuse generation rates inclusive of projected population growth in the Antelope Valley without conflicting with adjacent incompatible land uses.
7. Provide additional needed landfill capacity for growth which is consistent with the City’s goals and policies of the General Plan and other relevant documents.
8. Minimize the negative impacts of increased solid waste disposal at the existing landfill through an environmentally sound operation that incorporates current engineering and design techniques.
9. Upgrade existing landfill access to improve entry from local roadways.

**1.1.2 PROPOSED PROJECT SUMMARY** (see **Figure 1-4**, Site Plan, **Figure 1-5**, Ancillary Facilities, and **Figure 1-6**, Project Boundaries)

The proposed project will consist of the following components:

- Reconfigure the two landfills into one contiguous disposal area of 125 acres, updating the legal boundary to reflect the current property boundary of 185 acres and obtaining one Solid Waste Facility (SWF) permit for the entire area.
- Enlarge the aggregate 114-acre refuse footprint by 11 acres to 125 acres total by incorporating the gap between Landfill I and Landfill II.
- A proposed increase in the permitted daily intake of solid waste (i.e., refuse to be disposed of in the landfill) from 1,800 tons per day (tpd) to 3,600 tpd. These tonnage figures exclude recyclables and materials used for Alternative Daily Cover (ADC) and beneficial use.
- Limit the daily intake of TPH contaminated regulated soils to a maximum of 15% of the permitted daily intake for solid waste.
- Increase the “total” daily intake of refuse and recyclables (including ADC) from a currently permitted 3,564 tpd (assumed “total” intake in 1993 Mitigated Negative Declaration) to a peak of 5,548 tpd (assumed “total” intake for the analysis included in this EIR).
- A proposed modification to the height of the combined landfills to EL 3,200. (See **Table 3-2**, for a comparison of height for Landfill I, Landfill II, proposed expansion, and proposed change).
- Proposed construction of ancillary facilities, including: two desilting basins; erosion protection along the north bank of Anaverde Creek, acceptable to the City Engineer; a revised site access including construction of a frontage road to connect with City Ranch Road and intersect Tierra Subida at Rayburn Road and create a 4-way signalized intersection and construct the remaining access road along the R-5 dedicated right-of-way; an additional truck scale; a recycling drop-

off/transfer center; and the relocation of the existing Southern California Edison’s electric transmission lines and light duty poles to south side of property either “on-site” or “off-site.”

- Revise hours of operation for waste acceptance to 6:00 a.m. to 8:00 p.m. for all users. The present permitted operating hours for receipt of refuse are between 6:00 a.m. and 5:00 p.m. for waste haulers and transfer trucks and 8:00 a.m. and 4:45 p.m. for the public.
- Installation of a liner, leachate collection and removal system (LCRS), drainage control and surface water management system, groundwater monitoring system, and horizontal gas collectors in the expansion area and remaining combined landfill footprint area. The proposed liner system will be overlapped (per requirements of RWQCB) with existing liners to provide a continuation of environmental controls.

**1.1.3 PREVIOUS ENVIRONMENTAL DOCUMENTS**

The project site has been analyzed in several prior environmental documents. A detailed description of these prior analyses is provided in Section 2.4.2 of this document.

**1.2 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED**

Several issues resulting from the proposed project were identified in the Initial Study, completed by the City of Palmdale (refer to **Appendix A-1**). In addition, other environmental issues were identified by other agencies through response to the Notice of Preparation (NOP) (refer to **Appendix A-2**). A total of six (6) letters were received that raised specific issues to be addressed in the EIR. The one (1) remaining letter received for Southern California Association of Governments (SCAG) did not raise any specific environmental issues. The primary areas of expressed interest are summarized below according to the NOP comment letters received. These issues are discussed in more detail within Section 2.5 of this document. Section 2.5 includes a summary table which identifies which EIR section and/or technical appendix addresses the particular issue raised in the letter.

Department of Transportation, District 7, Regional Planning, March 24, 2004

- Preparation of a traffic study and its required contents
- Project’s impact on State transportation system (i.e., SR-14)
- Equitable share responsibility for traffic mitigation measures, based on Caltrans’ Guide

Antelope Valley Archaeological Society, Environmental Review Committee, March 26, 2004

- Discuss status of CA-LAN-875
- Discuss archaeologist’s findings at the site CA-LAN-1917
- Discuss archaeologist’s findings and level of effort for site CA-LAN-876
- Availability of the archaeology report
- Explore options for developing a local curation facility
- Future involvement of Native Americans and greater cooperation between the outside contractors and local archaeologists
- Accidental discovery of a site at the landfill
- Continued monitoring
- Incorporate archaeological resources issues in the EIR

California Integrated Waste Management Board, March 30, 2004

- Discuss how project meets State Minimum Standards for environmental protection
- Define/address project components (i.e., final elevations; acceptable waste; hours of operation; ADC; tonnage intake; proposed facilities; traffic; permitted area vs. permitted disposal area)
- CEQA compliance per CIWMB's requirements

Department of Fish and Game, March 30, 2004

- Assessments of flora and fauna
- Discussion of direct, indirect, cumulative impacts, and mitigation measures
- Analyzing a range of alternatives
- Addressing appropriate permitting (i.e., California Endangered Species Act [CESA] permit)
- Avoiding impacts to water courses

County of Los Angeles, Department of Public Works, April 12, 2004

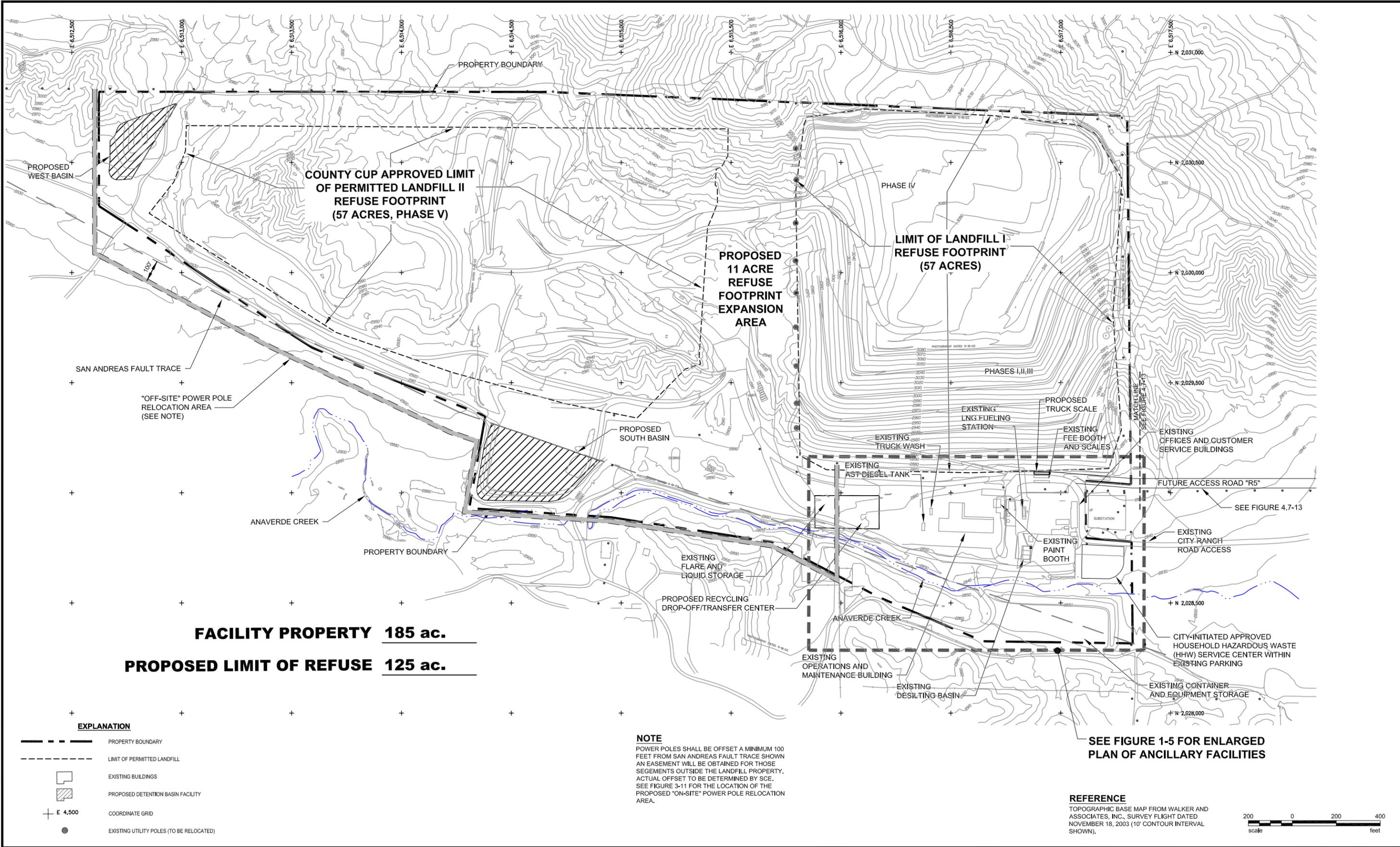
- Environmental programs (Countywide Siting Element)
- Possible amendment to the City's Non-disposal Facility Element for the Material Recovery Facility
- Address Standard Urban Storm Water Mitigation Plan/compliance with the City drainage master plan
- Discuss traffic related impacts/evaluate County intersections with County methodology
- Discuss watershed, impacts, and requirements
- Assess water quality impacts and incorporate Best Management Practices (BMPs) and National Pollutant Discharge Elimination System (NPDES)

County of Los Angeles, Fire Department, April 29, 2004

- Payment of Fire Facilities Impact Fees for proposed roofed structures
- Address Forestry Division's areas of responsibility, including: 1) erosion control, watershed management; 2) rare and endangered species, vegetation; 3) fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4; 4) archaeological and cultural resources; and 5) the County Oak Tree Ordinance

All of the comment letters received on the NOP are contained in **Appendix A-2** of this EIR. A written response was prepared to the Antelope Valley Archaeological Society's comment letter. The written response is included in **Appendix A-3** of this EIR. The cultural resources issue is also discussed in Section 8.0 of this document.

No other areas of controversy were identified through the NOP process. A public scoping meeting was held on March 29, 2004 to solicit input from the community/residents on the proposed expansion and to address those concerns in the EIR. A total of 10 people (no community residents) attended and no formal public comment was submitted during the public scoping meeting.



**FACILITY PROPERTY 185 ac.**  
**PROPOSED LIMIT OF REFUSE 125 ac.**

**EXPLANATION**

- PROPERTY BOUNDARY
- - - LIMIT OF PERMITTED LANDFILL
- [ ] EXISTING BUILDINGS
- [ / ] PROPOSED DETENTION BASIN FACILITY
- + E 4,500 COORDINATE GRID
- EXISTING UTILITY POLES (TO BE RELOCATED)

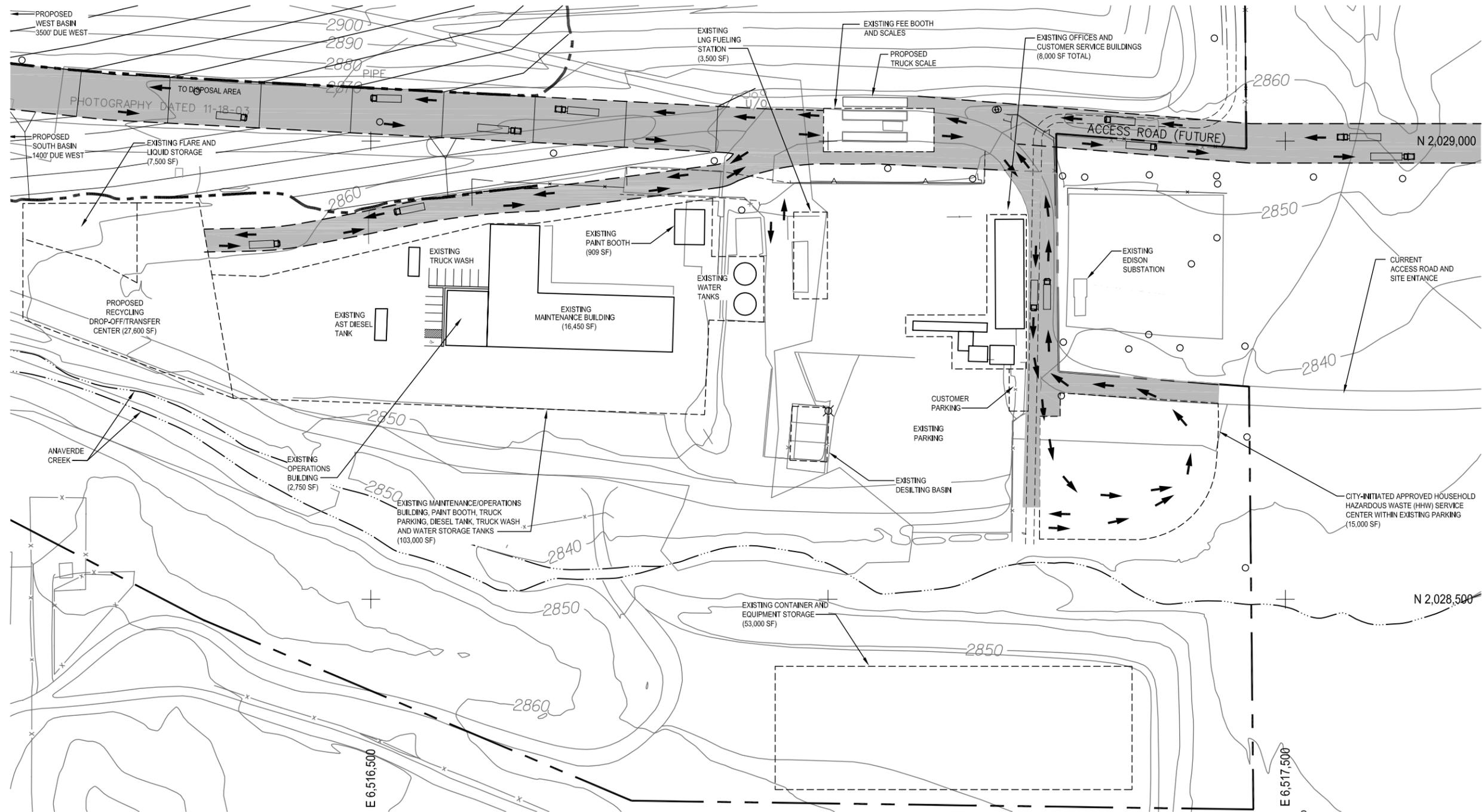
**NOTE**  
 POWER POLES SHALL BE OFFSET A MINIMUM 100 FEET FROM SAN ANDREAS FAULT TRACE SHOWN AN EASEMENT WILL BE OBTAINED FOR THOSE SEGEMENTS OUTSIDE THE LANDFILL PROPERTY. ACTUAL OFFSET TO BE DETERMINED BY SCE. SEE FIGURE 3-11 FOR THE LOCATION OF THE PROPOSED "ON-SITE" POWER POLE RELOCATION AREA.

**SEE FIGURE 1-5 FOR ENLARGED PLAN OF ANCILLARY FACILITIES**

**REFERENCE**  
 TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (10' CONTOUR INTERVAL SHOWN).



S:\cadd\Drawings\Antelope\_Valley\_LF033-1857.2\ERFER\033-1857\ERF03.dwg 12/09/2005 08:39

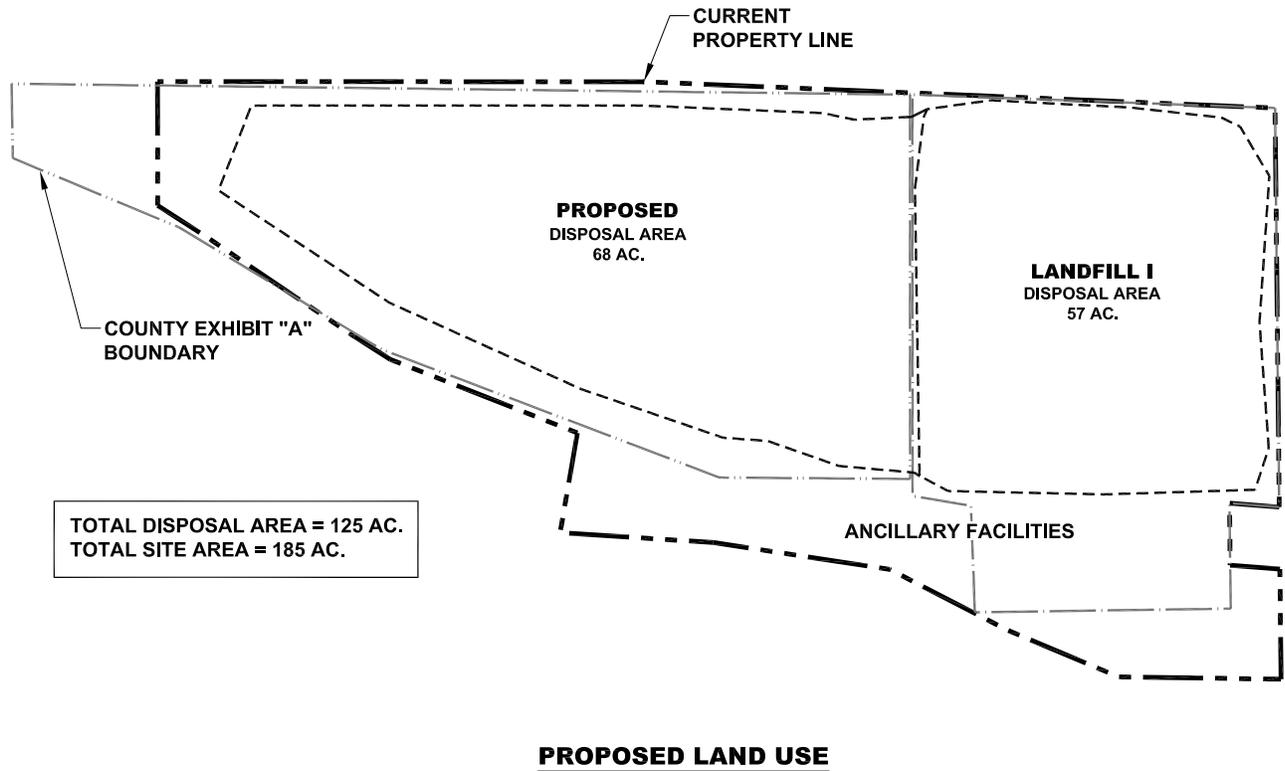
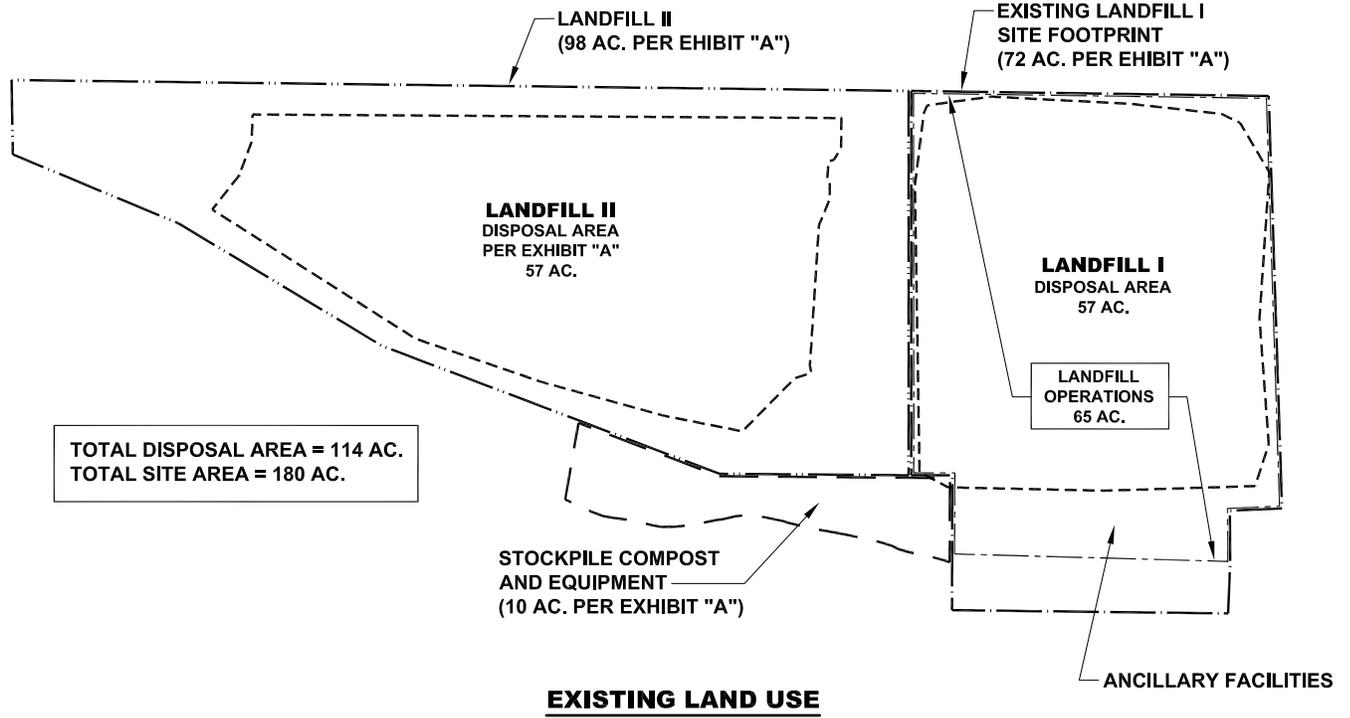


SURVEY REF: TOPOGRAPHIC BASE MAP FROM WALKER & ASSOC, SURVEY FLIGHT DATED NOV. 18, 2003 (CONTOUR INTERVAL 10').

EXPLANATION			
	PROPERTY BOUNDARY		PROPOSED ACCESS ROAD
	EXISTING INDEX TOPOGRAPHIC CONTOUR		ANCILLARY FACILITY BOUNDARY
	PROPOSED LANDFILL TRAFFIC FLOW		TRANSFER TRAILER
			35-FOOT HAUL TRUCK



- NOTES**
- FACILITIES ARE SHOWN FOR PLANNING PURPOSES, EXACT LOCATION AND SIZE MAY VARY.
  - THERE ARE MULTIPLE ALTERNATIVES FOR THE PROPOSED EROSION CONTROL OF ANAVERDE CREEK. REFER TO SECTION 4.3 FOR TEXT AND GRAPHIC DETAILS.



### 1.3 ENVIRONMENTAL ANALYSIS/SUMMARY OF IMPACTS

An environmental analysis was conducted for the proposed project in compliance with requirements of the California Environmental Quality Act (CEQA). An Initial Study was prepared to determine if the proposed project could result in significant environmental impacts. Based on the results of the Initial Study and other project information included in the NOP (see **Appendix A-1** of this EIR), the City of Palmdale (as the lead agency) determined that an EIR would be required for the proposed action, in accordance with Section 15162(a) of the CEQA Guidelines.

Based on results of the Initial Study, it was determined that the proposed project would have the potential to affect: Earth Resources, Air Quality, Hydrology and Water Quality, Biological Resources, Noise, Aesthetics/Light and Glare, Traffic and Circulation, and Risk of Upset/Human Health. Therefore, these environmental resource areas are addressed in the EIR. Subject areas that would not be affected by the project are not addressed in the EIR.

Both project-specific and cumulative significant impacts, the level of significance, and the mitigation measures recommended in this EIR are summarized in the Project Impact Summary (**Table 1-1**), beginning on page 1-12. The complete impact analysis is provided in Section 4.0 of this document.

#### 1.3.1 UNAVOIDABLE ADVERSE IMPACTS

As shown in Table 1-1, the proposed project would result in unavoidable significant adverse impacts to cumulative air quality (NO<sub>x</sub>, and PM-10 emissions), cumulative traffic (the roadway segment of Tierra Subida Avenue between 5<sup>th</sup> Street and Rayburn Road), and cumulative aesthetic impacts (visual qualities and height increase), for which a statement of overriding consideration will be required to be adopted by the City of Palmdale.

### 1.4 ALTERNATIVES TO THE PROPOSED PROJECT

Alternatives to the proposed project under consideration and evaluated in this EIR are listed below. The Alternatives Section 5.0 provides a descriptive analysis and environmental impact evaluation of each alternative. In addition, **Table 1-2**, Alternative Project Summary Matrix, located at the end of this section, displays information/criteria for determining whether an alternative should be selected.

- No Project
- Reduced Project – Height
- Reduced Project – Expansion with No Increase in Daily Permitted Tonnage (1,800 tpd)
- Alternative Location/Expansion of Lancaster

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<b>Draft EIR</b>		
<b>4.1 Earth Resources</b>		
<p><b>Impact 4.1-1 – Surface Fault Rupture</b> Potential for future surface rupture at the AVPL along the trace of the San Andreas Fault Zone. <i>Less than significant with regulation compliance.</i></p>	<p>No mitigation required.</p> <p>Waste containment structures for the proposed landfills expansion are setback from the mapped trace of the San Andreas Fault, as shown in <b>Figure 3-11</b>, Fill Plan C. A setback meets the requirements of Title 27 California Code of Regulations (CCR) for Class III landfills.</p>	
<p><b>Impact 4.1-2 – Earthquake Ground Shaking</b> Potential for ground shaking resulting in significant impacts, including leachate migration, slope failure, seismic settlement, damage to drainage facilities, monitoring wells, the new landfill entry road, and other landfill installations. <i>Less than significant with regulation compliance and mitigation.</i></p>	<p>The proposed landfill expansion and all ancillary support facilities will be designed in accordance with CCR, Title 27, Division 2, Seismic Requirements.</p> <p>4.1-1 <u>Prior to the issuance of the Waste Discharge Requirements (WDR’s) and approval of the Joint Technical Document (JTD) for the project by the Lahontan Regional Water Quality Control Board, the proposed design and supporting engineering analysis of the landfill’s containment structures shall be reviewed and approved by the RWQCB to ensure the design complies with State regulations pursuant to California Code of Regulations, Title 27, Division 2. The applicant shall demonstrate to RWQCB satisfaction that the landfill liner and leachate collection system have been designed to preclude failure and will resist the maximum seismic shaking expected at the site based on risk assessment. Further, the design shall demonstrate that the final slopes will be stable under both static and dynamic conditions to protect public health and safety and prevent damage to the facility such that no significant impact to the</u></p>	Project Specific

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p><u>environment will occur. The liner design, as proposed in Appendix B of the EIR, shall be modified or refined if necessary based on final engineering analysis and review by the RWQCB to ensure that the approved landfill design will mitigate impacts to a less than significant level.</u></p> <p><u>The landfill containment structures shall be constructed as approved by the RWQCB. During on-going landfill construction, Geologic mapping of rock and soil exposed in future excavations shall be completed during ongoing landfill construction.</u> Information on rock type and any exposed folds, fractures and folds will be collected. Permanent cut slopes shall be observed by a qualified geologist to check for adverse bedding, joint patterns, or other geologic features that may impact the approved landfill design. Where necessary, the permanent cut slopes shall be constructed to ensure their stability. The geologic maps will be included with the construction reports for each portion of the constructed landfill. The reports will be submitted to the LEA and Lahontan RWQCB.</p> <p>4.1-2 Earth moving operations shall be observed, and the placement of fill shall be tested by a qualified geotechnical engineer during ongoing landfill operations. Observation and testing will ensure fill placements are consistent with the approved landfill design.</p>	
<p><b>Impact 4.1-3 – Liquefaction</b> Potential for liquefaction in the expansion and</p>	<p>No mitigation required.</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p>proposed ancillary facilities areas south of disposal area, where some layers of saturated alluvial soils have been identified. Site specific liquefaction studies by GCE (2000) indicate the potential for liquefaction in the expansion area is low due to high recorded blow counts in the alluvial soils and substantial confining loads under the refuse fill. Site specific liquefaction studies by Gainico (2000 &amp; 2002) concluded that the potential for liquefaction in the ancillary facilities area is low because groundwater is more than 50 feet deep in these areas. <i>Less than significant.</i></p>		
<p><b>Impact 4.1-4 – Expansive Soils</b> Potential for expansive soils in the expansion area where claystone and silty claystone portions of the Anaverde Formation occur. <i>Less than significant with design/construction measures.</i></p>	<p>Design/construction measures (i.e., removal of weathered expansive soils, isolation of surface water, and substantial over burden pressure on any remaining expansive soils) will mitigate potential impacts.</p>	<p>Project Specific</p>
<p><b>Impact 4.1-5 – Slope Stability</b> Potential for slope failure of the landfill slopes during severe seismic activity. <i>Less than significant with mitigation and regulation compliance.</i></p>	<p>Mitigation Measures 4.1-1 and 4.1-2, above.  All slopes and pertinent attendant facilities shall be designed to applicable CCR, Title 27 Division 2, Seismic Requirements and City of Palmdale adopted building code, as applicable. Provision for the repair of the landfill cover system is provided through the Financial</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p><b>Impacts 4.1.6 – Cumulative</b> Potential cumulative earth resources impact. The geotechnical issues discussed above are site-specific and will be limited to within the development boundaries of the project site. <i>Less than significant.</i></p>	<p>Assurance requirements of Section 22210 of CCR, Title 27. No mitigation required.</p>	<p>Cumulative impacts</p>
<p><b>4.2 Air Quality</b></p>		
<p><b>Impact 4.2-1 – Short-term Construction</b> Potential for construction related impacts including the potential for PM-10 significance thresholds to be exceeded. The Mojave Air Basin is non-attainment for PM-10. <i>Less than significant with mitigation and regulation compliance.</i></p>	<p>The landfill will continue to comply with AVAQMD Rule 402 and 403 prohibiting creation of a nuisance from dust.</p> <p>4.2-1 Because the grading/disturbance of more than 10 acres will cause the daily PM-10 thresholds to be exceeded, construction of landfill ancillary facilities (new frontage road, R-5 access, and the Anaverde Creek erosion protection) shall not exceed 10 acres of grading on any given day.</p> <p>4.2-2 The internal haul road from the scale house into the landfill shall be incrementally paved with asphalted concrete or equivalent as depicted on <b>Figure 4.2-1</b>.</p> <p>4.2-3 Because of the potential for fugitive dust emissions from the proposed landfill to cause a public nuisance or exacerbate PM<sub>10</sub> non-attainment status within the Antelope Valley, dust generated by project activities shall be kept to a minimum and prevented from dispersing offsite. The project shall comply with all best available control measures of existing AVAQMD Rule 403, or</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p>any of its possible near future control measure enhancements. The project size is not sufficient to require preparation and approval of a formal fugitive dust control plan (DCP) as it is less than 100 acres of simultaneous disturbance. However, because of the non-attainment status of the air basin and the cumulative significance of continued elevated levels of PM-10 emissions, a DCP shall be prepared and submitted to the AVAQMD for their review and approval. The elements of such a plan are already part of site operational procedures. The preparation and implementation of a dust control plan is designed to create a CUP compliance evaluation mechanism to further protect the nearest existing and future residents. The elements of such a plan would likely include:</p> <ul style="list-style-type: none"> <li>a. Water trucks or fixed sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site.</li> <li>b. Areas to be graded or excavated shall be watered before commencement of the grading or excavation operations. Application of water must penetrate sufficiently to minimize fugitive dust during grading activities.</li> <li>c. All graded and excavated material, exposed soil areas, and active portions of the landfill, including on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or</li> </ul>	

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p>roll compaction as appropriate. Watering shall be done as often as necessary to prevent fugitive dust from leaving the landfill site.</p> <p>d. Signs shall be posted on-site limiting traffic to speeds of 15 mph or less on unpaved roads and 25 mph on paved roads.</p> <p>e. During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off-site or on-site.</p>	
<p><b>Impact 4.2-2 – Long-term Mobile Source Exhaust Emissions</b> Mobile source project related exhaust emissions (see <b>Table 4.2-4</b>) will result from on- and off-site heavy equipment, truck hauling operations, and employee commuting. <i>Less than significant with regulation compliance.</i></p>	<p>No mitigation required. The project will continue to comply with California Air Resources Board off-road equipment source control programs and with the California EMFAC emission control program.</p>	<p>Project Specific</p>
<p><b>Impact 4.2-3 – Long-term Operational</b> Potential for PM-10 emission increases related to excavation hauling, spreading, and compaction of cover material. <i>Less than significant with mitigation and</i></p>	<p>The landfill will continue to comply with AVAQMD Rules 401, 402, and 403 prohibiting creation of visible emissions and/or a nuisance from dust.</p> <p><b>Mitigation Measures 4.2-1, 4.2-2, and 4.2-3</b> above. No additional</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<i>regulation compliance.</i>	mitigation measure required.	
<p><b>Impact 4.2-4 – Long-term Landfill Gas</b> Potential impact related to increased subsurface landfill gas production. <i>Less than significant.</i></p>	No mitigation required. The landfill will continue to comply with AVAQMD Rule 1150.1 and New Source Performance Standards (NSPS) governing control of gaseous emissions from landfills. The LFG collection/disposal system constitutes best available control technology (BACT) and will be expanded as necessary consistent with Title 27 of CCR.	Project Specific
<p><b>Impact 4.2-5 – Long-term Odor</b> Potential for additional landfill gas from increased daily tonnage to cause odor. <i>Less than significant with mitigation and design measures/ improvements to ensure regulation compliance.</i></p>	<p>Implementation of project design measures/components (i.e., landfill gas system), developed consistent with Title 27 and AVAQMD Rules 401 and 402, will reduce the potential odor impacts to less than significant levels.</p> <p>4.2-4 If an odor nuisance problem should develop, appropriate control measures shall be employed such as applying additional cover material or more frequent application of the cover material to seal the surface, or adjustments to the <del>vacuum pressure on wells, or disposal equipment</del> landfill gas collection system.</p>	Project Specific
<p><b>Impact 4.2-6 – GHG Emissions</b> Potential conflict with AB-32 or potential adverse effects of global warming. <i>Less than significant with mitigation measures.</i></p>	<p>The recommended mitigation measures to reduce hauling and disposal GHG exhaust emissions are:</p> <p>4.2-5 The project shall include the following set of measures that, working together, will reduce operational greenhouse gas emissions of the project and the effects of global warming:</p>	

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	<ul style="list-style-type: none"> <li>• Hauling trucks shall be powered by liquefied natural gas (LNG) or ultra-low sulfur diesel fuel.</li> <li>• Idling of heavy-duty hauling trucks in excess of five minutes, and idling of off-road mobile sources of any type in excess of ten minutes shall be prohibited.</li> <li>• When new landfill equipment is purchased by WMI, new commercially available equipment shall be purchased that meets or exceeds California’s emission standards in effect at the time of purchase.</li> <li>• Onsite vehicles and equipment shall be properly maintained by being serviced at least every 90 days and once annually in compliance with Department of Transportation (DOT) requirements.</li> <li>• Operation equipment used for the proposed project shall use clean alternative (i.e., non-diesel/biodiesel) fuels, or use equipment that has been retro-fitted with diesel particulate reduction traps or equivalent control technology, using equipment certified by CARB. Such equipment is now subject to CARB’s new regulation to control PM emissions from off-road diesel engines.</li> <li>• For the purchase of primary heavy duty, diesel powered landfill equipment at WMI (dozers and compactors), if</li> </ul>	

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Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p>equipment meeting California’s 2014 emission standards for off-highway, heavy duty diesel equipment is commercially available before 2014, WMI shall purchase such equipment as older equipment is replaced.</p> <p>4.2-6 Within three years of project approval, the applicant shall develop a Greenhouse Gas Reduction Plan that demonstrates how the WMI will achieve by 2020 a reduction in annual GHG emissions such that emissions are no greater than 10 percent below 2006 levels and will meet or exceed all regulatory requirements related to GHG control. The Reduction Plan shall include one or more of the following measures, or combination thereof:</p> <ul style="list-style-type: none"> <li>• Use of B-5 or B-20 Biodiesel in on-site equipment and in heavy duty truck fleets (and as a condition of future contract approvals if third-party haulers are used);</li> <li>• Use of hybrid hauling trucks;</li> <li>• Use of Best Available Control Technology and BMPs when designating new waste disposal cells (e.g., by designing any additional gas collectors in bottom liner systems) and to increase gas combustion capacity/improve flare destruction efficiency;</li> </ul>	

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PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<ul style="list-style-type: none"> <li>• Reconsider the feasibility of gas-to-energy production capacity in the future for use in fueling vehicles, operating equipment or energy conversion;</li> <li>• Increased diversion of organic material from landfill disposal and use as landfill cover material;</li> <li>• Increased recycling and carbon offsets.</li> <li>• The plan shall include cost estimates for GHG reduction measures and identify funding sources. The plan shall include an implementation schedule that demonstrates substantial GHG emission reductions prior to the 2020 deadline, including implementation of “Early action” measures that may be implemented within three years of plan approval. The plan shall include an updated inventory of projected GHG emissions and an updated estimate of GHG emissions in 1990. The plan shall be subject to review and approval by AVAQMD.</li> <li>• Increase waste diversion of recyclable materials.</li> </ul> <p>4.2-7 Following closure of the landfill, the applicant shall continue to operate, maintain, and monitor the landfill gas collection and treatment system as long as the landfill continues to produce landfill gas, or until it is determined by the ACAQMD that emissions no longer constitute a considerable contribution to</p>	

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	greenhouse gas emissions, whichever comes first.	
<p><b>Impact 4.2-7 – Cumulative</b> Potential impact to NO<sub>x</sub> and PM-10 due to cumulative growth and developments in the surrounding area. The Mojave Air Basin is non-attainment for ozone and PM-10. ROG and NO<sub>x</sub> are ozone formation precursor compounds. Any increase in emissions, even at below-threshold levels will retard attainment of applicable standards. <i>Significant and unavoidable.</i></p>	<p>Mitigation Measures 4.2-1 through 4.2-3, above.  No additional mitigation available.</p>	Cumulative
<b>4.3 Hydrology and Water Quality</b>		
<p><b>Impact 4.3-1 – Post-Development Hydrology/ Flooding</b> Potential for post-development flows during flooding events not meeting the 85% pre-development attenuation criteria of 226 cfs. <i>Less than significant with design measures/improvements to meet City requirements.</i></p>	<p>Design improvements included in the Stormwater Management Plan (i.e., two (2) retention/detention basins) and Surface Water Control Plan shall be implemented so that post-development flows will be reduced to less than 85% of the pre-development flows (peak post-development flow estimated to be 160 cfs).</p>	Project Specific
<p><b>Impact 4.3-2 – Scour/Erosion of Creek</b> Potential for erosion at the north bank of the Anaverde Creek. <i>Less than significant with mitigation.</i></p>	<p>4.3-1 The final design for the Anaverde Creek Scour Protection System shall be developed by a qualified engineer to comply with the City of Palmdale engineering design requirements. The construction of the approved Scour Protection System shall be completed in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.</p>	Project Specific

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PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p><b>Impact 4.3-3 – Runoff and Surface Water Quality</b> Potential contamination of the Anaverde Creek and surface water quality. <i>Less than significant with design measures / improvements (i.e., SMP and SWCP) to ensure regulation compliance.</i></p>	<p>Implementation/construction of the proposed Stormwater Management Plan (SWMP) and Surface Water Control Plan (SWCP) will be developed consistent with all NPDES requirements for the entire site. Potential impacts to surface water quality will be reduced to less than significant levels.</p>	<p>Project Specific</p>
<p><b>Impact 4.3-4 – Groundwater Quality</b> Potential for groundwater quality impacts, including permeability. <i>Less than significant with design measures/ improvements to ensure regulation compliance.</i></p>	<p>Implementation of project design measures/components (i.e., Leachate Collection and Removal System, Composite Liner System and Groundwater Monitoring System), developed consistent with Title 27 and NPDES requirements, will reduce the potential groundwater quality impacts, including potential permeability impacts to less than significant levels.</p>	<p>Project Specific</p>
<p><b>Impact 4.3-5 – Cumulative Flooding</b> Potential impact to regional flooding due to cumulative total of developments in the surrounding area. <i>Less than significant with design measures/improvements to meet City requirement.</i></p>	<p>All other cumulative developments must also meet the City’s standard requirement that post-development flows cannot exceed 85% of the pre-development flows.</p>	<p>Cumulative</p>
<p><b>Impact 4.3-6 – Cumulative Water Quality</b> Potential impact to regional water quality (related to runoff, scour) due to the cumulative total of development in the surrounding area. <i>Less than significant with design measures/ improvements to ensure regulation compliance.</i></p>	<p>All other cumulative developments must comply with City ordinances to reduce urban pollutants, NPDES, and BMPs, which include implementing debris/detention basins and oil-water separation filtration systems (where appropriate) for stormwater and nuisance flows.</p>	<p>Cumulative</p>

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PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<b>4.4 Biological Resources</b>		
<p><b>Impact 4.4-1 – Vegetation and Habitats</b> Removal of existing Joshua and Juniper trees from the proposed expansion zone, 200-foot wide utility corridor, and new frontage road area. <i>Less than significant with mitigation.</i></p>	<p>4.4-1 Prior to the removal of any Joshua/Juniper trees, the <i>1998 Desert Vegetation Preservation Plan</i> (see <b>Appendix E-2</b>) prepared by FH&amp;A shall be updated and approved by the City of Palmdale consistent with the City’s Desert Vegetation Ordinance.</p>	Project Specific
<p><b>Impact 4.4-2 – Vegetation and Habitats</b> Potential impact related to 1.9 acres of CDFG jurisdictional area if work is performed within jurisdictional areas of Anaverde Creek and potential impact to habitat within Anaverde Creek by future runoff from the landfill. <i>Less than significant with mitigation.</i></p>	<p>4.4-2 Pursuant to Section 1601 – 1603 of the California Fish and Game Code responsible agencies (i.e., CDFG and Lahontan RWQCB) shall be notified and permits/approvals shall be obtained prior to any activities within, or encroachment upon delineated bed and bank of the Anaverde Creek along the southern margin of the Landfill property.</p> <p>4.4-3 Prior to issuance of the landfill’s Waste Discharge Requirements (WDRs), the project engineer shall finalize erosion and siltation control plans and other BMPs, as necessary to prevent graded and cleared areas from being eroded, resulting in the transport of sediment downstream to Anaverde Creek.</p>	Project Specific
<p><b>Impact 4.4-3 – Wildlife</b> The removal of the native vegetation from the project implementation has potential impacts to wildlife. The new roadway alignment will involve the possible removal of an active coyote den, located immediately adjacent to the realignment connection point with the existing City Ranch Road. <i>Less than significant.</i></p>	<p>No mitigation required.</p> <p>Although no formal mitigation is required, appropriate displacement techniques to avoid harm to the occupants will be implemented prior to grading.</p>	Project Specific

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PROJECT IMPACT SUMMARY (EIR)**

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<p><b>Impact 4.4-4 – Wildlife</b> Implementation of initial vegetation clearing during the breeding season of native birds could result in loss of nest impacts which would be in violation of the Federal Migratory Bird Treaty Act. <i>Less than significant with mitigation.</i></p>	<p>4.4-4 Landfill expansion actions which directly affect vegetation formations (i.e., initial vegetation cleaning) shall be initiated outside of the timing of the native bird nesting season (mid-April through mid-August) to avoid disturbing active nests, per provisions of the Migratory Bird Treaty Act and California Fish and Game Code. If initial vegetation disturbance and clearing cannot be performed outside of this window of non-breeding activity, then it shall be preceded by a thorough site survey for active nests by a qualified biologist; nests found shall be flagged, and a perimeter fence installed at an appropriate distance (usually between 50 and 300 feet from the nest, depending upon species and terrain). No work shall be performed within the fenced areas until such time as the nests are determined to be inactive and the fledglings have left the area.</p>	<p>Project Specific</p>
<p><b>Impact 4.4-5 – Wildlife</b> Potential impact to wildlife due to vegetation loss and potential peripheral effects (light, noise, movement) from the landfill onto the adjacent habitats. <i>Less than significant with mitigation.</i></p>	<p>4.4-5 Facility design and management practices shall be implemented to reduce the intensity of exterior and security lighting adjacent to habitat areas. Measures such as shielded, downward-directed exterior light fixtures, use of sodium vapor or similar low-intensity bulbs (other than mercury vapor), shall be utilized. Security and activity lighting shall be directed onto target working face areas, and not into the creek channel.</p>	<p>Project Specific</p>
<p><b>Impact 4.4-6 – Wildlife Corridors</b> The proposed project will be aligned within the same upland area as the existing landfill and ancillary facilities and will not measurably reduce the passage of wildlife through that portion of Anaverde Creek</p>	<p>Mitigation Measure 4.4-2 and 4.4-5, above.</p> <p>4.4-6 The final design of the “off-site” utility pole placement shall be outside of the bed and bank of the channel to permit free passage by the wildlife along the channel.</p>	<p>Project Specific</p>

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PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
corridor. <i>Less than significant with mitigation.</i>		
<b>Impact 4.4-7 – Cumulative</b> The project, in conjunction with other cumulative developments in the area, will result in cumulative losses of natural upland desert formations, native vegetation, and habitat values along Anaverde Creek and in the displacement effects to agency-listed CEQA-sensitive songbird and small mammal species. <i>Less than significant with mitigation.</i>	Mitigation Measures 4.4-1 through 4.4-6, above. No additional mitigation required.	Cumulative
<b>4.5 Noise</b>		
<b>Impact 4.5-1 – Construction Noise</b> Potential for an audible impact to existing residences as a result of landfill ancillary facility construction activities and the realignment of City Ranch Road (R-5 access and the new frontage road). <i>Less than significant with mitigation and regulation compliance.</i>	Construction activity for the realignment of City Ranch Road (R-5 access and the new frontage road) shall be limited between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday only and excluding legal holidays in compliance with the City’s noise standards within the Municipal Code.  4.5-1 In conjunction with grading permit issuance for the construction of new frontage road and the realignment of City Ranch Road (R-5 access) and during grading and construction operations, the following mitigation measures shall be implemented for the project:	Project Specific

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<ul style="list-style-type: none"> <li>a. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the City’s Public Works or Building Inspector.</li> <li>b. During construction of the new landfill access road, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the extent practical, to the satisfaction of the City’s Public Works or Building Inspector.</li> <li>c. During construction of the new landfill access road and to the satisfaction of the City’s Public Works Inspector or Building Inspector, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities.</li> </ul>	
<p><b>Impact 4.5-2 - On-Road Hauling Noise</b> Potential for significant off-site traffic noise impacts related to increased hauling trucks. <i>Less than significant.</i></p>	<p>No mitigation required.</p>	<p>Project Specific</p>
<p><b>Impact 4.5-3 - Operational Noise</b> Potential for operation noise impacts to existing and future residences as a result of the expanded landfill hours for receipt of refuse and the on-site heavy equipment used in earthmoving activities and the compaction</p>	<p>The proposed project would not exceed the City of Palmdale Noise Element or Municipal Code for anticipated site uses. However, because single-event operational noise may be intrusive even if standards are not exceeded, noise protection is recommended as follow.</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p>processes. <i>Less than significant with mitigation and regulation compliance.</i></p>	<p>4.5-2 Operational activities before 6:00 a.m. or after 8:00 p.m. shall be restricted as follows:</p> <ul style="list-style-type: none"> <li>a. No receipt of refuse or unloading activities shall be conducted during those hours.</li> <li>b. No heavy equipment operation within 1,000 feet of any residence under clear line-of-sight conditions shall take place during those hours.</li> <li>c. No bird repellent activity sound generators shall occur before 7:00 a.m. or after 8:00 p.m.</li> </ul>	
<p><b>Impact 4.5-4 – Cumulative On-Road Hauling Noise</b> Potential for cumulative noise impacts as a result of expanded landfill truck traffic and future cumulative growth in year 2007. <i>Less than significant.</i></p>	<p>No mitigation required.</p>	<p>Cumulative</p>
<p><b>Impact 4.5-5 – Cumulative Construction Noise</b> Potential for cumulative noise impacts as a result of the construction activities for the landfill ancillary facilities and the realignment of City Ranch Road (R-5 access and the new frontage road) in conjunction with the landfill expansion operational activities and</p>	<p>Construction of the project ancillary facilities and other cumulative developments shall be limited between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday only and excluding legal holidays in compliance with the City’s noise standards within the Municipal Code.</p> <p>Mitigation measures 4.5-1 and 4.5-2, above. No additional mitigation measure required.</p>	<p>Cumulative</p>

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
construction of projects in the surrounding area. <i>Less than significant with mitigation and regulation compliance.</i>		
<b>4.6 Aesthetics/Light and Glare</b>		
<b>Impact 4.6-1 – Scenic Resources/Visual Qualities</b> Potential impacts to scenic resources related to the proposed 11-acre wedge expansion/reconfiguration, 60-foot height increase and new landfill access roadway. <i>Less than significant with mitigation.</i>	4.6-1 Interim vegetative cover shall be established as land filling proceeds to help offset visual impacts prior to application of final cover and vegetation at landfill closure. This interim measure provides that the outer southerly facing slopes shall receive cover material consistent with native species of the surrounding terrain as the phased development continues with application at appropriate intervals but at a minimum of every two to four year. Interim vegetation plant densities/seed mix shall be completed consistent with the baseline study to be conducted prior to the beginning of land filling operations in the expansion area.  4.6-2 Final design of the access roadway shall comply with Policy ER 3.1.2, to the extent feasible, to reduce the visual impact to the existing ridgeline as viewed from Tierra Subida and Rayburn Road.	Project Specific
<b>Impact 4.6-2 – Litter</b> Potential for significant aesthetic impacts related to litter. <i>Less than significant with mitigation.</i>	4.6-3 During conditions of severe wind, operating hours shall be limited, size of the working face shall be reduced, and completed cells shall be promptly covered.  4.6-4 During landfill operations and after construction activity, personnel <del>members</del> shall conduct periodic litter cleanup along, 1)	Project Specific

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	the access roadway (R-5 access) and adjacent land from the scales to Tierra Subida and 2) adjacent properties adjacent to the landfill. The goal is to ensure that stray litter (including litter that is illegally dumped along the landfill access) is immediately removed when strong winds occur.	
<p><b>Impact 4.6-3 – Light and Glare</b> Potential increase in light and glare associated with the new ancillary uses. Potential cumulative light and glare impacts in conjunction with other cumulative developments in the area. <i>Less than significant with mitigation.</i></p>	Mitigation Measure 4.4-5 in Section 4.4 (Biological Resources), above. No additional mitigation measure is required.	Project-Specific Cumulative
<p><b>Impact 4.6-4 – Cumulative</b> Potential cumulative aesthetic impacts, in conjunction with existing Landfill I, permitted Landfill II, and other cumulative developments in the area. <i>Significant and unavoidable.</i></p>	Mitigation Measures 4.6-1 through 4.6-3, above. No additional mitigation measure is available.	Cumulative
<b>4.7 Traffic and Circulation</b>		
<p><b>Impact 4.7-1 – Existing Plus Project Volume to Capacity (V/C) Ratios/Roadway Links</b> Potential impact to level of service (LOS) on roadway links in the vicinity of the site. <i>Less than significant.</i></p>	No mitigation required.	Project Specific

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p><b>Impact 4.7-2 – Existing Plus Project Intersection Capacity Utilization (ICU)/Levels of Service (LOS)</b> Potential impact to LOS at intersections in the vicinity of the site. <i>Less than significant.</i></p>	<p>No mitigation required.</p>	<p>Project Specific</p>
<p><b>Impact 4.7-3 – Sight Distance</b> Potential for restricted sight distance for southbound vehicles on Tierra Subida Avenue approaching City Ranch Road. <i>Less than significant with mitigation.</i></p>	<p>4.7-1 The City of Palmdale shall approve the final roadway design for the new landfill access and periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.</p> <p>The future landfill access road alignment shall be along R-5 as a two lane roadway (60-foot right-of-way). R-5 shall intersect a new frontage road.</p> <p>The R-5 access road shall be constructed as a two lane roadway (60-foot right-of-way).</p> <p>The future landfill access road alignment shall also be along the new frontage road that would connect with City Ranch Road and intersect Tierra Subida at Rayburn Road, and create a 4-way signalized intersection, and construct the remaining access road along the R-5 dedicated right-of-way (<b>Figures 4.7-13</b>, Proposed Realignment of City Ranch Road to be Opposite Rayburn Road at Tierra Subida Avenue and <b>4.7-14</b>, Proposed City Ranch Road Roadway Cross-Section).</p>	<p>Project Specific</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p>Preliminary design of the frontage road calls for a 40-foot roadway measured from curb to curb, with an 8-foot sidewalk adjacent to the west curb and a 10-foot-minimum buffer between the east curb and the ultimate location of the west sidewalk of Tierra Subida proper. The new realignment of the landfill access (new frontage road) shall accomplish the following:</p> <ul style="list-style-type: none"> <li>▪ Improve sight distance and related operational safety.</li> <li>▪ Improve horizontal and vertical alignment.</li> <li>▪ Wider lanes will result at the Tierra Subida Avenue/Rayburn Road intersection than at the existing City Ranch Road intersection.</li> <li>▪ Improve traffic signal spacing along Tierra Subida Avenue.</li> </ul> <p>4.7-2 The applicant shall construct right-of-way and traffic signal improvements at the intersection of the landfill access road at Rayburn Road (see <b>Figure 4.7-13</b>) in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.</p> <p>4.7-3 During landfill operations, worker-rideshare and transit plans shall be encouraged by the landfill operator consistent with the goals of the Air Quality Management Plan.</p> <p>4.7-4 The applicant shall pay traffic impact fees in accordance with the City Traffic Impact Fee Ordinance. Credits shall be applied consistent with the Ordinance for the improvements (see <b>Mitigation Measure 4.7-2</b>) installed by the applicant.</p>	

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<p><b>Impact 4.7-4 – State Route 14 Freeway</b> Potential impact to SR-14 from project and cumulative growth, south of Avenue S. <i>Less than significant.</i></p>	<p>No mitigation required.</p>	<p>Project Specific</p>
<p><b>Impact 4.7-5 – Cumulative Year 2007 Volumes to Capacity Ratios</b> Potential impact to LOS for Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road for Year 2007 without project and with project traffic conditions. <i>Project’s contribution to cumulative impact is less than significant with mitigation. Cumulative impact remains significant and unavoidable.</i></p>	<p>Mitigation Measures 4.7-1 through 4.7-4, above.  This significant cumulative impact will remain until such time that Tierra Subida is widened to its ultimate General Plan designation.</p>	<p>Cumulative</p>
<p><b>Impact 4.7-6 – Cumulative Year 2007 Intersection Capacity Utilization (ICU)</b> Potential cumulative impact to LOS for intersections in the vicinity of the site during peak hours for the Year 2007 without project traffic conditions. Potential cumulative impact to LOS for intersections for the Year 2007 with project traffic conditions, during the peak hours for average and peak inflow of material traffic conditions. <i>Less than significant.</i></p>	<p>No mitigation required.</p>	<p>Cumulative</p>

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**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<b>4.8 Risk of Upset and Human Health</b>		
<p><b>Impact 4.8-1 – Household Hazardous Waste</b> Potential impact related to household hazardous waste and radioactive waste. <i>Less than significant with mitigation.</i></p>	<p>4.8-1 The permittee shall establish and maintain a comprehensive waste load checking program, which shall include the following:</p> <ul style="list-style-type: none"> <li>a. All waste hauling vehicles shall be screened at the scales with a radiation detector device acceptable to the Local Enforcement Agency for the presence of radioactive materials.</li> <li>b. Sensors capable of detecting volatile organic compounds, acceptable to the Local Enforcement Agency shall be available and used as directed by the Local Enforcement Agency.</li> <li>c. A remote television monitor or an alternative procedure acceptable to the Local Enforcement Agency shall be maintained at the scales to visually inspect incoming roll-off type loads and open top vehicles.</li> <li>d. The dumping area shall be continuously inspected for hazardous and liquid waste and radioactive waste/materials. This inspection shall be accomplished by equipment operators and spotters who have been trained in an inspection program approved by the Local Enforcement Agency (LEA). The landfill currently complies with the LEA inspection procedures and will continue to comply as required by their SWFP.</li> </ul>	<p>Project Specific</p>

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1  
PROJECT IMPACT SUMMARY (EIR)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	<p>e. Manual inspection of randomly selected refuse loads shall be conducted. The frequency of inspections shall be as directed by the Local Enforcement Agency. The checking program shall be conducted by personnel trained in accordance with a plan approved by the Local Enforcement Agency.</p> <p>Additionally, as part of the proposed project, the entrance to the facility is equipped with monitors to detect radioactive waste.</p>	
<p><b>Impact 4.8-2 – Cumulative</b> Potential cumulative impact related to increased household waste. <i>Less than significant with mitigation.</i></p>	<p>Mitigation Measure 4.8-1, above. No additional mitigation measure required.</p>	<p>Cumulative</p>

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1 CONT'D.  
PROJECT IMPACT SUMMARY (INITIAL STUDY)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<b>Initial Study</b>		
<b>Archaeological Resources</b>		
<p>The 1992 certified EIR indicated that the on-site archaeological resources would be considered significant and that disturbance would be considered adverse project-specific and cumulative impacts. <i>Less than significant with mitigation.</i></p>	<p>44. In accordance with Sections 15064.5 and 15126.4 of the California Environmental Quality Act and Appendix K of the California Environmental Quality Act, if engineering or other project parameters will not allow preservation, the applicant shall subject the onsite deposits of shell and lithic material detected during the reconnaissance of site CA-LAN-876 and site AVL-1, subsequently designated CA LAN-1917 to a data recovery excavation and recordation. The applicant shall be responsible for all costs incurred for archaeological excavation and reporting. The data recovery excavation and recordation shall be performed prior to the issuance of a <i>Solid Waste Facilities Permit</i> and include the development of a mitigation plan. <b>(Above Certified EIR Mitigation was completed, refer to Appendix A-1 of this document)</b></p> <p>45. All material collected during the above recommended work shall be donated to an institution which has adequate facilities for curation, display and use by interested scholars and the general public. <b>(Above Certified EIR Mitigation was completed, refer to Appendix A-1 of this document)</b></p> <p>46. A qualified archaeologist shall be present during clearing and initial grading of the property to monitor any additional deposits obscured by brush or buried by alluvial material. The monitoring archaeologist shall be prepared to document and recover any significant material that appears as quickly as possible using standard archaeological field practice. <b>(Above Certified EIR</b></p>	<p>Project Specific Cumulative</p>

\* Many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1 CONT'D.  
PROJECT IMPACT SUMMARY (INITIAL STUDY)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
<b>Mitigation still applicable)</b>		
<b>Paleontological Resources</b>		
<p>The 1992 certified EIR considered disturbance to paleontological resources and exposing fossils significant project-specific and cumulative impacts. <i>Less than significant with mitigation.</i></p>	<p>47. During landfill excavation, a qualified paleontologist shall be retained to perform periodic inspections of excavations and if necessary, salvage exposed fossils. The frequency of inspections will depend on the rate of excavation, the material being excavated, and the abundance of fossils. During grading, the paleontologist shall be allowed to divert or direct grading in the area of an exposed fossil to facilitate evaluation and, if necessary, salvage. Because of the small nature of some of the fossils possibly present in the study area, samples of the sediments shall be collected for processing through fine mesh screens. <b>(Above Certified EIR Mitigation still applicable)</b></p> <p>48 All fossils collected during landfill excavation shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Provisions for preparation and curation shall be made before the fossils are donated to their final repository. <b>(Above Certified EIR Mitigation still applicable)</b></p>	<p>Project Specific Cumulative</p>
<b>Water (natural stream, springs, and wetlands), Blueline Stream on Landfill II</b>		
<p>The 1992 certified EIR indicated that the proposed project would alter the blueline stream located on the previously approved 75-acre expansion site. <i>Less than significant with mitigation.</i></p>	<p>43. Pursuant to Section 1601-1603 of the California State Fish and Game Code, the California Department of Fish and Game should be notified prior to any alteration of the blue line drainage traversing the property. The purpose of this notification is to allow the state to regulate alterations to streambed habitats, including, but not necessarily limited to, those drainages which</p>	<p>Project Specific</p>

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-1 CONT'D.  
PROJECT IMPACT SUMMARY (INITIAL STUDY)**

Impact	Mitigation Measures/Regulation Compliance/Design Measures *	Scope
	are shown by a “blue line” in U.S.G.S. 7.5 minute quad sheets. (Above Certified EIR Mitigation was completed, refer to Appendix A-1 of this document)	

\* Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

**TABLE 1-2  
ALTERNATIVE PROJECT SUMMARY MATRIX**

<b>Alternative Determination Criteria</b>	<b>Meet Project Objectives</b>	<b>Reduce/Avoid Significant Environmental Impacts</b>
No Project	This alternative does not meet seven (7) of the eight (8) project objectives as outlined in Section 5.2.1 above.	Although the no project alternative is considered environmentally superior to the proposed project, this alternative does not substantially lessen the impacts associated with the proposed project. The alternative would reduce but not avoid the unavoidable impact associated with cumulative air emission impacts and Year 2007 cumulative traffic impacts.
Reduced Project – Height	This alternative does not meet project objectives #1 and #2, as outlined in Section 5.2.2, above.	The reduced height project alternative is not considered environmentally superior to the proposed project. The alternative would not reduce or avoid the unavoidable impact associated with cumulative air emission impacts, cumulative aesthetic impacts, and Year 2007 cumulative traffic impacts.
Reduced Project – Expansion with No Increase in Daily Permitted Tonnage – 1,800 net tpd	This alternative does not meet project objectives #2, #6, and #7, as outlined in Section 5.2.3, above.	Although this alternative is considered environmentally superior to the proposed project, the alternative would reduce but not avoid the unavoidable impact associated with cumulative air emission impacts, cumulative aesthetic impacts, and Year 2007 cumulative traffic impacts.
Expansion of the Lancaster Landfill	This alternative does not meet any of the eight (8) project objectives outlined in Section 5.2.4 above.	This alternative would not reduce or avoid the unavoidable impacts of the proposed project. It would create potentially greater groundwater quality, traffic, and biological resources impacts. This alternative is not considered environmental superior to the proposed project and therefore should not remain under consideration.

## **2.0 INTRODUCTION/BACKGROUND**

Subsequent to the preparation of this Draft EIR in December of 2005, the City of Palmdale has proposed to widen Tierra Subida Avenue between City Ranch Road and Cactus Drive (City Project Number 482). Since the City Project Number 482 would affect the proposed project site's existing access at the intersection of City Ranch Road and Tierra Subida Avenue, a sight distances evaluation was conducted (JT Engineering 2010) (see **Appendix G-1**). Based on a sight distance evaluation, the project engineer recommended the construction of a new frontage road connecting to Tierra Subida at Rayburn Road as the future access to the project site. Section 4.7, Traffic and Circulation, of this Draft EIR Amendment includes analysis of the new circulation improvement. In addition, with the passing of the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32: California Health and Safety Code Division 25.5, Section 38500, et.seq., or AB 32), the City of Palmdale decided to incorporate a greenhouse gas (GHG) emission and climate change analysis in this Draft EIR Amendment. Section 4.2, Air Quality, of this Draft EIR Amendment includes a discussion of the GHG and climate change analysis results (see **Appendix C-1**). It should be noted that these amendments did not result any changes to the conclusions of the proposed project based on the new analysis conducted.

In December 2005, the original Draft EIR was circulated for the California Environmental Quality Act (CEQA) mandated 45-day public review from December 14, 2005 to January 27, 2006. A total of nine comment letters and the Office of Planning and Research (OPR) transmittal letter were received on the Draft EIR. The comment letters were received from:

1. Southern California Association of Governments, Brian Wallace – January 9, 2006
2. County of Los Angeles, Department of Public Works, Donald Wolfe – January 11, 2006
3. State of California, Health and Human Services Agency, Department of Health Services, Joseph E. Crisologo – January 11, 2006
4. California Integrated Waste Management Board, Raymond M. Seamans – January 12, 2006
5. Steve Schirmbeck – January 14, 2006
6. State of California, Public Utilities Commission – January 24, 2006
7. State of California, Business, Transportation and Housing Agency, Department of Transportation, District 7, Cheryl J. Powell – January 24, 2006
8. County of Los Angeles, Department of Public Works, Donald L. Wolfe – January 26, 2006
9. California Regional Water Quality Control Board, Lahontan Region – January 27, 2006
10. State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit – January 30, 2006

In addition to the comment letters, verbal comments were received from Jack and Rose O'Conner during a meeting with Waste Management on January 4, 2006. Responses to comment letters and verbal comments were prepared and sections of the December 2005 Draft EIR were revised (including typographical errors) as a result of the comments received during the 45-day public review period. Changes made to the Draft EIR text in response to comments are indicated in ~~strikeout~~ (deletion) and underlined (addition) text.

### **2.1 PURPOSE OF THE EIR**

The Initial Study (IS) prepared for the proposed CUP expansion/reconfiguration determined that significant environmental impacts may occur, and therefore, an EIR was warranted. This environmental document is an Environmental Impact Report (EIR) that incorporates by reference the certified 1992

Antelope Valley Public Landfill Expansion EIR for Landfill II and 1993 adopted Mitigated Negative Declaration (MND). It updates and incorporates the applicable mitigation measures contained in the 1992 and 1993 documents and introduces new measures to mitigate project-related potential impacts.

An EIR is an informational document prepared pursuant to California Environmental Quality Act (CEQA). It provides decision-makers, public agencies, and the public in general with detailed information about the potential significant environmental effects of a proposed project. It also lists the ways in which the significant effects of a project might be minimized and addresses alternatives to the project. CEQA requires that an EIR contain at a minimum, certain specific information, including but not limited to a clear, concise project description; environmental settings; discussion of environmental impacts; effects found not to be significant, and cumulative impacts. This information is required pursuant to Sections 15120 through 15132 of the State Guidelines for Implementation of CEQA (CEQA Guidelines).

### **2.1.1 INCORPORATION BY REFERENCE**

As permitted by Section 15150 of the CEQA Guidelines, this Draft EIR has referenced several technical studies, analyses, and reports. Information from the documents that have been incorporated by reference has been briefly summarized in the appropriate section(s) that follow and the relationship between the incorporated part of the referenced document and the EIR has been described. The documents and other sources, which have been used in the preparation of this EIR, are identified in Section 10.0 (Data Sources and References). In accordance with Section 15150(b) of the State CEQA Guidelines, the location where the public may obtain and review these referenced documents and other sources used in the preparation of the EIR is also identified within the document. In addition to the technical studies, the Final EIR and MND prepared for the AVPL Expansion (County Case Nos. 85512 and 93041/State Clearing House (SCH) No. 1990010988) have also been used to prepare the EIR. Where appropriate and necessary, information contained in those documents have been incorporated by reference as permitted by CEQA and the State CEQA Guidelines. The Final EIR and MND for the AVPL Expansion are available at the City of Palmdale Planning Department for review.

### **2.2 ENVIRONMENTAL PROCEDURES**

The proposed Antelope Valley Landfill expansion EIR has been prepared in accordance with CEQA as amended (Public Resource Code Section 21000 et seq.) and the State Guidelines for Implementation of CEQA (CEQA Guidelines) as amended (California Administrative Code Section 15000 et seq.). This EIR complies with the rules, regulations, and procedures adopted by the City of Palmdale for implementation of CEQA.

This EIR analyzes and assesses the potentially significant environmental impacts of the proposed project. The potential cumulative impacts, that is, the effects of the proposed project in conjunction with past, present, and reasonably foreseeable future projects in the surrounding area, are also analyzed. The EIR identifies alternatives to the proposed project and discusses possible ways to reduce or avoid the potentially significant environmental impacts.

CEQA Guidelines Section 21081.6 (1) requires that a public agency adopt a reporting or monitoring program for adopted mitigation measures or conditions of the project approval in order to mitigate or avoid significant effects on the environment. This program is being developed as a separate document

and will be made available to the City decision-makers at the public hearing stage of the CEQA process in conjunction with the Final EIR.

### **2.3 INTENDED USES OF THE EIR**

Pursuant to the requirements of CEQA, the EIR is intended to provide information regarding the environmental consequences of, mitigation measures for, and alternatives to, the proposed CUP & SWFP. It is also meant to facilitate discussions with other agencies regarding implementation of mitigation measures. CEQA is specific about providing disclosure where needed to demonstrate to the public that the lead agency has analyzed and considered the environmental implications of the project. With these guiding principles in mind, according to the CEQA Guidelines Section 15121:

- (a) An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.*
- (b) While the information in the EIR does not control the agency's ultimate discretion on the project, the agency must respond to each significant effect identified in the EIR by making findings under Section 15091 and if necessary by making a statement of overriding consideration under Section 15093.*
- (c) The information in an EIR may constitute substantial evidence in the record to support the agency's action on the project if its decision is later challenged in court.*

As stated above, the EIR will provide environmental information to the public and agencies that will be affected by the project or that otherwise are likely to have an interest in the project. These agencies and organizations include, but are not limited to, the California Integrated Waste Management Board (CIWMB), Local Enforcement Agency (LEA), Regional Water Quality Control Board (RWQCB), and Antelope Valley Air Quality Management District (AVAQMD).

#### **2.3.1 PROJECT DISCRETIONARY APPROVALS**

A discretionary approval is an action taken by a lead agency that calls for the exercise of judgment in deciding whether to approve or how to carry out a project. For this project, the lead agency is the City of Palmdale. To approve and implement the proposed Conditional Use Permit (CUP), the following specific discretionary actions would need to be taken by the Planning Commission:

- ***Certification of Environmental Impact Report and Approval of Mitigation Monitoring and Reporting Program:*** An EIR is required to analyze all potential environmental impacts of the project and includes mitigation measures, alternatives, and other information required by CEQA.
- ***Approval of a Conditional Use Permit:*** A CUP is proposed to allow for the project modification outlined in Section 1.0 of this document.

#### **2.3.2 RELATED APPROVALS**

In accordance with Section 15161 of the State CEQA Guidelines, this document is intended to serve as a "project" EIR that examines the environmental impacts of the specific development project. In this case,

several discretionary actions are requested to implement the proposed project. The analysis contained in this document will focus on the changes in the environment that will result from the development of the proposed improvements identified by the applicant for the AVPL Landfill.

The principal agency having jurisdiction over the proposed project is the City of Palmdale because the project site is located within the City limits. Nonetheless, the proposed project includes a series of possible discretionary approvals over which a number of agencies may have authority. **Table 2-1** lists potential state, regional, and local approvals that may occur during the course of implementation of the proposed project and identifies the agencies with potential jurisdiction over these permits and/or approvals.

Implementation of the proposed project in conjunction with other cumulative developments will result in the need for off-site right-of-way and traffic signal improvements at the intersection of the landfill access road and Rayburn Road (see **Figure 4.7-13**). The “final design” of the improvements will be determined at a later date. A portion of these improvements will require right-of-way property acquisition and/or eminent domain to implement improvements consistent with City requirements. Because the “final design” of the improvements will be determined at a later date, it would be speculative to analyze the specific impact of the improvements. However, the majority of impacts that would result from the roadway improvements include the right-of-way property acquisition, eminent domain, existing roadway restriping and relocation of curb, associated with the intersection improvements at Rayburn and the new landfill access road. Prior to the implementation of these off-site roadway improvements a determination will be made if additional CEQA analysis is necessary for the implementation of the improvements.

**TABLE 2-1  
LIST OF POTENTIAL RESPONSIBLE AGENCIES  
PROJECT APPROVALS**

<b>Agency</b>	<b>Permit/Approval</b>
<b>Local Agencies</b>	
<ul style="list-style-type: none"> <li>▪ City of Palmdale</li> <li>▪ City of Palmdale, Department of Public Works</li> </ul>	<ul style="list-style-type: none"> <li>▪ Land Use, Building, Grading and Ancillary Permits</li> <li>▪ Street, Storm Drainage and Flood Control Improvements</li> </ul>
<b>Regional Agencies</b>	
<ul style="list-style-type: none"> <li>▪ Los Angeles County Department of Health Services/Local Enforcement Agency (LEA)</li> <li>▪ Antelope Valley Air Quality Management District</li> <li>▪ <u>County Solid Waste Management Committee/Integrated Waste Management Board</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ Solid Waste Facilities Permit (SWFP)</li> <li>▪ Authority to Construct (ATC) &amp; Permit to Operate (PTO) a gas collection system</li> <li>▪ <u>Finding of Conformance</u></li> </ul>
<b>State Agencies</b>	
<ul style="list-style-type: none"> <li>▪ California Integrated Waste Management Board</li> <li>▪ State Water Resources Control Board</li> <li>▪ Regional Water Quality Control Board</li> </ul>	<ul style="list-style-type: none"> <li>▪ Solid Waste Facilities Permit (SWFP)</li> <li>▪ Waste Discharge Requirements (WDRs)</li> <li>▪ National Pollution Discharge Elimination System (NPDES) Storm Water Permit</li> <li>▪ NPDES Construction Permit</li> </ul>
<ul style="list-style-type: none"> <li>▪ California Department of Fish and Game</li> </ul>	<ul style="list-style-type: none"> <li>▪ Streambed Alteration Agreement (SAA)</li> </ul>

## **2.4 PROJECT HISTORY AND PRIOR CEQA DOCUMENTATION**

### **2.4.1 PROJECT HISTORY**

Palmdale Disposal Company, Inc. opened the Antelope Valley Landfill I at its present location in 1956 under a permit issued by the Los Angeles County Department of County Engineers Office. The site was originally permitted to be operated as a Class II-2 sanitary landfill (equivalent to a Class III under the current Article 3, Chapter 15, Title 23, of the California Code of Regulations Chapter 15 State regulations). A Class III landfill is permitted to accept non-hazardous solid waste including dewatered sludge and acceptable incinerator ash. However, no sludge has been or will be accepted at the AVPL. In order to ensure continued capacity in the Palmdale area beyond the expected life of the existing facility, WMI is seeking to obtain the necessary permits to expand the existing facility.

The AVPL (Landfill I), consists of approximately 72 acres (eastern portion). Of the 72 acres, the northern 65-acre parcel is approved for landfill operations under the current SWFP No. 19-AA-0009. Of these 65 acres, 57 acres are approved for disposal of refuse under the SWFP Permit. The remaining 7 acres (southern portion) has been historically used for offices and hauling company operations ancillary to the approved landfill. As of October 2005, this landfill has a remaining life of approximately 1½ to 2 years.

Immediately adjacent and to the west is a 98-acre area comprising the AVPL II (Landfill II), previously located in the unincorporated portion of the County and annexed to the City of Palmdale as of November 21, 2003, under Annexation 1998-01 (western portion, as outlined in Exhibit "A" presented on Figure 1-3). A Conditional Use Permit (CUP) for Landfill II was granted by the Regional Planning Commission, County of Los Angeles (Regional Planning) on April 8, 1992. An amendment to the CUP was approved on December 1, 1993. This landfill was issued SWFP No. 19-AA-5624 and has not been constructed. Of the 98 acres (per the Exhibit "A"), approximately 57 acres were approved for disposal of refuse. Additionally, 10 acres were approved and are shown on Exhibit "A" (south and southeast portions of the landfill boundary) for ancillary facilities. Refer to the shaded/cross hatched areas on the attached Exhibit "A". The total combined area for landfill operations (including Landfills I, II, and ancillary facilities) is approximately 180 acres.

As stated previously, the current project applicant, WMI, submitted the revised application for CUP for the AVPL project. The original application was filed by the former owners, the Arklin Brothers Enterprises on November 2, 1998. Subsequent to filing the 1998 application, a lot line adjustment facilitating sale of the landfill, was conducted by the Arklin Brothers and approved by the County of Los Angeles in April 1999. WMI purchased the property in May 1999.

The total 185 acres of proposed Landfill Facility area is further verified by the current APN maps (62.02 acres, 92.38 acres and 30.54 acres totaling 184.94 acres) which were updated following the purchase of AVPL by WMI in 1999.

### **2.4.2 PRIOR CEQA DOCUMENTATION**

Landfill I was originally permitted to operate by the Los Angeles County Department of County Engineers Office. Landfill I was permitted prior to the 1972 enactment of CEQA and was grandfathered into the City of Palmdale. In 1984, an application for an expansion project to Landfill I (the expansion is referred to as Landfill No. II) was submitted to the Los Angeles County Department of Regional Planning (LACDRP). IS No. 84-012 was prepared by the Los Angeles County Planning Department to determine

the project's (i.e., Landfill II) potential impacts to the environment. The IS was completed on October 31, 1984. It was determined that the landfill expansion may have a significant effect on the environment. Consequently, Los Angeles County required preparation of an EIR. The Draft EIR (SCH No. 85111312) was circulated for 45-day public review. Comments received were responded to in the Addendum to the Draft EIR (March 1985). A Supplemental Response to Comments document was prepared in August 1987. This EIR was not certified due to the uncertainty related to the status of a possible Holocene fault under the site.

Kleinfelder and Associates worked with the RWQCB in conducting detailed geotechnical analyses to determine the presence of a possible Holocene fault under the project site. The resultant information proved that the feature underlying the proposed expansion site was not a Holocene fault, but rather a fracture. In 1990 RWQCB concurred with the Kleinfelder and Associates' findings and concluded that the basic conceptual design of the landfill expansion was adequate for the protection of water quality. Based on the new information, in 1991 the applicant proceeded with a request for approval of a CUP for the landfill expansion project. The landfill expansion (i.e., Landfill II) project proposed in 1984 was not substantially different from the expansion proposed in 1991. Draft EIR (SCH No. 1990010988) was prepared and circulated in October 1991, and the Final EIR was prepared in February 1992 and was certified by the Los Angeles County Regional Planning Commission, on April 8, 1992.

An amendment to the CUP (allowing for an increase in daily tonnage) was approved along with an MND (including a revised traffic study) on December 1, 1993. The permitted daily levels of waste (i.e., refuse to be disposed of in the landfill) analyzed in the 1991/1992 and 1993 environmental documents were 600 tons per day (tpd) and 1,800 tpd, respectively. These refuse disposal tonnages excluded recyclables and for environmental impact analysis purposes the 1993 traffic, air quality and noise analyses considered a total daily intake (i.e., refuse and recyclables of 3,564 tons/day). These previously approved County environmental documents are available for review at the City of Palmdale Planning Department located at 38250 Sierra Highway.

Two additional CEQA documents have been prepared to support approval of activities/facilities associated with the existing Landfill operations. The County LEA prepared and approved an MND on November 2, 1995 for the use of ADC. The City of Palmdale prepared and approved an MND on July 7, 2004 for the construction of a 4,000-square foot Household Hazardous Waste (HHW) Service Center. The location of this facility is shown on **Figure 1-5**. These MND documents are also available for review at the City of Palmdale Planning Department.

This EIR prepared for the currently proposed project (i.e., the proposed City CUP) is a supplement to the 1992 certified EIR for Landfill II and 1993 adopted MND and intends to use those documents for purposes of focusing the current analysis.

## **2.5 LEAD AGENCIES AND CONTACTS**

The lead agency for preparation of this EIR is the City of Palmdale, and therefore, the City has the authority to release the Draft EIR to public agencies, organizations, and interested individuals for review and comment. The Draft EIR is available for inspection and copying at the City of Palmdale. The project applicant is WMI. The environmental consultant is EDAW/AECOM. Preparers of and contributors to this report are listed in the Report Preparation Resources section of this EIR. Key contact persons are as follows:

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**2.6 MAJOR ISSUES**

The major issues evaluated in this EIR have been determined through the IS, NOP, comments letters from various agencies, and the general public through a scoping meeting, and through discussions with City of Palmdale. The comments received during the NOP review period which began on March 1, 2004 and ended on April 2, 2004, and responses as deemed necessary are included in **Appendices A-2 and A-3** of this EIR. Comments were accepted through April 29, 2004. A scoping meeting was held at the City of Palmdale City Hall, on March 29, 2004 to solicit input and comments from the public; however, no member of the public attended the scoping meeting. The following comment letters were received during the NOP period:

- Southern California Association of Governments (SCAG) – March 24, 2004
- Department of Transportation – March 24, 2004
- Antelope Valley Archaeological Society, Environmental Review Committee – March 26, 2004
- California Integrated Waste Management Board – March 30, 2004
- Department of Fish and Game – March 30, 2004
- County of Los Angeles, Department of Public Works – April 12, 2004
- County of Los Angeles, Department of Fire – April 29, 2004

The following **Table 2-2** presents a list of environmental issues raised by the above comment letters. The SCAG letter just acknowledged receipt of the NOP and did not raise any environmental issues; therefore is not listed below. The sections of the EIR and technical appendices that incorporate or address the issues are also specified.

**TABLE 2-2  
NOP COMMENT LETTERS AND ISSUES RAISED**

<b>Comment Letter/Issues Raised</b>	<b>EIR Section &amp; Technical Appendix</b>
<b><i>Department of Transportation, District 7, Regional Planning, March 24, 2004</i></b>	
▪ Preparation of a traffic study and its required contents.	Appendix G
▪ Project’s impact on State transportation system (i.e., SR-14).	Section 4.7 and Appendix G
▪ Equitable share responsibility for traffic mitigation measures, based on Caltran’s Guide.	Section 4.7 and Appendix G
<b><i>Antelope Valley Archaeological Society, Environmental Review Committee, March 26, 2004</i></b>	
▪ Discuss status of CA-LAN-875.	May 3, 2004 response letter – Appendix A-2
▪ Discuss archaeologist’s findings at the site CA-LAN-1917.	May 3, 2004 response letter – Appendix A-2
▪ Discuss archaeologist’s findings and level of effort for site CA-LAN-876	May 3, 2004 response letter – Appendix A-2
▪ Availability of the archaeology report.	May 3, 2004 response letter – Appendix A-2
▪ Explore options for developing a local curation facility.	May 3, 2004 response letter – Appendix A-2
▪ Future involvement of Native Americans and greater cooperation between the outside contractors and local archaeologists.	May 3, 2004 response letter – Appendix A-2
▪ Accidental discovery of a site at the landfill.	May 3, 2004 response letter – Appendix A-2
▪ Continued monitoring.	– Section 8.1.1 and Appendix A-2
▪ Incorporate archaeological resources issues in the EIR.	– Section 8.1.1 and Appendix A-2
<b><i>California Integrated Waste Management Board, March 30, 2004</i></b>	
▪ Discuss how project meets State Minimum Standards for environmental protection.	Section 3.0
▪ Define/address project components (i.e., final elevations; acceptable waste; hours of operation; ADC; tonnage intake; proposed facilities; traffic; permitted area vs. permitted disposal area)	Section 3.0
▪ CEQA compliance per CIWMB’s requirements.	Section 4.0 – 8.0
<b><i>Department of Fish and Game, March 30, 2004</i></b>	
▪ Assessments of flora and fauna.	Section 4.4 and Appendix E-1

<b>Comment Letter/Issues Raised</b>	<b>EIR Section &amp; Technical Appendix</b>
<ul style="list-style-type: none"> <li>▪ Discussion of direct, indirect, cumulative impacts, and mitigation measures.</li> </ul>	Section 4.4 and Appendix E-1
<ul style="list-style-type: none"> <li>▪ Analyzing a range of alternatives.</li> </ul>	Section 5.0
<ul style="list-style-type: none"> <li>▪ Addressing appropriate permitting (i.e., California Endangered Species Act [CESA] permit).</li> </ul>	Section 4.4 and Appendix E-1
<ul style="list-style-type: none"> <li>▪ Avoiding impacts to water courses.</li> </ul>	Section 4.4 and Appendix E-1
<b><i>County of Los Angeles, Department of Public Works, April 12, 2004</i></b>	
<ul style="list-style-type: none"> <li>▪ Environmental programs (Countywide Siting Element).</li> </ul>	Section 3.0
<ul style="list-style-type: none"> <li>▪ Possible amendment to the City’s Non-disposal Facility Element for the Material Recovery Facility.</li> </ul>	Section 3.0
<ul style="list-style-type: none"> <li>▪ Address Standard Urban Storm Water Mitigation Plan/ compliance with the City drainage master plan.</li> </ul>	Section 4.3 and Appendix D-1
<ul style="list-style-type: none"> <li>▪ Discuss traffic related impacts/evaluate County intersections with County methodology.</li> </ul>	Section 4.7 and Appendix G
<ul style="list-style-type: none"> <li>▪ Discuss watershed, impacts, and requirements.</li> </ul>	Section 4.3 and Appendix D-1
<ul style="list-style-type: none"> <li>▪ Assess water quality impacts and incorporate Best Management Practices (BMPs) and National Pollutant Discharge Elimination System (NPDES).</li> </ul>	Section 4.3 and Appendix D-1
<b><i>County of Los Angeles, Fire Department, April 29, 2004</i></b>	
<ul style="list-style-type: none"> <li>▪ Payment of Fire Facilities Impact Fees for proposed roofed structures.</li> </ul>	N/A – No roofed structures are proposed.
<ul style="list-style-type: none"> <li>▪ Address Forestry Division’s areas of responsibility, including 1) erosion control, watershed management, 2) rare and endangered species, vegetation, 3) fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, 4) archaeological and cultural resources, and the 5) County Oak Tree Ordinance.</li> </ul>	1) Section 4.3 and Appendix D-1, 2) Section 4.4 and Appendix E-1, 3) Project site is not within Fire Hazard Zone therefore fuel modification is not applicable 4) Section 8.1.1 and Appendix A-2, 5) No Oak Trees are within the project boundary therefore the County Oak Tree Ordinance is not applicable

Source: EDAW/AECOM

All of the comment letters received on the NOP are contained in **Appendix A-2** of this EIR. A written response was prepared to the Antelope Valley Archaeological Society’s comment letter and is included in **Appendix A-3** of this EIR. The written response refers to the findings and conclusions of the Archaeological Compliance Work for CUP No. 85512, in an Executive Summary dated April 20, 2003 prepared by Dr. Brian Dillon. The April 20, 2003 Executive Summary is also included in **Appendix A-1** of this EIR. The cultural resources issue is also discussed in Section 8.1.1 of this document.

The EIR addresses the following areas of potential environmental effect:

- Earth Resources – Section 4.1
- Air Quality – Section 4.2

- Hydrology and Water Quality – Section 4.3
- Biological Resources – Section 4.4
- Noise – Section 4.5
- Aesthetics/Light and Glare – Section 4.6
- Traffic and Circulation – Section 4.7
- Risk of Upset / Human Health – Section 4.8

**2.7 DOCUMENT ORGANIZATION**

The CEQA Guidelines provided that each EIR contain required descriptions and analyses. **Table 2-3** identifies the content required by CEQA and the corresponding sections in this EIR.

**TABLE 2-3  
REQUIRED EIR SECTIONS**

Required Description and Analysis	Section of EIR
1. Table of Contents or Index (Section 15122 of Guidelines)	Pages i to v
2. Summary (Section 15123 of Guidelines)	Section 1.0
3. Description of Project (Section 15124 of Guidelines)	Section 3.0
4. Description of Environmental Setting (Sections 15126, 15126.2, 15126.4, and 15130 of Guidelines) a. Significant Environmental Effects b. Effects which Cannot be Avoided c. Mitigation Measures d. Cumulative Impacts	Section 4.0
5. Alternative to the Proposed Action (Section 15126.6 of Guidelines)	Section 5.0
6. Significant Irreversible Environmental Changes (Section 15126 of Guidelines)	Section 6.0
7. Growth Inducing Impacts (Section 15126 of Guidelines)	Section 7.0
8. Effects Found Not To Be Significant (Section 15128)	Section 8.0
9. Organizations, Agencies, and Persons Consulted (Section 15129)	Section 9.0

*Source: EDAW/AECOM*

**2.7.1 TECHNICAL STUDIES**

The following updated technical studies were prepared for the project and have been incorporated into the EIR and this EIR Amendment:

- *Earth Resources and Earthquake Hazards, October 2005 - Golder Associates*
- *Air Quality Analysis, October 2005 – Giroux and Associates*
- *Combined Report of Hydrology and Hydraulics Design and Capital Flood Floodplain Analysis, October 2005 – Golder Associates*
- *Semi-Annual Groundwater Monitoring Report, Year 2004, July 2004 and Underground Storage Tank Investigation, February 2004 – SCS Engineers*
- *Supplemental Biological Assessment Survey Update, September 2005 – Frank Hovore and Associates*
- *Noise Impact Study, September 2005 – Giroux and Associates*
- *Traffic Impact Analysis, September 2005 – Kunzman Associates*
- *AB-32 Compliance Study, January 2010 – Giroux and Associates*
- *Evaluation of Sight Distances at Existing Access to Waste Management Site, March 2010 – JT Engineering*

These technical studies are included in the Appendices of this EIR, which are bound separately from this document.

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### 3.0 PROJECT DESCRIPTION

#### 3.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Antelope Valley Public Landfill (AVPL) is located in the northeastern portion of Los Angeles County, in the City of Palmdale, California. The project site is located directly west of the Antelope Valley Freeway (SR-14) and north of the Anaverde Creek, in an area known as the Anaverde Valley. The site lies at the existing terminus of City Ranch Road, west of Tierra Subida Avenue. The area has experienced substantial growth in recent years with the majority of this growth in the Cities of Palmdale and Lancaster (see **Figure 1-1**, Regional Location and **Figure 1-2**, Local Vicinity in Section 1.0). Land uses surrounding the landfill are discussed in Section 3.2.2.

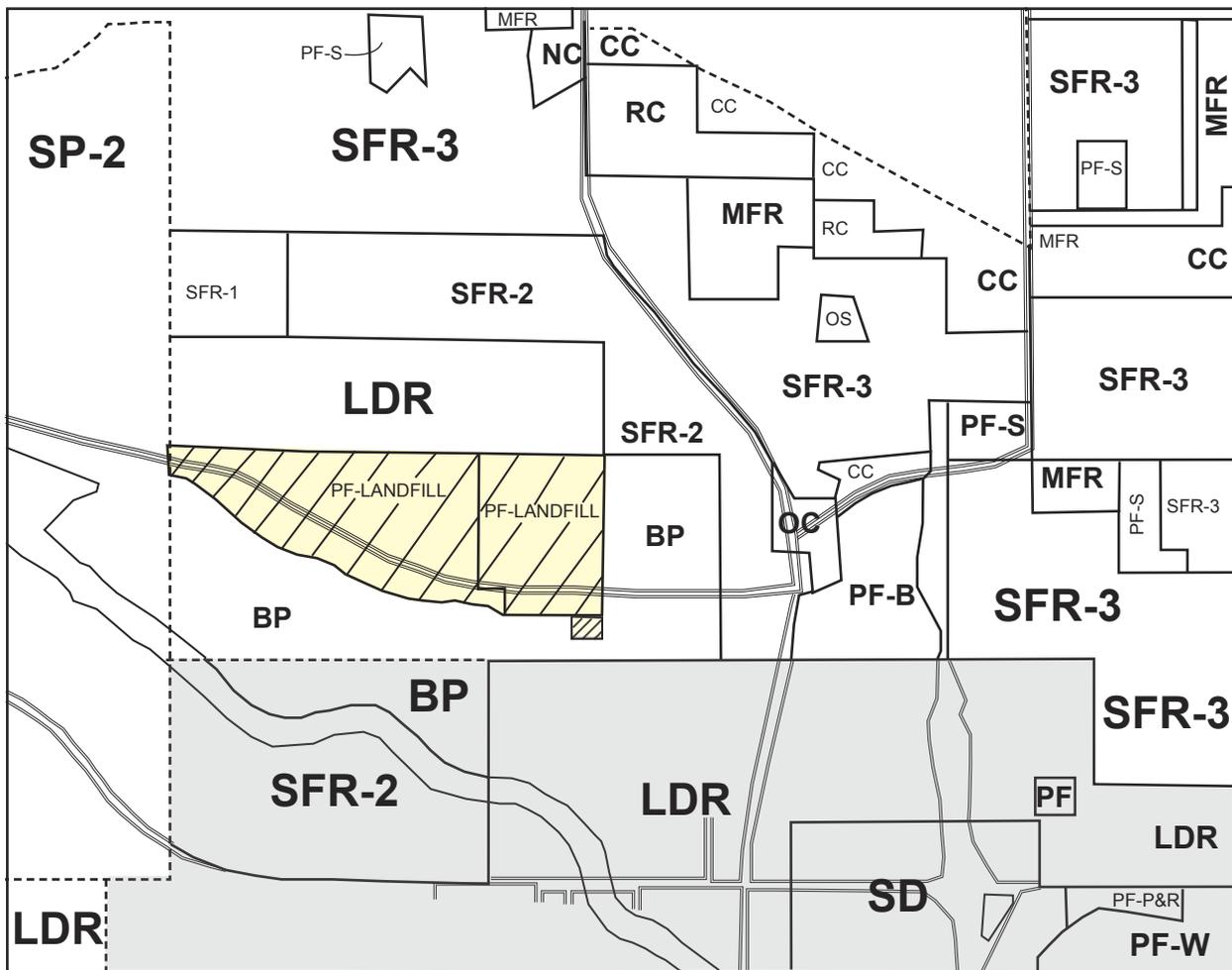
The AVPL currently consists of two fully permitted landfills, Landfill I (72 acres) and Landfill II (98 acres). Landfill I has served the Antelope Valley since the 1950s, and is comprised of refuse disposal and ancillary facility areas (i.e., offices, maintenance facilities, flare and liquid storage, and refuse hauling operations). The existing and proposed ancillary facilities are outlined in detail in Sections 3.2.1 and 3.4 of the EIR. Landfill II, which has a County approved Conditional Use Permit (CUP), was previously in the unincorporated portion of the County; however, it was annexed to the City of Palmdale as of November 21, 2003. Landfill II, though not yet constructed, is also comprised of refuse disposal area and ancillary facility (10 acres) areas. The total combined area for landfill operations (including Landfills I, II, and ancillary facilities) is 180 acres.

Generally there are various categories of landfills based on the specific type of solid waste accepted which are defined in the California Code of Regulations (CCR), Title 27. The existing facility is an active Class III (non-hazardous municipal solid waste) sanitary landfill. The landfill is the primary destination for disposal of virtually all solid waste generated in the City of Palmdale, as well as contributions from the City of Lancaster and the surrounding unincorporated area. Northeastern portions of the City of Santa Clarita also direct waste to the AVPL.

For a determination of environmental baseline, which provides the basis for the impact analysis, CEQA Guidelines Section 15125, as interpreted by case law (*Fairview Neighbors v. County of Ventura* (1999) 70 Cal.App.4<sup>th</sup> 238, 242-243), allows using the permitted conditions as environmental baseline for analyzing impacts in an EIR. However, existing operations can be utilized to prepare a “worst case” analysis. In the analysis of traffic impacts for the proposed project, this method of analysis was used to project a more conservative or “worst case” scenario.

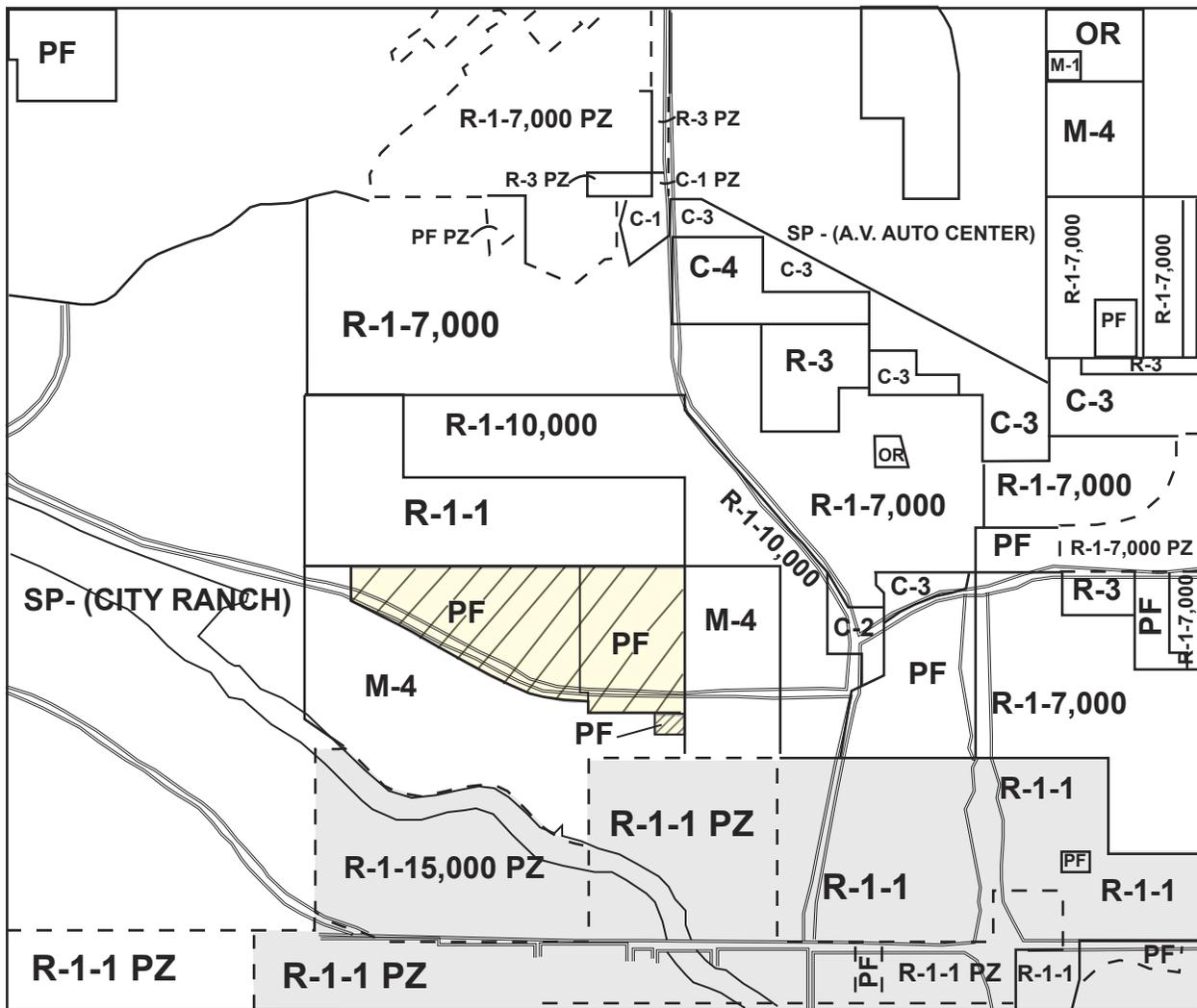
##### 3.1.1 GENERAL PLAN AND ZONING DESIGNATION

The City of Palmdale General Plan land use designation for the site is Public Facility Landfill (PF-Landfill) and existing Zoning designation is Public Facility (PF) (see **Figure 3-1**, Existing General Plan Land Use Designations and **Figure 3-2**, Existing Zoning Designations). The Figures also show the existing designations for the surrounding area. The proposed project does not require General Plan amendment or Zone change.



**LAND USE LEGEND**

- LDR Low Density Residential (1 du/ac)
- SFR-2 Single Family (0-3 du/ac)
- SFR-3 Single Family (3.1-6 du/ac)
- MFR Multi-Family
- NC Neighborhood Commercial
- CC Community Commercial
- RC Regional Commercial
- OC Office Commercial
- BP Business Park
- PF Public Facilities
- SP Specific Plan
- OS Open Space
-  Site Location
-  Downtown Revitalization Plan and Avenue S Corridor Area Plan



**LAND USE LEGEND**

- R-1 Single Family Residential
- R-3 Multiple Residential
- C-1 Light Commercial
- C-2 Office Commercial
- C-3 General Commercial
- C-4 Commercial Center
- M-1 Light Industrial
- M-4 Planned Industrial
- PF Public Facility
- PZ Pre Zoned
- OR Open Space and Recreation
- Site Location
- Downtown Revitalization Plan and Avenue S Corridor Area Plan

A General Plan Circulation Element amendment is currently being conducted by the City of Palmdale to modify their Circulation Element Map designation so that the future City Ranch Road alignment would not impact existing landfill ancillary facilities. The City initiated General Plan amendment seeks to realign the future City Ranch Road to the alignment of Avenue R-8. This Circulation Element General Plan Amendment (GPA) is not part of the currently proposed project and will not be analyzed in this EIR.

### 3.2 DESCRIPTION OF THE EXISTING LAND USES

#### 3.2.1 ON-SITE LAND USES

As stated above, the existing project site is comprised of Landfill I (eastern portion of site), Landfill II (western portion of site), and ancillary uses (southern portion of site). Landfill I is permitted under the existing Solid Waste Facilities Permits to accept 1,400 tons per day (tpd) of solid waste for disposal and Landfill II is permitted to accept 1,800 tpd of solid waste for disposal. Current disposal tonnage for Landfill I averages 1,125 tpd with a peak of 1,400 tpd. Waste materials that are recycled, used for alternate daily cover (ADC) or beneficial use are received, in addition to the solid waste. The total for all materials currently received at Landfill I averages 1,372 tpd and peaks at about 3,800 tpd.

Landfill I is the active disposal site as Landfill II has not been constructed. The portion of the property encompassing Landfill II was recently annexed into the City of Palmdale. The entire project site is now within the City of Palmdale's jurisdiction as of November 21, 2003. However, the Los Angeles County Department of Health Services, Solid Waste Management Division is designated by the state as the Local Enforcement Agency (LEA) for all landfills within the City of Palmdale jurisdiction.

Existing ancillary facilities/uses are located to the south of Landfill I and Landfill II. These ancillary facilities include offices and customer service building, diesel and Liquefied Natural Gas (LNG) fueling stations, desilting basin, maintenance and operations buildings, equipment storage, truck wash, landfill gas flare and liquid storage, scales and scale house, and customer, office/equipment, and customer and employee parking. Further to the south of these facilities and adjacent to the southern property boundary is the existing container and equipment storage (see **Figure 1-5**, Ancillary Facilities Layout Plan in Section 1.0). The ancillary facilities area also houses the Antelope Valley Environmental Collection Center; a City-initiated and approved Household Hazardous Waste (HHW) service center within the existing parking area.

A recycling facility was formerly located at the site (see **Figure 1-3**, County Approved Exhibit "A" in Section 1.0). This facility recycled residential source separated materials and commercial materials, such as cardboard, wood, and office paper.

Current recycling activities include greenwaste/wood and concrete/asphalt programs. Greenwaste is received from residential and commercial sources. Wood waste is accepted from commercial businesses and demolition projects. Approximately 3,500 and 8,500 tons of green/wood waste and concrete/asphalt waste are received annually. These materials are stored adjacent to the Landfill II location until a sufficient quantity exists for a third party contractor to process. Processed green and wood waste is shipped off-site for boiler fuel, energy conversion, composting, or field mulch. Material that remains on-site is used for soil amendment or erosion control. Concrete and asphalt is used for road base or other construction needs.

As stated above Landfill II has not yet been constructed for the receipt of refuse. It is currently being used for some recycled material storage as stated above. Additionally, Southern California Edison (SCE)

currently has 12,000 and 66,000 volt transmission lines mounted on light duty poles located in the expansion/reconfiguration area between Landfill I (existing) and Landfill II.

**3.2.2 SURROUNDING LAND USES**

The proposed project site is located directly west of the Antelope Valley Freeway (SR-14) in the City of Palmdale adjacent to City Ranch Road in an area known as the Anaverde Valley. The site lies at the existing terminus of City Ranch Road, west of Tierra Subida Avenue (**Figure 3-3**, Surrounding Land Uses). Section 3.5 Related Projects/Cumulative Impacts also includes a list of past, present, and foreseeable future projects that are located adjacent to the project site.

The site is bordered by vacant land/R-1 (Single Family Residential 1 acre minimum lot size)/LDR (Low-Density Residential) to the north. Approximately ½ of a mile to the north is an existing residential development at Avenue Q-8. To the east is vacant land/M-4 (Planned Industrial/BP (Business Park), and across Tierra Subida to the east is the Pelona Vista Sports Complex. Beyond Pelona Vista Sports Complex is SR-14 and a new school (Anaverde Learning Center) located at the northwest corner of Division Street and Rayburn Road. To the south is vacant land/M-4 (Planned Industrial/BP (Business Park), and Anaverde Creek runs along the southern and southwestern boundary of the site. Approximately, 2,000 feet to the south is the California Aqueduct. To the west, the site is bordered by BP (Business Park)/SP-2 (City Ranch Specific Plan).

The City Ranch residential development, located to the west and southwest of the landfill, is currently under construction. The western boundary of Landfill II is within 255 feet of the City Ranch property, and a portion of residential Planning Area 8 of the City Ranch project will be within 1,000 feet of the Landfill II boundary. Due to the close proximity to the landfill and potential impacts from incompatible land uses, the City Ranch Specific Plan EIR prepared for the City Ranch Specific Plan, incorporated herein by reference, contain several mitigation measures. These measures include establishing a 1,000-foot buffer between the western boundary of Landfill II and City Ranch residential development and recording a permanent easement which includes land within 1,000 feet of the northwest and southwest corners of Landfill II where construction of residences will be prohibited (see **Figure 3-3**, Surrounding Land Uses). Additionally, the measures provide a landscape buffer which will include mature vegetation along the common boundary line between the future City Ranch residential development (along the boundary of Planning Area 8) and the landfill. Lastly, in compliance with the California Department of Real Estate disclosure format and procedures, the developer is required to notify all potential buyers in City Ranch within 1,200 feet of the landfill boundary about the landfill and associated issues.

**Figure 3-3** shows additional residential uses in the vicinity of the landfill which include some housing to the south at R-8 located within the County and the Ana Verde area south of Avenue S. These uses currently view the existing landfill operations.

**3.3 LANDFILL LIFE EXPECTANCY**

**3.3.1 REMAINING REFUSE DISPOSAL CAPACITY OF THE AVPL**

Both Landfills I and II currently have maximum daily limits for disposal of refuse. The Solid Waste Facility Permit limits are 1,400 and 1,800 tpd for Landfills I and II, respectively. Green waste, concrete and asphalt that are recycled are not included in the daily limits. In addition, clean soil for daily cover and solid waste suitable for ADC or beneficial use are not included in the daily limit. The permitted truck



traffic volume for Landfill I is limited to 434 vehicles per day. The existing traffic volume as identified in the traffic study (see Appendix G) is 416 trucks and 210 cars per day.

The total for all materials, which includes recyclables, currently received at Landfill I averages 1,372 tpd and peaks at about 3,800 tpd.

As of November 2003, the existing Landfill I had an estimated remaining capacity of 1,525,000 tons based upon permitted final grades. Assuming the 1,400 tpd daily intake (which equates to 500,000 tons per year); the existing landfill currently has a remaining capacity to mid-2007 or late 2007. The approved County CUP for Landfill II provides 12.5 years of capacity assuming 1,800 tpd of landfilled materials. Additionally, **Appendix A-5** contains a discussion of the “Remaining Refuse Disposal Capacity of Active in-County Landfills” as well as a discussion on how the AVPL meets the County Wide siting element.

### 3.3.2 FUTURE DEMAND/PROJECT NEED

Refuse is currently delivered to the landfill by Waste Management, Inc. (WMI), other permitted hauling companies, and the public. A pattern of steady growth in the cities of Palmdale, Lancaster and Santa Clarita and the unincorporated areas of Antelope Valley (North Los Angeles County Subregion) is expected to continue according to the Southern California Association of Governments’ (SCAG) 2004 Regional Transportation Plan (RTP) horizon year of 2030. The high desert climate coupled with the growth of the industrial areas and the future Palmdale International Airport have caused the cities of Palmdale, Lancaster and Santa Clarita to rank as one of the fastest growing areas of Los Angeles County. Based upon population projections of the SCAG, the cities of Palmdale, Lancaster and Santa Clarita are expected to grow in population by as much as 371,025 people from 2005 to 2030. **Table 3-1** lists the expected population growth by five-year increments.

Population projections represent a key planning factor because the landfill must provide sufficient capacity to accommodate the expected growth, including a reasonable excess over the population estimate. Growth of communities is based upon a complex intertwining of local, national, and international economic and social factors.

These factors may accelerate the rate of growth for short periods without basically altering the horizon year forecast. In the same way growth rates can periodically decelerate for short periods but with the same eventual outcome. Based on **Table 3-1** below, the average population growth will be approximately 3% per year for the incorporated cities. The SCAG RTP growth forecasts for unincorporated areas of Antelope Valley (north Los Angeles County subregion) shows an increase of 5% per year.

Population growth in the Antelope Valley stimulates increases in construction activity associated not only with residential projects but also various business developments to support growth. While there is no direct mathematical relationship between population growth and waste loading increases, waste generation derived from growth in a community will many times yield higher percentage year to year increases than population increases alone. This is likely due to the combined effect of residential and support businesses construction activities as well as municipal infrastructure improvements. Historically, waste disposal at the Antelope Valley Public Landfill (AVPL) between 2001 and 2005, for the cities and unincorporated areas of the Antelope Valley only between 2001 and 2005 yield a range between 8.2 percent to 9.4 percent year over year increases, with an average annual waste growth of 8.7 percent per year. Assuming a conservative waste growth factor for the Antelope Valley cities and county areas of 8 percent through 2009, and growth decreasing to 3 percent by 2017, it results in a daily maximum local

waste disposal need in excess of 2,200 tons per day. If the Antelope Valley waste growth averages only 6.5 percent per year, local waste disposal needs tributary to the AVPL would exceed the proposed project daily maximum disposal limit of 3,600 tons per day by the year 2023. As the community continues to experience explosive growth, Antelope Valley waste disposal needs will also grow to levels significantly beyond the ability of the AVPL to accommodate under its current permit limits and will likely challenge even the proposed project daily limits in the foreseeable future.

**TABLE 3-1  
FUTURE GROWTH/DEMAND**

Year	Population			
	City of Palmdale	City of Lancaster	City of Santa Clarita	Antelope Valley Unincorporated Areas*
2005	145,995	142,043	169,793	156,671
2010	176,506	168,032	187,795	202,929
2015	218,387	191,912	200,104	242,561
2020	259,712	215,468	211,367	280,840
2025	299,324	238,048	221,915	316,726
2030	337,314	259,696	231,846	350,372

Year	Net Gain			
	City of Palmdale	City of Lancaster	City of Santa Clarita	Antelope Valley Unincorporated Areas*
2005				
2010	30,511	25,989	18,002	46,258
2015	41,881	23,880	12,309	39,632
2020	41,325	23,556	11,263	38,279
2025	39,612	22,580	10,548	35,886
2030	37,990	21,648	9,931	33,646

*Source: Southern California Association of Governments (SCAG), 2004 Regional Transportation Plan (RTP) Growth Forecast, City Projections (July 2004)*

\* North Los Angeles County Subregion

The proposed expansion/reconfiguration would provide an additional 12,800,000 cy of capacity beyond existing permit levels. Based upon a disposal tonnage of 3,600 tpd, the combined landfills site life would total 16 to 17 years.

**3.4 DESCRIPTION OF THE PROPOSED EXPANSION**

**3.4.1 PROJECT OBJECTIVES**

The objectives of the project include:

1. Expansion of the landfill to increase its capacity and life to the maximum extent practical by combining Landfills I and II.

2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.
3. Reconfigure two existing landfills by adding area to connect the landfills and maximize its capacity at this location through efficient use of land space and natural topography.
4. Continue to support the implementation of residential and commercial recycling programs and a household hazardous waste program for the Antelope Valley.
5. Ensure that landfill access does not occur through existing residential communities.
6. Increase the daily refuse handling capacity to handle anticipated refuse generation rates inclusive of projected population growth in the Antelope Valley without conflicting with adjacent incompatible land uses.
7. Provide additional needed landfill capacity for growth which is consistent with the City's goals and policies of the General Plan and other relevant documents.
8. Minimize the negative impacts of increased solid waste disposal at the existing landfill through an environmentally sound operation that incorporates current engineering and design techniques.
9. Upgrade existing landfill access to improve entry from local roadways.

**3.4.2 PROJECT CHARACTERISTICS/COMPONENTS**

**BACKGROUND**

The currently permitted design of the eastern most refuse limit of Landfill II and the western most refuse limit of the existing Landfill I are approximately 400 feet apart. As currently permitted, a valley would exist between the two landfills (see **Figure 1-4**, Site Plan in Section 1.0). Based on the long-term disposal needs of Antelope Valley and City of Palmdale, the best use of this area between the two landfills is additional landfill capacity. The currently permitted Landfill I and Landfill II have a maximum height of EL3205 and EL3140, respectively.

The primary purpose of the project is to connect the two landfills by including the eleven acres that currently separate the landfills and add approximately five acres to the overall facility for ancillary facilities. The proposed project will create a landfill with a maximum elevation of 3,200 feet above mean sea level (msl).

As part of the proposal, a new Conditional Use Permit is requested that would be issued by the City of Palmdale. The existing County CUP would be replaced by the City of Palmdale CUP as the City of Palmdale is now the lead agency. The proposed CUP includes enlarging the landfill refuse foot print to 125 acres by reconfiguring the two approved landfills into one contiguous disposal area, updating the legal boundary of the entire facility to 185 acres to reflect the current property boundary subsequent to a lot line adjustment approved in 1999, and a proposed increase to the net permitted daily limit to 3,600 tpd of solid waste for disposal in the landfill. The 3,600 tpd excludes recyclables and materials used for ADC and beneficial use. The project would also combine the two existing Solid Waste Facility Permits

(SWFP's) into one permit issued by the LEA, and concurred by the CIWMB. The two existing Waste Discharge Requirements (WDR's) will also be combined into one permit issued by the Lahontan Regional Water Quality Control Board (RWQCB). **Table 3-2** provides a summary comparison of the "existing/permited" landfill components to the "proposed" City CUP project components. The table is not inclusive of all proposed CUP project components (i.e., ancillary facilities, new access route, power pole relocation, and erosion control). The proposed project will consist of the following components:

- Reconfigure the two landfills into one contiguous disposal area of 125 acres, updating the legal boundary to reflect the current property boundary of 185 acres and obtaining one Solid Waste Facility (SWF) permit for the entire area.
- Enlarge the aggregate 114-acre refuse footprint by 11 acres to 125 acres total by incorporating the gap between Landfill I and Landfill II.
- A proposed increase in the permitted daily intake of solid waste (i.e., refuse to be disposed of in the landfill) from 1,800 tons per day (tpd) to 3,600 tpd. These tonnage figures exclude recyclables and materials used for Alternative Daily Cover (ADC) and beneficial use.

Limit the daily intake of TPH regulated soils to a maximum of 15% of the permitted daily intake for solid waste.

- Increase the "total" daily intake of refuse and recyclables (including ADC) from a currently permitted 3,564 tpd (assumed "total" intake in 1993 Mitigated Negative Declaration) to a peak of 5,548 tpd (assumed "total" intake for the analysis included in this EIR).
- A proposed modification to the height of the combined landfills to EL 3,200. (See **Table 3-2**, for a comparison of height for Landfill I, Landfill II, proposed expansion, and proposed change).
- Proposed construction of ancillary facilities, including: two desilting basins; erosion protection along the north bank of Anaverde Creek acceptable to the City Engineer; a revised site entrance which includes construction of a frontage road to connect with City Ranch Road and intersect Tierra Subida at Rayburn Road and create a 4-way signalized intersection and construct the remaining access road along the R-5 dedicated right-of-way; an additional truck scale; a recycling drop-off/transfer center; and the relocation of the existing Southern California Edison's electric transmission lines and light duty poles to south side of property either "on-site" or "off-site."
- Revise hours of operation for waste acceptance to 6:00 a.m. to 8:00 p.m. for all users. The present permitted operating hours for receipt of refuse are between 6:00 a.m. and 5:00 p.m. for waste haulers and transfer trucks and 8:00 a.m. and 4:45 p.m. for the public.
- Installation of a liner, leachate collection and removal system (LCRS), drainage control and surface water management system, groundwater monitoring system, and horizontal gas collectors in the expansion area and remaining combined landfill footprint area. The proposed liner system will be overlapped (per requirements of RWQCB) with existing liners to provide a continuation of environmental controls.

**TABLE 3-2  
EXISTING/PERMITTED AND PROPOSED PROJECT COMPONENTS\***

Landfill Characteristic	LF I Existing/ Permitted	LF II Existing/ Permitted	Total Existing/ Permitted	Total Proposed	Proposed Change
Facility Acreage	72 <sup>1</sup>	108 <sup>2</sup>	180	185 <sup>3</sup>	+5
Footprint Acreage	57	57 <sup>4</sup>	114	125	+11
Daily Max. Landfilled Tonnage	1,400	1,800	1800	3,600	+1800
Permitted Daily Max. Trucks	per the SWFP434 <sup>5</sup>	550per County CUP #93041 <sup>6</sup>	434 (LF I) 550 (LF II)	567 <sup>7</sup>	+133 (LFI) +17 (LFII)
Total Permitted Airspace (excluding Final Cover)	7.4 million cubic yard (remaining: 2.0 mill cy)	9.2 million cubic yard <sup>8</sup>	16.6 million cubic yard (remaining: 11.2 mill cy)	29.4 million cubic yard (remaining: 24 mill cy)	+12.8 million cubic yard
Site Life (remaining assuming maximum TPD)	(2.1 yrs)	12.5 yrs	14.6 yrs	16.1 yrs <sup>9</sup>	+1.5 yrs
Maximum Height	3,205	3,140	3,205 (LFI) 3,140 (LFII)	3,200	-5 (LF I) +60 (LF II)
Landfill and Ancillary Operations	5:00 am to 10:00 pm	5:00 am to 10:00 pm	5:00 am to 10:00 pm	5:00 am to 10:00 pm	No Changes
Receipt of Waste	6:00 am to 5:00 pm	6:00 am to 5:00 pm	6:00 am to 5:00 pm	6:00 am to 8:00 pm	+3 hours
Open to Public	8:00 am to 4:45 pm	8:00 am to 4:45 pm	8:00 am to 4:45 pm	6:00 am to 8:00 pm <sup>10</sup>	+4.45 hours

\*This table is not inclusive of all proposed CUP project components (i.e., ancillary facilities, new access route, power pole relocation, and erosion control)

1 – The 1995 SWFP says 65 acres. The County approved Exhibit “A” (Figure 1-3) for the 1992 CUP for LF II added approximately 7 acres of unincorporated county area to the south of LF I for ancillary uses (See Figure 1-6, Project Boundaries).

2 – The 1997 SWFP says 75 acres. The County approved Exhibit “A” (Figure 1-3) for the 1992 CUP for LF II actually encompassed 108 acres, consisting of 98 acres plus 10 acres for ancillary facilities (See Figure 1-5 Ancillary Facilities Layout Plan).

3 – The total proposed area is reconfigured and enlarged by 5 acres overall to encompass the total area owned by the applicant and takes into account the 1999 lot line adjustment as well as the CUP permitted areas described above (See Figure 1-6, Project Boundaries, for comparison of existing vs. proposed; note area deleted from western tip and area added to south/southwest).

4 – The SWFP include 54 acres. The County approved Exhibit “A” (Figure 1-3) for the 1992 CUP for LF II actually encompassed 57 acres.

5 - The existing SWFP allows for a maximum of 434 trucks, or a total of 868 truck trips.

6– The total existing/permitted trucks are based upon the “peak maximum” intake of 3,564 tpd which includes landfilled refuse and recyclables. (Refer to 9/7/93 correspondence regarding supplemental traffic analysis within County CUP #93041).

7 – The total proposed trucks are based upon the “peak maximum” intake of 5,548 tpd which includes landfilled refuse and recyclables. (Refer to Section 4.7 of this EIR).

8 - The SWFP says 8.2 mcy; however, in actuality, it is 9.2 mcy which is within the 11 mcy studied for in the 1991 EIR.

9 – The total proposed site life incorporates the remaining capacity at Landfill I.

10 – Although the landfill is proposed to be open to the public until 7:30 pm, the traffic analysis assumes the scenario that it could be open until 8:00 pm.

A detailed description of the project components is included in the following discussion:

### **PROPOSED DAILY TONNAGE INTAKE MODIFICATIONS**

Both Landfills I and II currently have maximum daily limits for disposal of refuse. The limits are 1,400 and 1,800 tpd for Landfills I and II, respectively. Green waste, concrete and asphalt that are recycled are not included in the daily limit. In addition, clean soil for daily cover and solid waste suitable for ADC or beneficial use are not included in the daily limit. The total quantity of material accepted for Landfill I is currently limited to 434 waste haul trucks per day by the existing Solid Waste Facility Permit. Although there is no daily vehicle limit listed in the Solid Waste Facility Permit for Landfill II, 550 trucks per day were analyzed and approved as part of the County CUP 93-041.

The proposed project includes an increase in the net permitted daily tonnage to 3,600 tpd of solid waste for disposal in the landfill. In addition, materials for ADC and beneficial use, recyclable green/wood waste, recyclable concrete and asphalt, and other recyclables will be accepted at the landfill. For environmental analysis purpose, the average daily “total” volume accepted (i.e., waste for disposal and recyclables) is projected to be 3,613 tpd; however, this volume may peak to 5,548 tpd. Consistent with CEQA requirements, the peak tonnage volume of 5,548 is utilized to provide an assessment of “worst case” traffic mobile source air quality and noise impacts within Section 4.0 of this EIR.

### **REFUSE FOOTPRINT MODIFICATIONS/MAXIMUM HEIGHT**

The applicant proposes to enlarge the aggregate 114-acre refuse footprint by approximately 11 acres in order to reconfigure the two landfills into one contiguous disposal area. This reconfiguration will provide an additional 12.8 million cubic yards of capacity and a total landfill capacity of 29.4 million-cubic yards. In doing so, the proposed landfill footprint will remain within the currently approved CUP boundaries while maintaining a minimum 100-foot setback from adjacent property. This modification would include the relocation of existing Southern California Edison’s electric transmission lines and light duty poles to either an “on-site” or “off-site” location. The transmission lines and poles are proposed to be relocated to an “off-site” 200’ easement south of the Landfill II landfill property boundary (see **Figure 1-4**, Site Plan in Section 1.0). The final pole relocation alignment has not yet been determined; however, the alignment will be sited in an area that would have the least amount of impact on the existing habitat and other resources established by the project biologist (refer to Section 4.4). The “on-site” power pole easement/relocation area (see **Figure 3-11**, Fill Plan C) would follow the future berm access road south of the Landfill II refuse footprint to the west property line where it would extend north inside the Landfill II property boundary to meet the existing poles at the northwest corner of the Landfill II property.

The currently permitted Landfill I and Landfill II have a maximum height of EL3205 and EL3140, respectively. The project proposes to increase the permitted height of Landfill II from EL3140 to EL3200 and decrease the maximum height of Landfill I from EL3,205 to EL3,200.

### **PROPOSED ANCILLARY FACILITIES**

The project also proposes adding approximately five (5) acres of ancillary facilities and other landfill property to the existing 180-acres to capture the new property configuration resulting from the 1999 lot line adjustment, as was shown in Section 1.0, on **Figure 1-6**, Project Boundaries.

Exhibit “A” (see **Figure 1-3**, County Approved Exhibit “A” in Section 1.0) shows existing and proposed ancillary facilities as they were envisioned in 1991, and Section 1.0, **Figures 1-4**, Site Plan and **1-5**, Ancillary Facilities Layout Plan depict the existing and proposed ancillary facilities as currently planned. Impacts of the “proposed” ancillary facilities that were not covered by the County Exhibit “A” and subsequent City approvals are analyzed in this EIR document for the new CUP. These proposed facilities include the following:

- Two desilting/stormwater control basins
- Erosion protection along the north bank of Anaverde Creek acceptable to the City Engineer
- Revised site entrance (Construction of a frontage road that will connect with City Ranch Road and intersect Tierra Subida at Rayburn Road and create a 4-way signalized intersection, and construct the remaining access road along the R-5 dedicated right-of-way)
- Additional truck scale (located north of existing scale)
- Recycling drop-off/transfer center
- Power pole relocation to south side of property either “on-site” or “off-site”

It should be noted that four of the ancillary facilities (see first 3 bullets) are actually recommended mitigation measures from the project engineering studies and these measures have been incorporated as proposed project components. Because there are multiple alternatives for the proposed erosion protection along the north bank of Anaverde Creek, these improvements have not been shown on **Figure 1-5**, Ancillary Facilities Layout Plan. Please refer to Section 4.3 for text and graphic details of the Creek Erosion Protection Plan(s).

### **OPERATIONAL CHARACTERISTICS/COMPONENTS WHICH INCLUDE PROPOSED MODIFICATIONS AS PART OF THE CITY CUP**

The following section identifies which operational characteristics associated with the landfill would be modified under the proposed CUP. The operational characteristics that would not be modified as part of the proposed CUP are discussed in a subsequent section.

#### **Hours of Operation**

The site is currently permitted to be open to the public seven days per week, 365 days per year. Landfill and ancillary activities are permitted between 5:00 a.m. and 10:00 p.m., including site preparation and maintenance, the application of cover, and the processing of refuse. Present permitted operating hours for receipt of refuse are between 6:00 a.m. and 5:00 p.m. However, the currently permitted hours of operation for Landfill II to accept waste from the public are between 8:00 a.m. and 4:45 p.m. The proposed hours of operation for waste acceptance will be 6:00 a.m. to 8:00 p.m. for all landfill users.

#### **Equipment and Personnel**

The existing and future landfill personnel and equipment is summarized below in **Table 3-3**. It is important to note that the existing landfill operating equipment is currently not operating at a full capacity/power level. Increased disposal rates will thus be accommodated by an increased percentage of equipment utilization, but not with any substantial increase in the numbers of equipment sources.

**TABLE 3-3  
EXISTING/FUTURE LANDFILL EQUIPMENT AND PERSONNEL**

Equipment		Personnel	
Existing/Permitted (1,800 tons/day)*	Future (3,600 tons/day)*	Existing/Permitted (1,800 tons/day)	Future (3,600 tons/day)
2 Dozers + spare	2 Dozers + spare	3 Operators	5 Operators
1 Compactor + spare	2 Compactors + spare	1 Mechanic	1 Mechanic
2 Scrapers	2 Scrapers	4 Laborers	5 Laborers
2 Loaders	2 Loaders	2 Scale House	3 Scale House
1 Grader	1 Grader	1 Site Manager	1 Site Manager
2 Water Trucks	2 Water Trucks		1 Mechanic/Fueler
		2 administrative	2 administrative

*Source: Waste Management of California, Inc., 2004*

\*Total net tonnage to be disposed of in landfill excluding recyclables.

**Site Access**

The types of vehicles that enter the site include employee vehicles, pick-up trucks, cars with trailers, box vans, dump trucks, residential and commercial collection trucks and commercial transfer trailers.

Traffic control at the landfill site consists of a series of well marked, controlled access points. Access roads and control points on-site are all designed to provide orderly direction and control of traffic on- and off-site (see **Figure 1-5**, Ancillary Facilities Layout Plan, in Section 1.0 which shows on-site circulation). Trucks are immediately received on-site upon arrival, at which time trucks are weighed and waste manifest forms are checked. After leaving the scales, all trucks are staged on-site, prior to unloading. Loads are checked and the trucks are directed to the disposal facility from the staging area. Staging of trucks helps to level off peak receipts, prevents backup of trucks at the main gate and along the entrance road, and provides for smoother, safer flow of vehicles on- and off-site.

Trucks currently enter the site directly off City Ranch Road. A speed limit of 25 mph is maintained on the first segment of City Ranch Road. Incoming traffic has the right-of-way over the next one-mile segment of the road. Future improvement of Avenue R-5 will provide a wider access road and additional capacity for handling refuse vehicles. Please refer to Section 4.7 for a more detailed description of the proposed circulation improvements.

**Disposal Operations**

After the trucks are released from the staging area, they proceed directly to the disposal area as directed by the scale operator. All internal roadways will be posted with a speed limit of 15 mph. All roadways will be adequately marked to direct drivers to disposal areas. All roadways will be either, paved or graded, stabilized, and maintained so as to provide for a smooth, dust and mud free, stable road-base. This will ensure a safe flow of traffic to each disposal area.

As vehicles approach the landfill disposal area, they are directed by a traffic spotter. The traffic spotter backs vehicles up to the working face of the landfill for unloading. The working face is that part of the landfill where refuse is deposited each day prior to being moved into a cell. As the waste is deposited

along a working face, a landfill crawler dozer pushes the waste to the current daily operation area known as a cell. As the cell is being constructed the dozer and compactor spread the refuse and compact the material by making two to five passes over the working face. The site users unload their vehicles along the working face and then exit the site from the site access road and entrance gate. **Figure 3-4**, Method of Spreading and Compaction illustrates this process.

The size of the typical daily waste cell varies depending on the area being filled. **Figure 3-5**, Typical Landfill Construction illustrates a typical cell section of the landfill as presented by the LACSD. This exhibit is not to scale. The waste cell is covered daily and compacted with a minimum of 6 inches of clean soil or with approved ADC material. Currently, tarps are approved for ADC use. The soil is excavated onsite by the landfill's earth-moving scrapers or imported from off-site. This cover operation is performed by a dozer pushing dirt over the deposited waste. The cell height varies from around 18 to 20 feet and the width is typically limited to the daily cell boundary which may be from 50 to 150 feet.

**Figure 3-5**, Typical Landfill Construction illustrates a conceptual 10-20 feet mitigation berm which is typical of Los Angeles County landfills. Creation of such a berm may be used, as necessary, to help mitigate potential noise, litter and visual impacts associated with a landfill. This berm will vary in height (10-20 feet) from one landfill to another and is not necessarily representative of the proposed project.

The landfill expansion/reconfiguration area will be equipped with access ramps into the landfill for ingress and egress and trucks will be directed by the traffic spotter at the landfill. This will minimize the time spent unloading and ensures the safety of both the driver and other employees and equipment at the facility. Prior to leaving the facility, the driver will stop at the scale house to complete the manifests and to prepare his vehicle for driving off-site, if required.

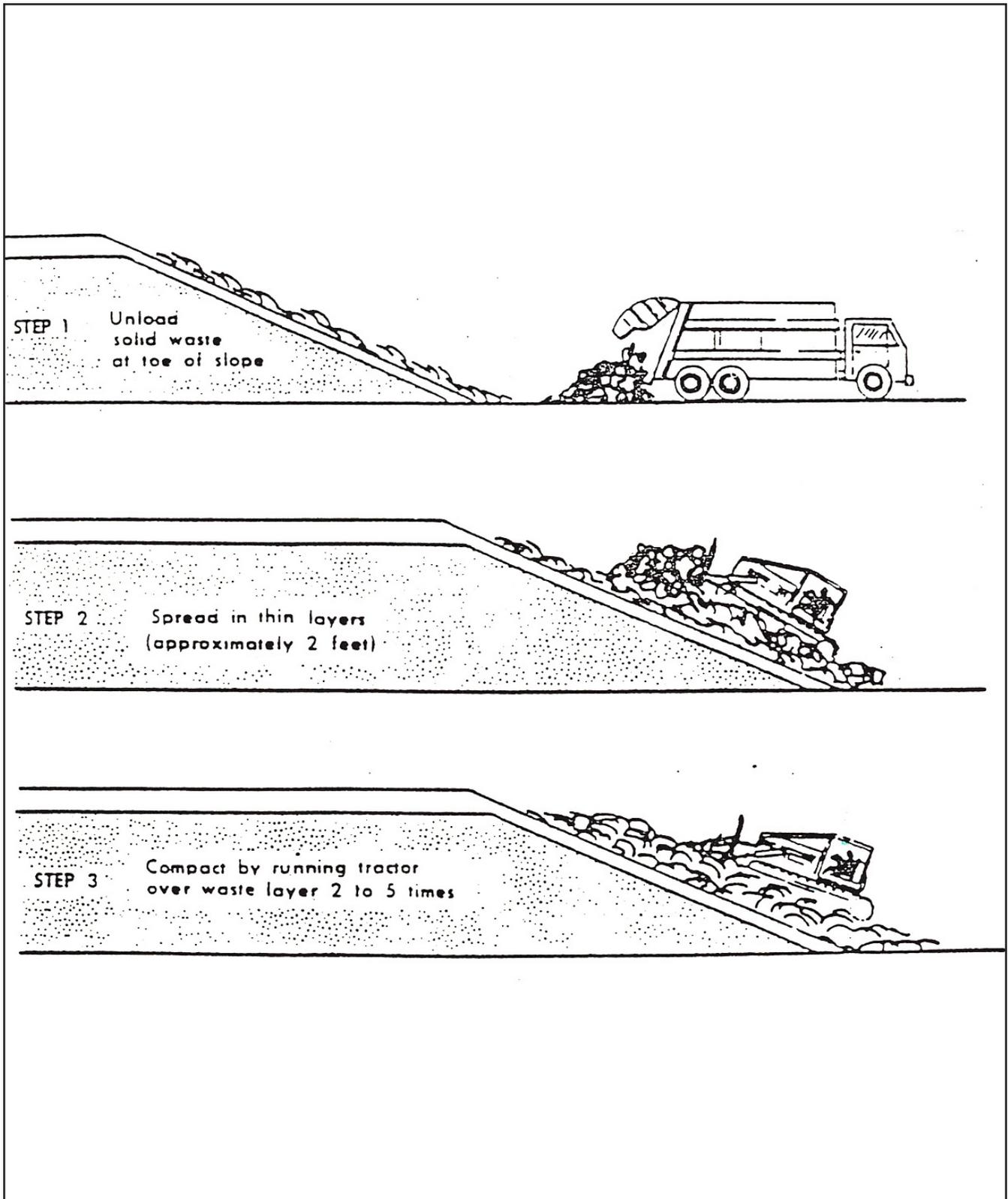
All aspects of the layout of the facility are intended to ease flow of traffic into and around the site and to prevent accidents, spillage of waste, and to protect the health and safety of workers on the site. No vehicles will be allowed to park or stage on the surrounding local highways. Sufficient space is provided on-site for staging all anticipated vehicles.

### **Drainage Control and Surface Water Management System**

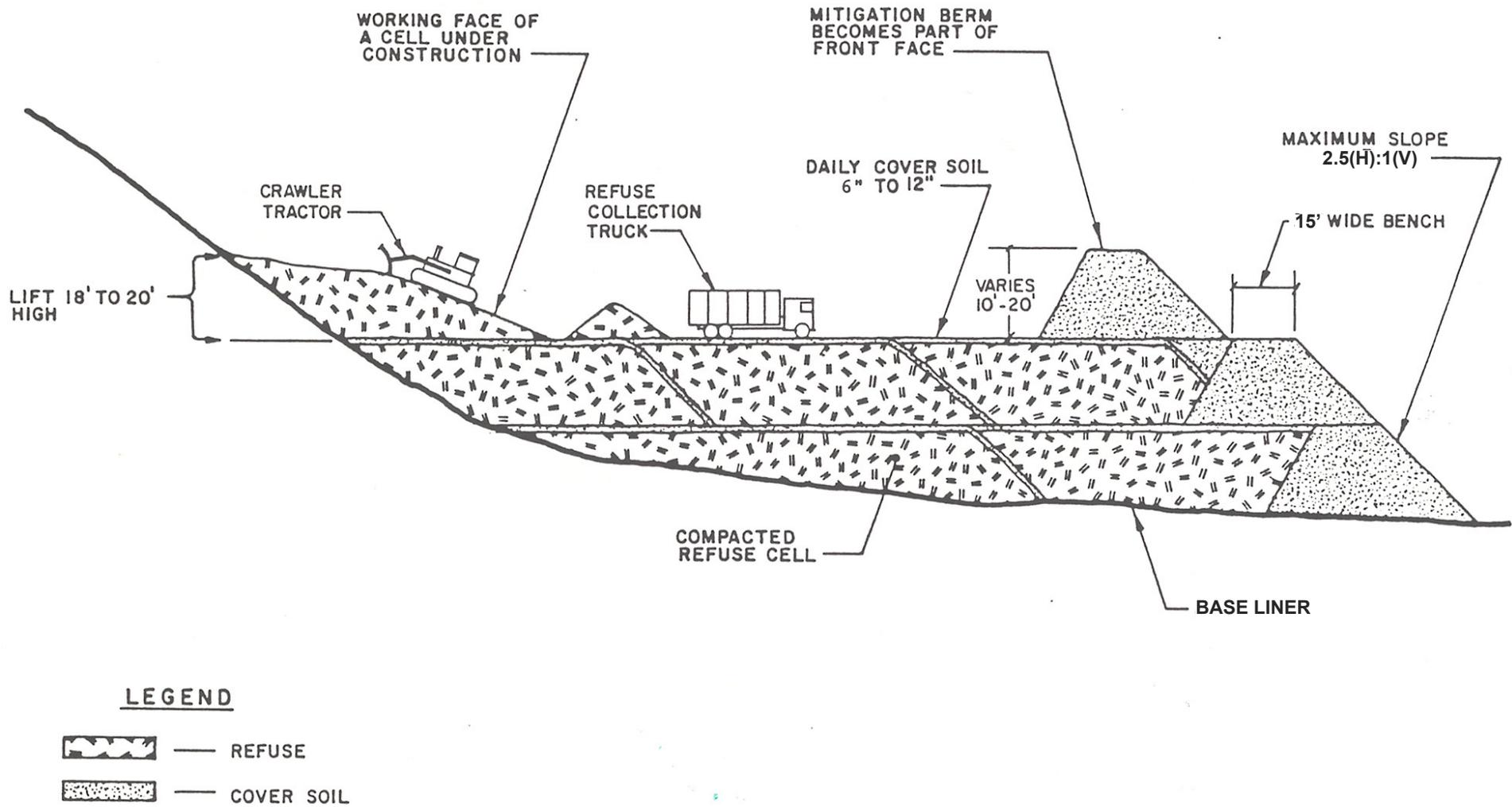
Perimeter drainage channels will be installed for the landfill expansion/reconfiguration area to collect surface water from the adjacent off-site watershed and landfill fill slopes. Off-site surface water run-off that goes onto the site will be managed through the construction of a perimeter run-on diversion channel between the landfill and neighboring, upslope property to the north. The channel will have a trapezoidal cross section and will have a concrete or rip-rap lining.

Perimeter run-off channels will be constructed to manage the surface water run-off from the landfill. As site development proceeds, on-site run-off will be controlled with a network of benches and let down-chutes that direct the surface water to the perimeter run-off channels (see **Figure 3-6**, Stormwater Management Plan).

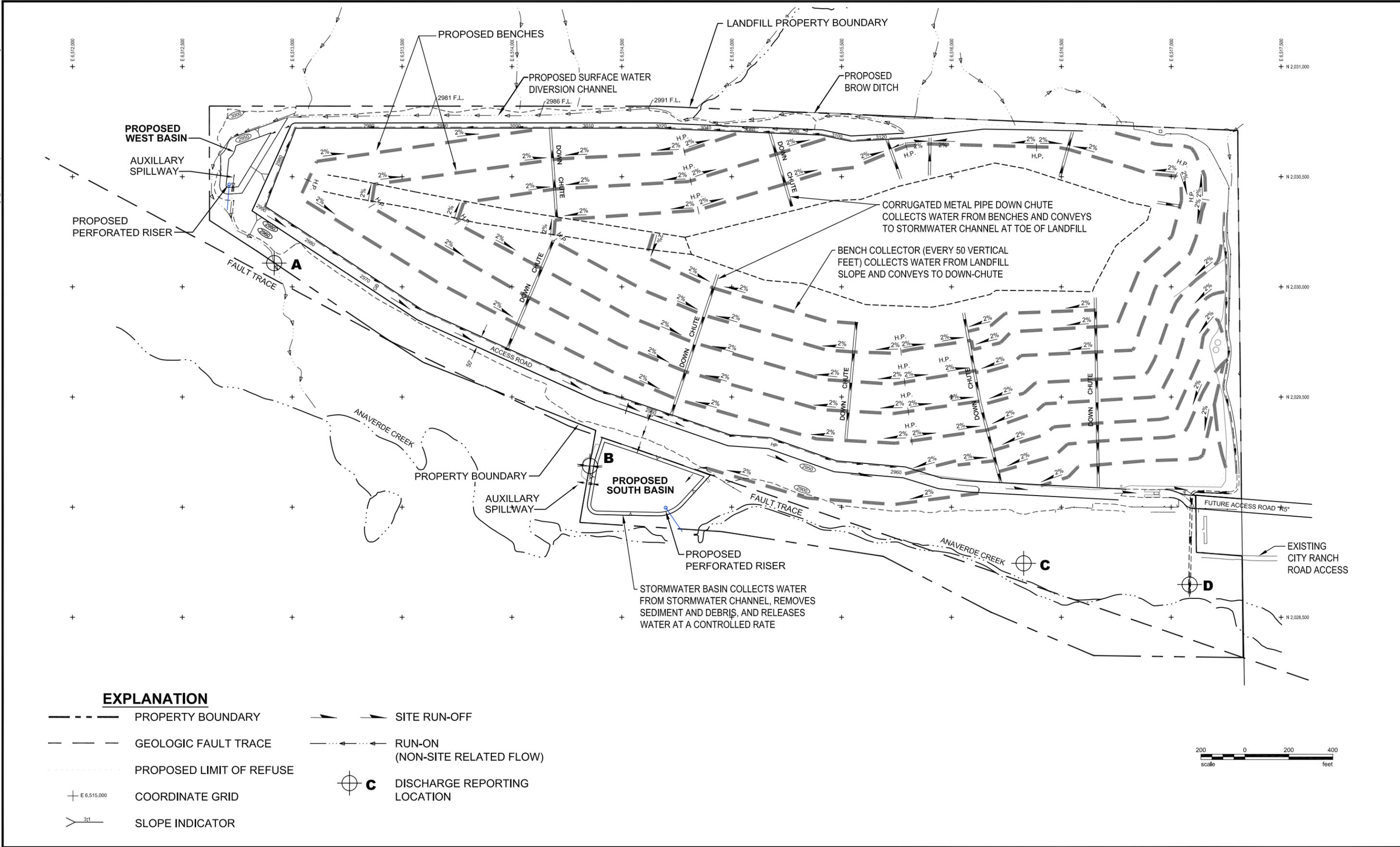
The perimeter run-off channels direct the majority of the surface water that has not contacted waste to two proposed sedimentation/retention basins, the West and South Basins. The basin outflow structures direct surface water to Anaverde Creek or its tributaries. The run-off system is designed to limit peak discharge to less than 85% of pre-development flows and maintain the drainage velocities below typical erosive velocities and hence control erosion (see **Figure 3-6**, Stormwater Management Plan).



Source: County Sanitation Districts of Los Angeles County



Source: County Sanitation Districts of Los Angeles County



**EXPLANATION**

- |               |                          |   |                                |
|---------------|--------------------------|---|--------------------------------|
| ---           | PROPERTY BOUNDARY        | → | SITE RUN-OFF                   |
| - - -         | GEOLOGIC FAULT TRACE     | ← | RUN-ON (NON-SITE RELATED FLOW) |
| .....         | PROPOSED LIMIT OF REFUSE | ⊕ | DISCHARGE REPORTING LOCATION   |
| + E 6,515,000 | COORDINATE GRID          |   |                                |
| 3:1           | SLOPE INDICATOR          |   |                                |

Surface water that comes in contact with waste will be collected in the LCRS system or collected in a similar manner. This surface water will be tested and treated in accordance with the leachate management plan. First flush water from paved areas or areas of potential oil/fuel contamination will be collected and treated using an oil-water separator or filtration system to remove hydrocarbons (i.e., Best Management Practices as required by NPDES permits). Treated water will be discharged to Anaverde Creek.

The surface water hydrology analysis for the final development of the site was performed in accordance with state and local requirements. The hydrology analysis was based on LACDPW 50-year Capital Flood and 100-year, 24-hour storm events and follow methodologies contained in the Los Angeles County Hydrology Manual. Preliminary drainage channel and basin sizes were developed to accommodate the peak flows.

In addition to the surface water hydrology analysis, flood conditions in Anaverde Creek were evaluated. The evaluation concludes that erosive velocities could potentially erode the creek banks. The project site run-off has no impact on potential flood damage in Anaverde Creek. In an effort to protect the site and its ancillary facilities from potential Anaverde Creek flood impact, the project proposes to construct armoring between Anaverde Creek and the ancillary facilities. Please refer to Section 4.3 and **Figure 4.3-5, Typical Riprap-Lined Auxiliary Spillway** within that section for a more detailed discussion of this proposed improvement.

#### **Leachate Collection and Removal System**

Leachate is defined as any liquid formed by the drainage of liquids from waste, or by the percolation or flow of liquid through waste (27 CCR § 20164). Generally, the leachate generation rate at a landfill is highest early in the operating life of the facility, approaches steady-state condition during the latter stages of landfill operations, and decreases to de minimus amounts after placement of the final cover system.

The proposed expansion/reconfiguration area will contain a blanket type (covers the entire bottom of the landfill) leachate collection and removal system (LCRS) constructed directly on top of the liner system. The LCRS will be installed in accordance with Title 27 CCR Section 20340. This article states that LCRS's are required for Class III landfills which have a liner or accept sewage or water treatment sludge. Sludges are not currently permitted to be disposed in LF I or LF II and no change is proposed as part of the project. The initial phase of the system will be sized and laid out in a manner that will facilitate its extension as the landfill develops.

The LCRS system on the base of the landfill will consist of a geocomposite drainage net or clean fine gravel designed such that the leachate will not exceed one foot of head on the composite liner. The LCRS system on the slopes will consist of non-woven cushion geotextile and two-foot thick combined LCRS (or equivalent) and protective soil cover. The LCRS blanket drain will connect to a main header line that will transport the leachate to at least one down gradient sump for collection. The LCRS blanket drain will have an approximate slope of two percent to direct flow to the sump.

Plain piping will be used for the proposed outfall systems. Perforated pipe and filter material will be used for the proposed collection system.

The collection system will be routinely monitored to detect the presence of any leachate. Leachate will be removed and, 1) re-circulated into the waste over lined area, 2) used for on-site dust control if approved by the RWQCB and the LEA, or 3) hauled to an appropriate treatment facility.

Should any operations require an industrial waste discharge permit an application will be submitted to the Department of Public Works, Solid Waste Management Division.

### **Groundwater Monitoring System**

The proposed expansion/reconfiguration will include appropriate additions to the groundwater monitoring system. The groundwater monitoring system will consist of a number of wells to be determined by the RWQCB during the permitting process. They will be installed at location and depths to yield groundwater samples that represent the background water quality and the quality of groundwater passing the points of compliance.

All additional monitoring wells will be constructed in a manner that maintains the integrity of the drill hole and prevents cross-contamination of saturated zones as a required by State Law. All monitoring wells will be logged during drilling. In addition, appropriate sampling and analytical procedures will be employed for all sampling events.

State Water Resources Control Board (SWRCB) regulations require a groundwater monitoring system capable of detecting the migration of waste constituents from municipal landfills (Title 27, CCR § 20380 et seq.). The construction of groundwater monitoring wells will precede disposal operations. The groundwater monitoring system will be designed, constructed, and operated in accordance with the SWRCB regulation as enforced by the Lahontan RWQCB and the Waste Discharge Requirements (WDRs).

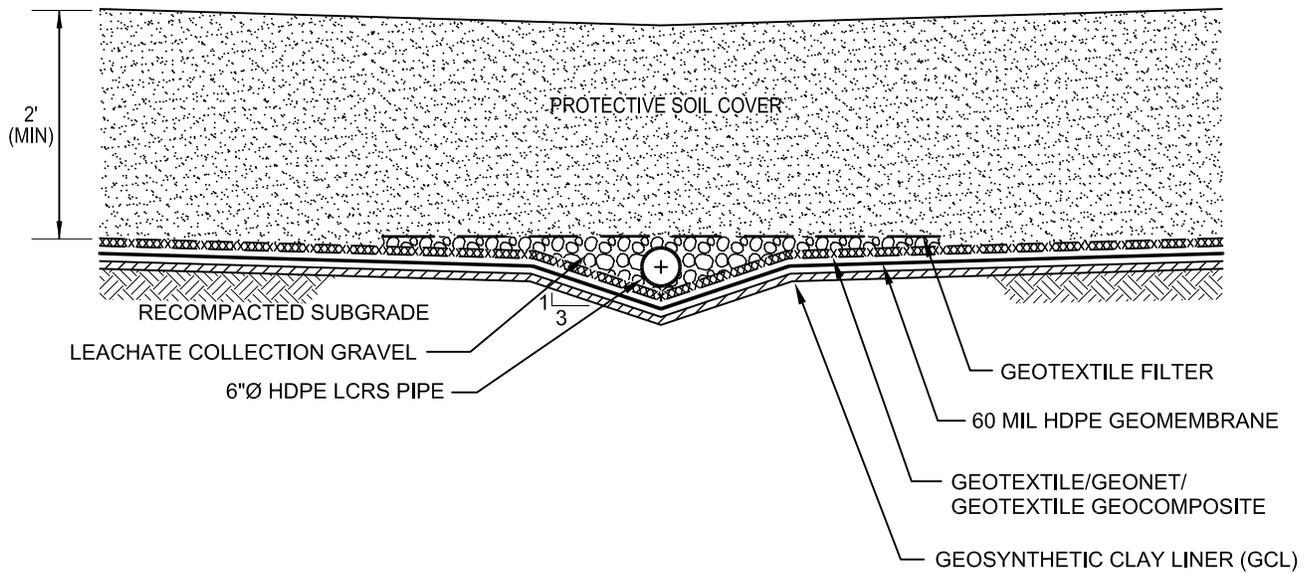
### **Composite Liner System**

**Figure 3-7**, Proposed Liner System shows the details of the liner construction assembly. The proposed expansion/reconfiguration area will be lined with an engineered composite liner system. The proposed liner system design is consistent with regulations as incorporated in Title 27 of the CCR and RWQCB Orders. The liner system for the bottom areas will typically consist of the following components, from bottom to top:

- Prepared subgrade
- Geosynthetic clay liner (GCL)
- 60 mil thick high density polyethylene (HDPE) double-sided textured geomembrane
- Leachate collection and removal system (LCRS)
- 2 ft thick operations protective layer

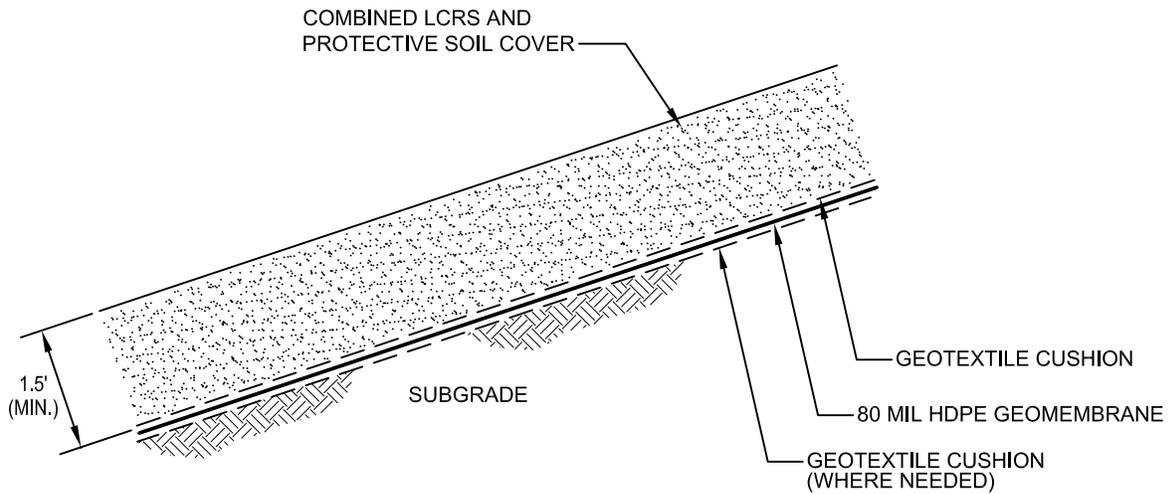
The proposed liner system design for the side-slope areas of the landfill will typically consist of the following components, from bottom to top:

- Prepared subgrade
- Non-woven geotextile, where necessary
- 80 mil thick HDPE one-sided textured geomembrane (textured side down)
- 1.5 ft thick LCRS/operations protective layer



**TYPICAL LINER AND LCRS DETAIL**

N.T.S.



**SIDESLOPE LINER DETAIL**

N.T.S.

The above liner system or an equivalent system approved by the RWQCB will be used for all future waste disposal areas.

### **Landfill Gas (LFG) Management System**

A landfill gas system currently exists on Landfill No I that complies with Antelope Valley Air Quality Management District (AVAQMD) Rule 1150.1 and New Source Performance Standards (NSPS). Vertical extraction wells are present in Landfill I where refuse is currently at final grades. Horizontal and/or vertical gas collectors will be installed for the proposed expansion/reconfiguration in phases at 40 feet vertical intervals to control odors and surface emissions. Vertical wells will be installed after final waste grades are achieved. HDPE laterals will convey the landfill gas from the extraction wells to a perimeter landfill gas header. Each horizontal collection/extraction well will have a dedicated monitoring port and control valve.

The buried perimeter LFG header will be installed outside refuse and will convey LFG from the extraction wells to the existing flare station facility. Condensate collected from the landfill gas system will be re-injected and combusted in the flares.

### **OPERATIONAL CHARACTERISTICS/COMPONENTS WHICH DO NOT INCLUDE ANY MODIFICATION AS PART OF THE CITY CUP**

#### **Site Security**

The facility is equipped with a system of fences and locking gates surrounding the perimeter of the entire site to control unauthorized access. Public access to the facility is only permitted through the main entrance. The hazardous materials storage area is surrounded by a fence that is locked and entry is restricted to authorized personnel. Highly visible signs are posted on all fence sides designating an off-limits area containing hazardous waste. Additionally, 24-hour security is provided on-site by WMI. The security system includes either security patrols or automated camera system to discourage illegal day- and night-time activity including trespassing and vandalism.

As part of the proposed CUP, the applicant is not proposing any changes to the existing site security measures.

#### **Fire Control**

Fires that occur at landfills are either equipment or waste related. Operations personnel are trained to extinguish both types of fire. Equipment that catches fire is moved away from the active disposal area and shut down. All equipment contains fire extinguishers. Stockpiles of dirt are maintained near the active disposal area for extinguishing waste fires. Water trucks are also available to help extinguish fires. Water to the ancillary facilities is currently supplied by well water and a system of on-site storage vessels. Fire protection is provided by fire hydrants and a pressurized pump station within the maintenance building.

As part of the proposed CUP, the applicant is not proposing any changes to the existing fire control measures or systems other than potential connection to Los Angeles County Waterworks as they may be made available and accessible via the new access road alignment.

As part of the proposed CUP, the applicant is not proposing any changes to the existing fire control measures.

**Vector and Bird Control**

Vectors, which include insects, rodents, and birds, are controlled by the daily cover of a minimum of six inches of soil or approved ADC over the waste. If the daily cover does not control vectors, the landfill personnel will provide spraying or other control measures including explosive-noise devices to deter birds. As a result of the operational procedures performed at the facility, vectors have historically not been reported as a problem. Noise-generating devices may impact adjacent land uses and are analyzed in the noise section of this EIR.

As part of the proposed CUP, the applicant is not proposing any changes to the existing vector and bird control measures.

**Litter Removal Program**

The litter removal crew averages four personnel who pick up stray debris on a daily basis. The four-person crew is augmented as necessary, in the case of high winds, to an average of fifteen to twenty personnel. Litter crew augmentation is accommodated by use of temporary employees from local services working under the direction of full time WM labor supervisory staff. The crew provides daily pick-up service around the perimeter of the landfill along Tierra Subida as well as on the landfill property. Additionally, site personnel have installed plastic and steel mesh fences that surround the landfill in order to control litter that inadvertently escapes the working face of the site. Primary litter control at the working face is controlled by the immediate placement of clean earth cover over the refuse. Normally any stray litter is stopped by the plastic mesh fence surrounding the landfill and can be hand-picked from this fence near the active face area.

As part of the proposed CUP, the applicant is not proposing any changes to the existing litter removal program.

**Vehicle Tarping Program**

Vehicle tarping requirements at the landfill site are in accordance with Section 23114 and 23115 of the Vehicle Code of the State of California.

- Section 23114: No vehicle shall be driven or moved on any highway unless the vehicle is so constructed, covered, or loaded as to prevent any of its contents or load other than clear water or feathers from live birds from dropping, shifting, leaking, blowing, spilling, or otherwise escaping from the vehicle.
- Section 23115: No vehicle transporting garbage, swill, used cans or bottles, wastepaper, waste cardboard, ashes, refuse, trash, or rubbish, or any noisome, nauseous, or offensive matter, or anything being transported for disposal or recycling shall be driven or moved upon any highway unless the load is totally covered in a manner that will prevent the load or any part of the load from spilling or falling from the vehicle.

Private vehicles driven by occasional users of the landfill are considered the most likely offenders of vehicle tarping requirements and are the most difficult to control. Primary repeat users of the existing landfill are known to the operator and have not posed problems in the past. Any driver without truck tarping is informed of the requirements for covered loads and asked to have his next load covered. Regular users of the landfill who repeatedly violate this requirement are not allowed to dispose of their loads.

As part of the proposed CUP, the applicant is not proposing any changes to the existing vehicle tarping program.

#### **Odor Control (Daily Cover)**

Solid waste and landfill gas are potential sources of odor. Odor associated with landfill operations is controlled by application of daily cover material. This limits most odors to the proximity of the working face during operations. Cover methods and the remoteness of the site keep odor from becoming a nuisance. Historically, site operations have not created significant odor impacts.

Landfill gas odors are controlled with a gas collection and flare system. Additional control for potential odor problems is anticipated through the expansion of the existing landfill gas collection system

As part of the proposed CUP, the applicant is not proposing any changes to the existing odor control measures.

#### **Hazardous Waste Load Check Program**

A hazardous waste load check program has been developed to comply with state and federal regulations under Title 27 CCR, Section 20220 and 20870 and Code of Federal Regulations (CFR), Chapter 1.

The program is based on two basic principles. The first is to prescreen any waste that may contain hazardous constituents. The second is to check incoming loads of waste for materials that are unacceptable at a Class III landfill.

The prescreening program is defined in the Hazardous Waste Load Checking Program. As part of that program, any waste that may be generated from an industrial source or could contain hazardous constituents is required to fill out waste profiles, provide laboratory test results that characterize the waste, and provide generator certifications that the waste is not hazardous. Profiles are reviewed by experienced technical personnel, and if appropriate, approved for acceptance. Waste cannot be accepted without an approved application.

Waste is also inspected through a Random Load Inspection Program and continuously inspected at the active working face. Scale clerks and equipment operators are trained and responsible for recognizing regulatory hazardous wastes and Polychlorinated Biphenyl (PCB) wastes. Typical characteristics of suspect waste are closed-top drums, tanks, containers with hazardous labeling, and materials foreign to typical commercial waste loads. Landfill staff will attempt to identify the haulers and will notify the operations manager.

A designated hazardous waste storage area is located in the ancillary facilities area for the temporary storage of waste collected as part of the load checking program. This area will be specifically designed

for the handling and storage of hazardous wastes, including approved storage containers which are safe and convenient for storing identified wastes.

On-site hazardous waste storage will be limited to 90 days or as required by the State Department of Toxic Substances Control (DTSC) prior to being transported to a permitted treatment, storage, and disposal facility (TSDF). The "Accumulation Start Date" on the California hazardous waste label of each drum containing hazardous waste will be monitored on a regular basis.

As part of the proposed CUP, the applicant is not proposing any changes to the existing hazardous waste load check program.

### **3.4.3 PROJECT PHASING AND GRADING DESIGN**

Conceptual base and final grades have been developed for the landfill expansion/reconfiguration. Base grades have been designed to provide a firm foundation capable of supporting the landfill and maintaining drainage of liquids to a central sump **Figure 3-8** presents the Proposed Base Grading Plan.

Final grades will promote surface water runoff (i.e., a minimum slope of three percent) and provide a maximum average refuse slope of approximately 2.8 H:1V (horizontal:vertical).

The proposed expansion project will be developed in phases as broadly indicated on **Figures 3-9, 3-10, and 3-11**, Fill Plan A through C. Detailed phasing plans will be developed when revised permits from the RWQCB and CIWMB are granted. Phasing will consist of excavating a 10- to 20-acre refuse disposal cell. Construction of the Liner/LCRS will be completed in accordance with Federal and State regulations. As refuse is being placed in one cell another cell will be excavated. The excavated soils of the next cell will be used for covering the refuse in the previous lined cell as well as will be used for soil berms, stockpile, and related activities. This process will continue until all cells are excavated and properly lined. As each of the proposed phases are completed, they will be brought up to final grade and closed in accordance with State and local closure requirements.

## **GENERAL BASE GRADING ACTIVITIES**

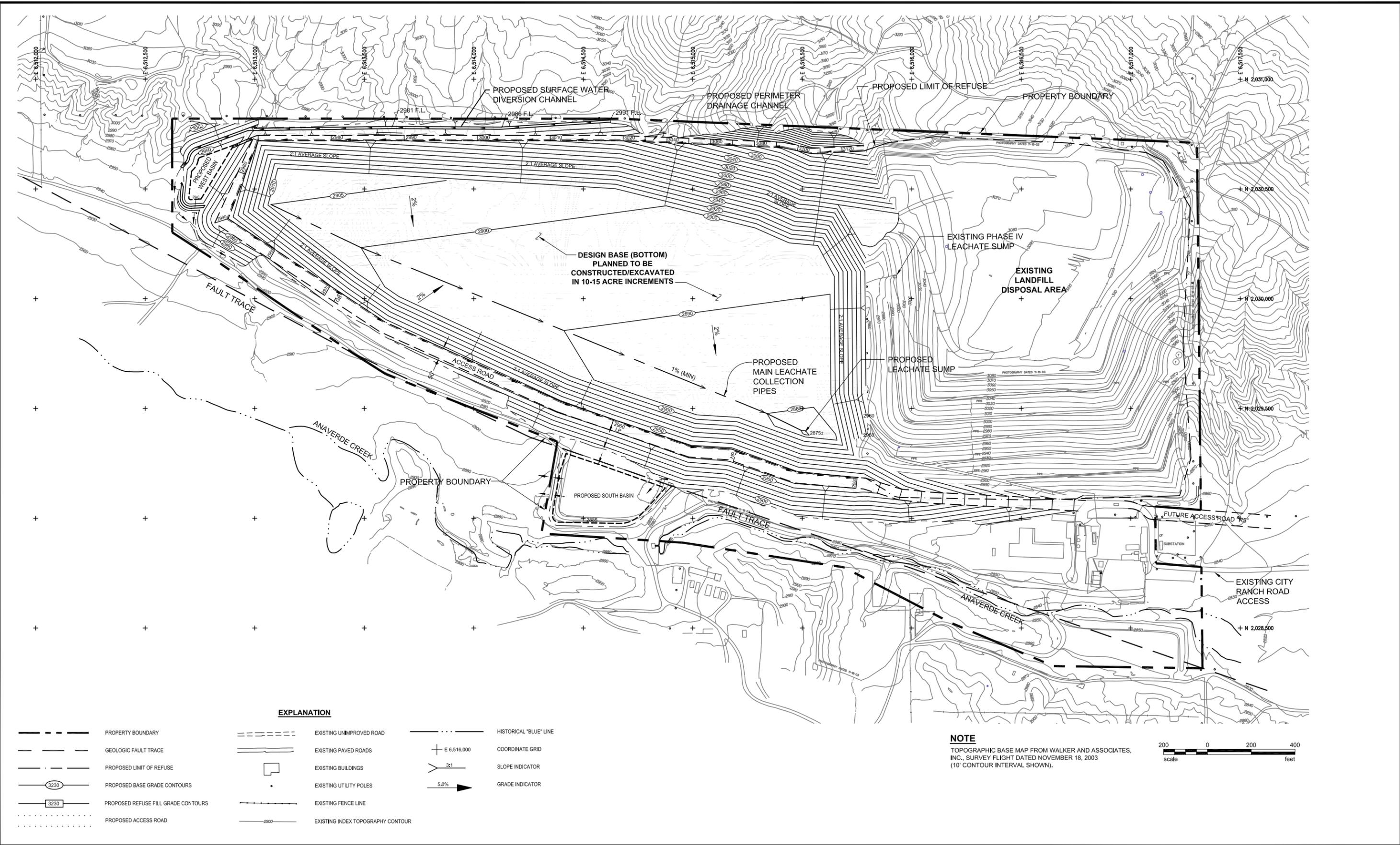
### **Subgrade Preparation**

Prior to construction, materials that are not suitable for use in construction will be removed from the project areas. Such materials include surficial vegetation, debris and other deleterious materials. The exposed subgrade (i.e., soil materials exposed after clearing) will be prepared to provide a firm surface for the placement of engineered fill to achieve the design base grades for construction of the liner system. It is anticipated that relatively hard rock may be encountered in some portions of the excavation to grade. Blasting may be required to remove hard rock. Phase-specific evaluations will be required to identify those areas, and to provide designs where rock may be exposed at the subgrade for the lining.

### **Engineered Fill Placement**

Engineered fill is defined as earth material placed in a controlled manner during landfill construction. Once subgrade preparations are completed, engineered fill will be placed to achieve the base grade elevations as required. Most of the on-site soils are suitable as engineered fill material. Processing of soil materials for use as engineered fills will be undertaken, as necessary, to comply with the requirements of

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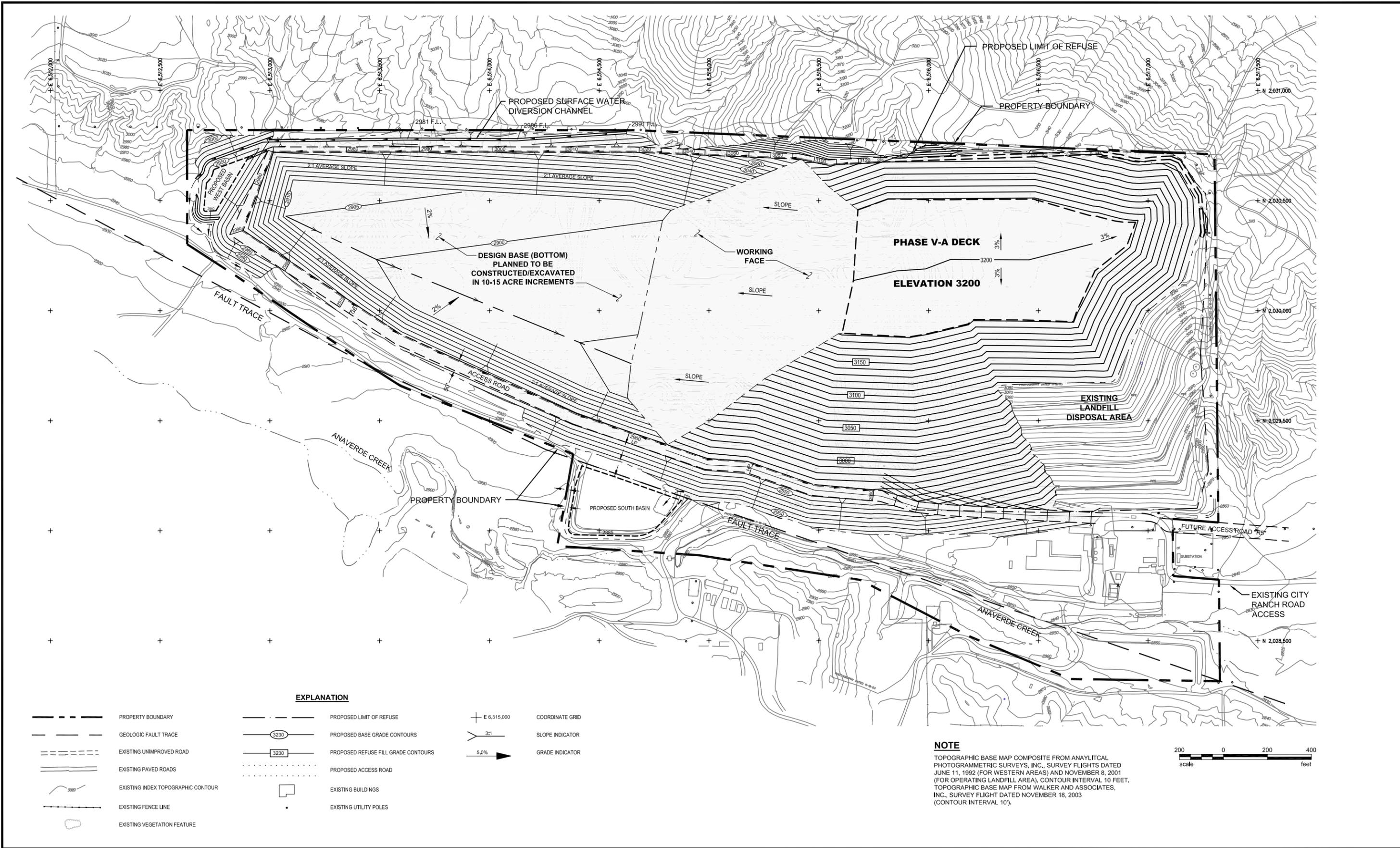


**EXPLANATION**

	PROPERTY BOUNDARY		HISTORICAL "BLUE" LINE
	GEOLOGIC FAULT TRACE		COORDINATE GRID
	PROPOSED LIMIT OF REFUSE		SLOPE INDICATOR
	PROPOSED BASE GRADE CONTOURS		GRADE INDICATOR
	PROPOSED REFUSE FILL GRADE CONTOURS		
	PROPOSED ACCESS ROAD		
	EXISTING UNIMPROVED ROAD		
	EXISTING PAVED ROADS		
	EXISTING BUILDINGS		
	EXISTING UTILITY POLES		
	EXISTING FENCE LINE		
	EXISTING INDEX TOPOGRAPHY CONTOUR		

**NOTE**  
 TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (10' CONTOUR INTERVAL SHOWN).





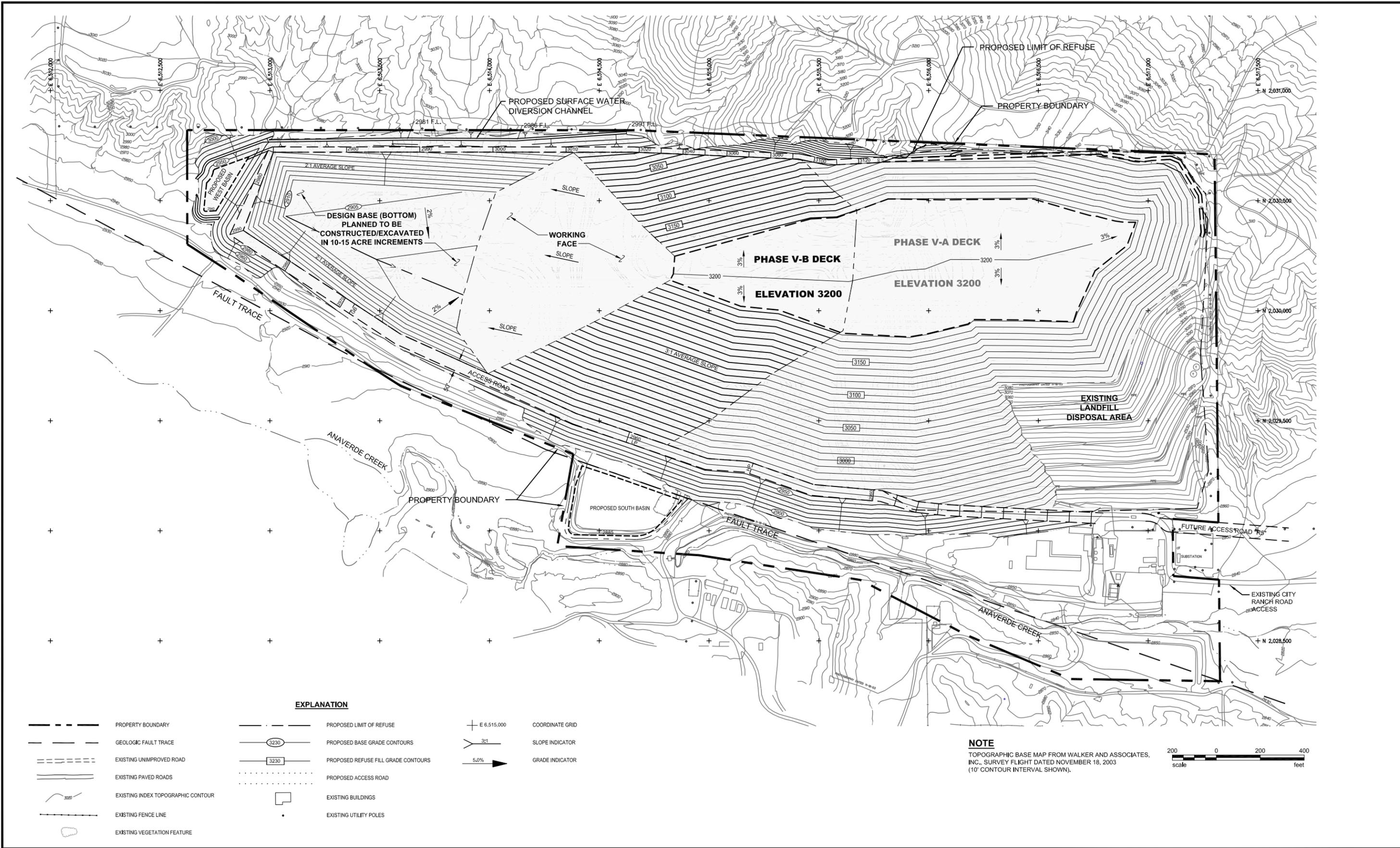
**EXPLANATION**

	PROPERTY BOUNDARY		PROPOSED LIMIT OF REFUSE		COORDINATE GRID
	GEOLOGIC FAULT TRACE		PROPOSED BASE GRADE CONTOURS		SLOPE INDICATOR
	EXISTING UNIMPROVED ROAD		PROPOSED REFUSE FILL GRADE CONTOURS		GRADE INDICATOR
	EXISTING PAVED ROADS		PROPOSED ACCESS ROAD		
	EXISTING INDEX TOPOGRAPHIC CONTOUR		EXISTING BUILDINGS		
	EXISTING FENCE LINE		EXISTING UTILITY POLES		
	EXISTING VEGETATION FEATURE				

**NOTE**

TOPOGRAPHIC BASE MAP COMPOSITE FROM ANALYTICAL PHOTOGRAMMETRIC SURVEYS, INC., SURVEY FLIGHTS DATED JUNE 11, 1992 (FOR WESTERN AREAS) AND NOVEMBER 8, 2001 (FOR OPERATING LANDFILL AREA), CONTOUR INTERVAL 10 FEET. TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (CONTOUR INTERVAL 10').





**EXPLANATION**

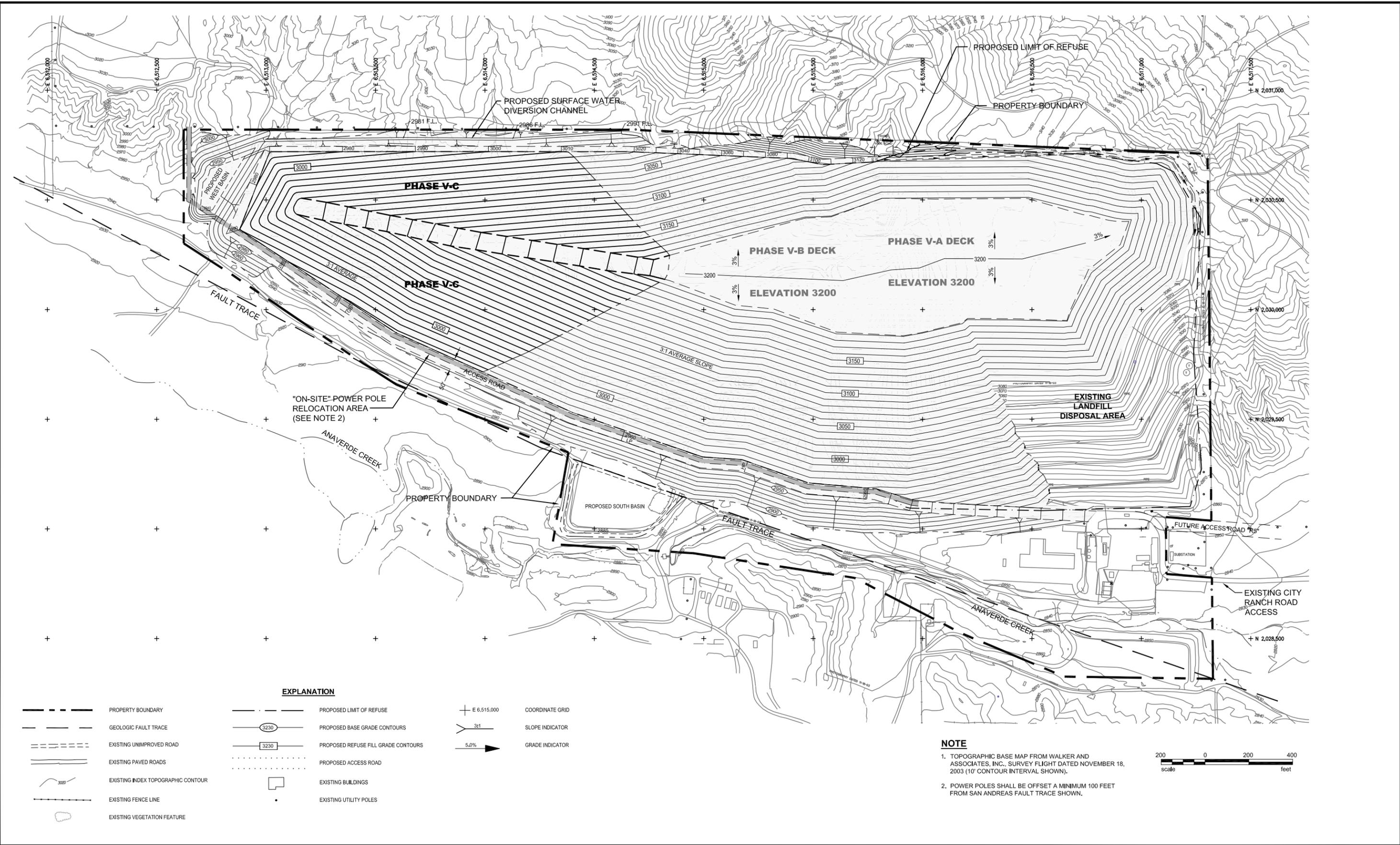
	PROPERTY BOUNDARY		PROPOSED LIMIT OF REFUSE		COORDINATE GRID
	GEOLOGIC FAULT TRACE		PROPOSED BASE GRADE CONTOURS		SLOPE INDICATOR
	EXISTING UNIMPROVED ROAD		PROPOSED REFUSE FILL GRADE CONTOURS		GRADE INDICATOR
	EXISTING PAVED ROADS		PROPOSED ACCESS ROAD		
	EXISTING INDEX TOPOGRAPHIC CONTOUR		EXISTING BUILDINGS		
	EXISTING FENCE LINE		EXISTING UTILITY POLES		
	EXISTING VEGETATION FEATURE				

**NOTE**

TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (10' CONTOUR INTERVAL SHOWN).



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**EXPLANATION**

	PROPERTY BOUNDARY		PROPOSED LIMIT OF REFUSE		COORDINATE GRID
	GEOLOGIC FAULT TRACE		PROPOSED BASE GRADE CONTOURS		SLOPE INDICATOR
	EXISTING UNIMPROVED ROAD		PROPOSED REFUSE FILL GRADE CONTOURS		GRADE INDICATOR
	EXISTING PAVED ROADS		PROPOSED ACCESS ROAD		
	EXISTING INDEX TOPOGRAPHIC CONTOUR		EXISTING BUILDINGS		
	EXISTING FENCE LINE		EXISTING UTILITY POLES		
	EXISTING VEGETATION FEATURE				

**NOTE**

1. TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (10' CONTOUR INTERVAL SHOWN).
2. POWER POLES SHALL BE OFFSET A MINIMUM 100 FEET FROM SAN ANDREAS FAULT TRACE SHOWN.



the landfill design. Processing may include crushing, sieving, and mixing of soil and rock. Off-site importation of soils is not anticipated. Unsuitable materials encountered at base grade will be over-excavated as necessary, and the over-excavated area will be backfilled with the engineered fill. Unsuitable material from clearing and grubbing activities will continue to be stockpiled within the landfill facility for subsequent possible use as daily cover material.

### **BASE GRADING DESIGN**

Base grading in the bottom areas of the expansion/reconfiguration site and Landfill II will be performed to provide drainage within the LCRS drainage layer to the proposed project site LCRS sump. The bottom of the landfill is defined as areas where the graded slopes will be less than 10 percent.

Base grading in the side-slope areas of the landfill will be performed to obtain a maximum slope of 2H:1V. Grading of the side slope areas will extend from the edges of the bottom areas to the landfill perimeter access road. Intermediate benches within the base side-slope areas will be provided as necessary to ensure adequate subgrade stability and liner system anchorage, as necessary.

### **3.4.4 REVISED TRAFFIC STUDIES**

Although the applicant is requesting an increase in the permitted daily tonnage to be disposed of in the landfill (i.e., 3,600 tpd), the traffic analysis must consider a maximum tonnage figure which includes refuse to be disposed of as well as recyclables and/or materials for alternative daily cover or beneficial use. The total maximum tonnage figure used for the proposed CUP analysis is 5,548 tpd. The discussion below summarizes the various revisions to traffic studies which concluded with the September 2004 study that is summarized in Section 4.7 of this EIR.

Concurrent with the 1998 City CUP application, a traffic study was prepared that updated truck tonnage capacity figures and background projections from the April 1993 study and September 1993 supplemental data prepared by Kunzman Associates for the County approved CUP and MND. The April 1993 study and September 1993 supplemental data analyzed a "peak maximum" intake of 3,564 tpd which includes landfilled refuse and recyclables. The 1998 updated analysis assumed that the landfill operation would increase to 3,600 tpd of total waste including recyclables. The study identified that if the project's operation increased to 3,600 tpd today, all intersections would continue to operate at Level of Service (LOS) B or better for 1998 traffic conditions. For year 2005 traffic conditions all intersection would operate at LOS D or better with or without the project.

Additionally, the 1998 study was further updated to incorporate current traffic counts as part of this proposed CUP and EIR process. The updated traffic study (August 2003) included updated truck tonnage capacity figures and background projections from the April 1993 study. The updated analysis (August 2003) assumed that the existing landfill operation would increase to 3,613 tpd of total materials.

The August 2003 study was further revised in September 2004 in response to NOP comments and to allow for an average total daily limit of 3,613 tpd and a maximum peak of 5,548 tpd, when large quantities of concrete for recycling and/or materials for alternative daily cover or beneficial use are received at the landfill. The revised study also addresses the potential for transfer trucks and the modified receipt of refuse hours as part of the proposed CUP.

Several studies were completed by Kunzman Associates in 2002 and 2003 to analyze different landfill access alternatives for reaching Tierra Subida Road. The final September 2004 study concludes that

rerouting a portion of R-5 to coincide with Rayburn Road is the preferred ultimate access route into the facility and therefore this alignment has been incorporated as a component of the proposed project. Subsequent to the preparation of this Draft EIR in December 2005, the City of Palmdale has proposed to widen Tierra Subida Avenue between City Ranch Road and Cactus Drive (City Project Number 482). Since the City Project Number 482 would affect the proposed project site’s existing access at the intersection of City Ranch Road and Tierra Subida Avenue, a sight distances evaluation has been conducted (JT Engineering 2010) (see **Appendix G-1**). Based on the sight distance evaluation, the project engineer recommended the construction of Avenue R-5 from the Waste Management property line and a frontage road as the future access to the project site. Section 4.7, Traffic and Circulation, of this Draft EIR Amendment includes analysis of the new circulation improvement.

**3.4.5 RESPONSIBLE/TRUSTEE AGENCIES**

A “Responsible Agency” means a public agency which proposes to carry out or approve a project for which the lead agency is preparing or has prepared an EIR. For CEQA purposes, the term “responsible agency” includes all public agencies that have discretionary approval over one or more actions involved with development of the proposed project (CEQA Guidelines, Section 15382). A “Trustee Agency” means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. Generally, trustee agencies include, for example, the California Department of Fish and Game (CEQA Guidelines, Section 15386). This EIR is also intended to provide environmental information to a number of local agencies, which may be involved in providing public services or utilities to the project, or may otherwise have an interest in the development’s environmental effects.

**AGENCIES AND INTERESTED ORGANIZATIONS**

1. California Integrated Waste Management Board (CIWMB)
2. Los Angeles County Health Department Solid Waste Management Division Local Enforcement Agency (LEA)
3. Lahontan Regional Water Quality Control Board (RWQCB)
4. Antelope Valley Air Quality Management District (AVAQMD)
5. Los Angeles County, Department of Public Works and Fire Department
6. Caltrans District 7
7. California Department of Fish and Game
8. Antelope Valley Archaeological Society
9. Southern California Edison

**3.5 RELATED PROJECTS/CUMULATIVE APPROACH ASSUMPTIONS**

CEQA Guidelines section 15130, subdivision (b) indicates that the level of detail of the cumulative analysis need not be as great as for the project impact analyses and that it should reflect the severity of the impacts and their likelihood of occurrence. It should be focused, practical, and reasonable.

To be adequate, a discussion of cumulative impacts must include the following elements:

Either (a) a list of past, present, and probable future projects including, if necessary, those outside the agency’s control or (b) a summary of projections contained in an adopted general plan or related planning document, or in a prior adopted or certified environmental document, which described or evaluated regional or areawide conditions contributing to the cumulative impact

provided that such documents are referenced and made available for public inspection at a specified location.

A summary of expected environmental impacts of individual projects, with specific reference to additional information stating where such information is available; and

A reasonable analysis of all cumulative impacts of the relevant projects, with an examination of reasonable, feasible options for mitigation or avoiding the project's contribution to such effects.

(CEQA Guidelines, § 15130, subd. (b)).

For some projects, the only feasible mitigation measures would involve the adoption of ordinances or regulations, rather than the imposition of conditions on a project-by-project basis. (CEQA Guideline, § 15130, subd. (b)).

The EIR preparers consulted with the City of Palmdale Planning staff on the appropriate approach to cumulative impacts. Although the proposed project is mainly the 11-acre expansion to allow the reconfiguration of Landfills I and II, the cumulative impacts of the combined landfills are analyzed (i.e., Landfills I and II and expansion/reconfiguration site).

For an analysis of cumulative traffic, mobile source air quality and traffic noise impacts, in order to account for areawide growth on roadways, Year 2007 traffic volumes have been calculated based on a 6% annual growth rate of existing traffic volumes over a 5 year period. Areawide growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the project. Using the 6% growth factor is more conservative than the SCAG, 2004 RTP projections. Please refer to **Table 3-1**, Future Growth/Demand, which shows a population growth rate of 3% for the Cities of Palmdale, Lancaster, and Santa Clarita and a 5% growth rate for the unincorporated areas of the Antelope Valley.

In addition to utilizing the 6% growth factor for analysis of cumulative impacts such as traffic, mobile source air quality and traffic noise impacts, a list of past, present, and reasonably foreseeable future development projects in the close vicinity of the proposed project were taken into account in assessing cumulative impacts of other environmental topics such as aesthetics, construction impacts, etc. The specific projects in the vicinity of site that were considered in the analysis of cumulative impacts are listed below. This list was developed through discussion with City staff and review of the Residential Development Summary, dated February 2004, and Status of Commercial/Industrial Development Maps, which were provided by the City staff. Additionally, a summary of the cumulative impact analysis scope utilized for each of the environmental topics in Section 4.0 of this document is provided in Section 3.5.3.

### **3.5.1 SCAG 2004 REGIONAL TRANSPORTATION PLAN (RTP)**

The Regional Transportation Plan (RTP) is a long-range (minimum 20-year) vision document that outlines transportation goals, objectives, and policies for the SCAG Region. The RTP is based on federal transportation law requiring comprehensive, cooperative, and continuous transportation planning. SCAG meets these requirements by developing comprehensive transportation plans that include all surface transportation modes, to ensure efficient people and goods movements throughout the region. RTP includes an assessment of overall growth and economic trends in the region, and provides strategic direction for transportation capital investments.

Every three years, SCAG revises the RTP, with updated information and a new environmental clearance. The update reflects population, housing, employment, environmental, land use forecasts and technology changes. This regional planning document is required by a number of state and federal mandates and requirements. The last updated plans were adopted by SCAG in April 2001 and April 2004.

### **3.5.2 CUMULATIVE PROJECTS**

The projects that are included in the assessment of cumulative impacts include City Ranch Specific Plan/Anaverde LLC EIR, Ritter Ranch Specific Plan, Tentative Tract Map #53869, Joshua Ranch residential development, Tentative Parcel Map #061657 and the Palmdale Medical Center.

#### **CITY RANCH SPECIFIC PLAN/ANAVERDE LLC**

This development is located west of the project site, south of Elizabeth Lake Road between 20<sup>th</sup> Street West and 40<sup>th</sup> Street West. The project proposed development of 5,200 dwelling units on 1,049 acres, 42 acres of commercial development, 36 acres of school use, 216 acres of golf course and open space areas, and 400 acres of natural open space. The development is at its initial stages of construction.

#### **RITTER RANCH SPECIFIC PLAN**

This development is located west of the project site, south of Elizabeth Lake Road between the alignments of 40<sup>th</sup> Street West and 90<sup>th</sup> Street West. The project is a residential master planned community consisting of 7,200 residential units on 2,460 acres, 72 acres of commercial use, 120 acres of park land, 128 acres of school use, and 7,846 acres of natural open space. The development is currently in the final planning stages and initial stages of construction.

#### **TENTATIVE TRACT MAP 53869**

This residential subdivision is located at the northeast corner of Avenue Q-8 and Tierra Subida, northeast of the proposed project site. This development subdivides the 20-acre site into 68 single-family lots. The project was approved on November 7, 2002 and will expire on November 19, 2005.

#### **JOSHUA RANCH RESIDENTIAL**

This residential development is located in west Palmdale, adjacent to the City Ranch and Ritter Ranch developments. The property is located northwest of the project site, north of Lake Elizabeth Road and west of the California Aqueduct. The project proposes a total of 539 - 10,000 to 20,000 square foot lots.

#### **TENTATIVE PARCEL MAP 061657 - COMMERCIAL DEVELOPMENT**

This is a proposal for a commercial development on 26.21 acres located on northeast and northwest corners of Avenue S and Tierra Subida Avenue, southeast of the proposed project site. The project is at its initial planning stages.

#### **PALMDALE MEDICAL CENTER**

This proposed project is located northeast of the project site, south of the southeastern corner of the intersection of Palmdale Boulevard and Tierra Subida Avenue. The project includes a general hospital, two medical office buildings, and an affordable senior housing/assisted living facility within a 37.19-acre site.

### 3.5.3 CUMULATIVE SCOPE

This summary identifies the cumulative scope (i.e., list of cumulative projects versus 6% growth rate) for each of the environmental topics included in Section 4.0 of this document.

- Earth Resources
  - Surface Fault Rupture – list of cumulative projects
  - Earthquake Ground Shaking – list of cumulative projects
  - Liquefaction – list of cumulative projects
  - Expansive Soils – list of cumulative projects
  - Slope Stability – list of cumulative projects
  
- Air Quality
  - Construction Impacts – existing Landfill I, permitted Landfill II, and list of cumulative projects
  - Operational Impacts – existing Landfill I, permitted Landfill II, and 6% growth rate projection and list of cumulative projects
  - Geographic Scope – Mojave Desert Air Basin
  
- Hydrology and Water Quality
  - Regional Post-Development Hydrology/Flooding and Scour/Erosion of Creek – list of cumulative projects
  - Regional (watershed) Runoff and Surface Water Quality – list of cumulative projects
  - Regional Groundwater Quality – list of cumulative projects
  - Geographic Scope – Upper Anaverde Creek Watershed
  
- Biological Resources
  - Vegetation and Habitats – list of cumulative projects
  - Wildlife – list of cumulative projects
  - Sensitive Resources – list of cumulative projects
  - Wildlife Corridors – list of cumulative projects
  - Geographic Scope – adjacent property along Anaverde Creek
  
- Noise
  - Construction Noise from relocation of access and development of ancillary facilities – list of cumulative projects
  - On-Road Hauling Noise – 6% growth rate projection
  - Operational Noise – list of cumulative projects
  - Geographic Scope – adjacent property owned along Tierra Subida to landfill

- Aesthetics/Light and Glare
  - Scenic Resources/Visual Qualities (including height increase) – existing Landfill I, permitted Landfill II, and list of cumulative projects
  - Litter – existing Landfill I, permitted Landfill II, and list of cumulative projects
  - Light and Glare – existing Landfill I, permitted Landfill II, and list of cumulative projects
  - Geographic Scope – area within view shed of project selected in consultation with the City
  
- Traffic and Circulation
  - Year 2007 Volumes to Capacity Ratios – 6% growth rate project
  - Year 2007 Intersection Capacity Utilization – 6% growth rate projection
  - Geographic Scope – primary access roads to the project and SR-14 selected in consultation with the City
  
- Risk of Upset/Human Health
  - Household Hazardous Waste – list of cumulative projects

#### 4.0 ENVIRONMENTAL ANALYSIS

The following section details project impacts that were previously identified in the Initial Study for the proposed project. The Initial Study is contained in **Appendix A-1** of this EIR. The environmental topics addressed in this document are as follows:

- Earth Resources
- Air Quality
- Hydrology and Water Quality
- Biological Resources
- Noise
- Aesthetics/Light and Glare
- Traffic and Circulation
- Risk of Upset/Human Health

Each impact analysis is structured in the following manner:

1. ***Introduction.*** Provides a brief description of the approach for the analysis and/or the technical report (if applicable), the consultant who prepared the report, the date, and other pertinent information about the report.
2. ***Existing Conditions.*** This section describes the project area and characteristics as they presently occur. This description focuses on the particular impact area (i.e., noise, air quality, etc.) that is being discussed. In accordance with Section 15125 of the State CEQA Guidelines, both the local and regional settings are discussed as they exist prior to implementation of the proposed project. Please refer to Section 3.1 for determination of the environmental baseline for analysis of the environmental impacts of the proposed project.
3. ***Threshold of Significance.*** This section is based on the established CEQA Guidelines, thresholds contained in the Initial Study, or other generally accepted standards. The thresholds are the guiding criteria against which the impacts of the project can be compared to determine if an impact would be significant. In determining whether an impact is "significant" within CEQA's definition, emphasis has been given to the basic policies of CEQA with respect to a particular subject matter, as well as to specific criteria for significance found in the CEQA Guidelines (refer to Appendix G to the CEQA Guidelines). An effort has been made to avoid overly subjective significance criteria that are not based in specific CEQA policies and/or generally accepted thresholds upon which significance can be determined. For each subject area addressed within this EIR, significance criteria are identified that have been applied in analyzing the potential effects of the Proposed Project.

4. ***Project Impacts.*** The impacts section describes how implementation of the proposed project would affect the existing conditions related to the site, surrounding area, and region. This section provides both a qualitative as well as quantitative analysis (when the data is available). Appropriate terminology is used to define the degree of the impact. For ease of reference, project impacts are numbered in bold based on the environmental section numbers (i.e., impacts for earth resources section, which is 4.1 are numbered 4.1-1, 4.1-2, etc.).
5. ***Cumulative Impacts.*** This section describes the potential impacts of the project in conjunction with other projects as outlined in Section 3.5 of this EIR.
6. ***Mitigation Measures.*** The mitigation measures section identifies the measures recommended to avoid, reduce, or eliminate, significant environmental impacts. According to CEQA requirements, this section contains all reasonable feasible mitigation measures that would reduce adverse impacts to a level considered less than significant. This EIR document includes new mitigation measures as well as mitigation measures incorporated from the 1992 County certified EIR and 1993 Mitigated Negative Declaration. The 1992/1993 measures are identified as they originally appear in the 1992/1993 documents with revisions necessary to render the mitigation measures binding under current CEQA law and applicable for the proposed project (**Appendix A-4** of this document contains a copy of the original County-approved Mitigation Monitoring Program [MMP]). For ease of reference and to relate each mitigation measure to its appropriate environmental impact section, mitigation measures are numbered based on the environmental section numbers (i.e., mitigation measures for earth resources section, which 4.1 are numbered 4.1-1, 4.1-2, etc.). It should be noted that many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.
7. ***Level of Significance After Mitigation.*** This section states whether the project-specific and cumulative impacts identified in the impacts analysis can be mitigated to a less than significant level. If the impacts cannot be adequately mitigated, they are noted as unavoidable adverse impacts. Impacts that can be mitigated are either mitigated to less than significant level, or are lessened but not mitigated to less than significant level and remain unavoidable adverse impacts of the proposed project. Prior to approval of the proposed project, the City of Palmdale Planning Commission or Palmdale City Council will be required to adopt a Statement of Overriding Considerations for any identified unavoidable impacts. The statement identifies and describes the public benefit(s) associated with the project implementation that offset significant impacts.

## 4.1 EARTH RESOURCES

### 4.1.1 INTRODUCTION

The 1992 certified EIR for Landfill II included detailed descriptions of the geotechnical conditions in the project area based on literature reviews, consultations, and field surveys conducted by Kleinfelder, Inc. Buena Engineers, Inc. also conducted prior geotechnical analysis of the site and their analyses were also reviewed by Kleinfelder and findings for landfill siting were utilized in their investigations. For the currently proposed expansion/consolidation, Golder Associates conducted a review of the previous materials and prepared a supplemental report disclosing the geotechnical conditions, potential impacts and proposed mitigation for the expansion site. The Kleinfelder reports are contained in Appendix C of the original EIR. The Golder Associates (2005) report is included in this SEIR document as **Appendix B-1**.

### 4.1.2 EXISTING CONDITIONS

#### GEOLOGICAL SETTING

The AVPL is located at the southern margin of the western Mojave Desert, which is part of the Transverse Ranges geomorphic province of California (California Geological Survey, 2002). The Transverse Ranges are characterized by east-west trending mountain ranges and deeply incised valleys. Rapid tectonic uplift, active faulting and folding of young geological units characterize the geological history of this province. The AVPL site lies between the San Andreas Fault (SAF) and the Little Rock Faults. Regional geology consists of pre-Tertiary (more than 65 million years old) granite and metamorphic basement rocks and mid- to late-Cenozoic Era (less than about 30 million years) volcanic and sedimentary rocks that underlie Quaternary (less than 1.6 million years old) alluvial and terrace deposits (Norris and Webb, 1990). The Transverse Ranges Province and adjoining Coast Range Province are the most seismically active parts of California.

The AVPL site is located on a narrow topographic ridge that is a southeastward continuation of Ritter Ridge. The topographic ridge sits within the zone of faulting and folding associated with displacement along the SAF. The SAF separates distinct geological terranes. Strongly metamorphosed Pelona schist and other basement rocks occur southwest of the SAF. Granitic rocks and Tertiary sedimentary and volcanic rocks of the Mojave region occur to the northeast.

Rocks on both sides of the SAF and within the fault zone have been subjected to intense faulting and folding. Major secondary faults, such as the Little Rock and Nadeau faults are considered by California Geological Survey (2003) to bound the major deformation zone of the SAF. The Little Rock fault and other smaller faults were mapped within the AVPL site by Kleinfelder (1989a). The activity and earthquake hazard significance of these faults are discussed in the following section and **Appendix B-1**.

#### EARTH MATERIALS

##### Pre-Tertiary-Aged Geologic Units

The pre-Tertiary Period basement rocks present in the AVPL, are quartz monzonite (qm) and granodiorite (gd) (see **Figure 4.1-1**, Geology and Fault Zones). **Figure 4.1-2**, Geologic Cross Section, provides a

generalized cross section through the AVPL site. These rocks cooled from magma within the crust about 100 million years ago. Uplift and erosion have exposed these rocks at the ground surface. The quartz monzonite is highly fractured and moderately weathered. The granodiorite is strongly weathered within the AVPL and becomes increasingly fractured in the vicinity of the local faults.

### **Pliocene-Aged Anaverde Formation**

Three members of the Pliocene-age (5.3 to 1.6 million years) Anaverde Formation are exposed within the limits of the AVPL:

- Lower red arkose (Tar) is a red to pinkish tan, fine- to coarse-grained arkosic sandstone. The sandstone is weakly to moderately indurated, and contains some silty and pebbly beds. Unweathered portions are very hard; weathered portions are more friable.
- Middle gray arkose (Tag) is a gray to tan, fine- to coarse-grained arkosic sandstone with thin interbeds of shaly sand, pebble conglomerate, and cobble conglomerate. This unit is well indurated and resistant to weathering. The unit forms cliffs and ridges north of the San Andreas Fault.
- Upper gypsiferous claystone (Tac) is a brown to black thinly-bedded claystone with abundant interbeds of gypsum, anhydrite, halite, and other evaporitic deposits. The rock unit contains occasional thin to thick beds of gray, pebbly, fine- to coarse-grained arkose. The claystone is intensely folded and sheared in the vicinity of the SAF.

### **Quaternary-Aged Alluvial Soils**

Four Quaternary-age (less than 1.6 million years old) alluvial units have been identified within the AVPL. In order of decreasing age these alluvial units are: terrace deposits of the Harold formation; terrace deposits (Qt); older alluvium (Qo); and younger alluvium (Qal). The units comprise interbedded layers of gravel, sand, and silt up to 50 feet thick.

## **SEISMIC HAZARDS AND FAULTING**

Kleinfelder (1989a, b) and GCE (1999), and as shown on **Figure 4.1-1**, Geology and Fault Zones, indicate that the southern half of the AVPL expansion site located within the Alquist-Priolo (AP) Zone for the SAF. An AP Zone is a regulatory zone delineated by the State Geologist (Chief of the California Geological Survey) where active faults may pose a ground rupture hazard for structures for human occupancy built within the zone. Kleinfelder (1989 a, b) concluded that there is no evidence for Holocene activity associated with the fault fractures (Fracture “A” and “B”) and the Little Rock Fault within the project site. A Holocene fault as defined by the State of California Division of Mines and Geology is a fault which shows evidence of activity within the last 11,000 years.

The Seismic Hazards Mapping Act (Act) of 1990 directs the Department of Conservation to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the Act is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. Staff geologists in the Seismic Hazard Mapping Program (Program) gather existing geological, geophysical and geotechnical data from numerous sources to compile the Seismic Hazard Zone Maps. They designate Zones of Required Investigation for areas prone to liquefaction and earthquake-induced landslides. The Seismic Hazard

Zone Maps identify where a site investigation is required and the site investigation determines whether structural design or modification of the project site is necessary to ensure safer development.

The Seismic Hazards Zones Map that includes the Antelope Valley Public Landfill site (California Geological Survey, 2003) indicates that areas of potential liquefaction and earthquake induced landsliding are present in some parts of the site. Additional site-specific investigation and analyses were performed to evaluate seismic hazard conditions at the site. Details of the additional investigations are discussed in the sections following.

### **Historic Earthquakes**

Large earthquakes and associated ground shaking have occurred regularly in the history of the greater Los Angeles area that includes the AVPL. The 1857 magnitude (M) 8 Fort Tejon, 1992 M 7.4 Landers and 1994 M 6.8 Northridge earthquakes are well known examples from southern California. **Figure 4.1-3, Earthquakes and Active Faults within 62 Miles of the Landfill** shows the location of earthquake epicenters greater than M 4 since 1973 and greater than about M 4.5 since the early 18<sup>th</sup> Century within about 62 miles (100 km) of AVPL. **Table 4.1-1** provides details of the earthquakes with magnitudes of about 6 or greater within 62 miles (100 km) of the landfill site. Only the Landers earthquake epicenter was within 62 miles (100 km) of the AVPL and therefore included in **Table 4.1-1**.

The 1857 Fort Tejon earthquake resulted in more than 225 miles (360 km) of surface rupture along the San Andreas Fault in Central and Southern California, including the part of the fault close to the AVPL. Sieh (1978) estimates that about 13 feet (4 m) of right-lateral, horizontal movement occurred near Lake Palmdale during this large earthquake. While surface rupture occurred near to the AVPL site, the earthquake epicenter is considered by Sieh (1978) to be located about 150 miles (240 km) northwest of the AVPL site, near Cholame in central California. This epicenter is not included in Figure 4-1 because it is more than 62 miles (100 km) from the AVPL site, although strong earthquake shaking almost certainly occurred at the AVPL site during this earthquake.

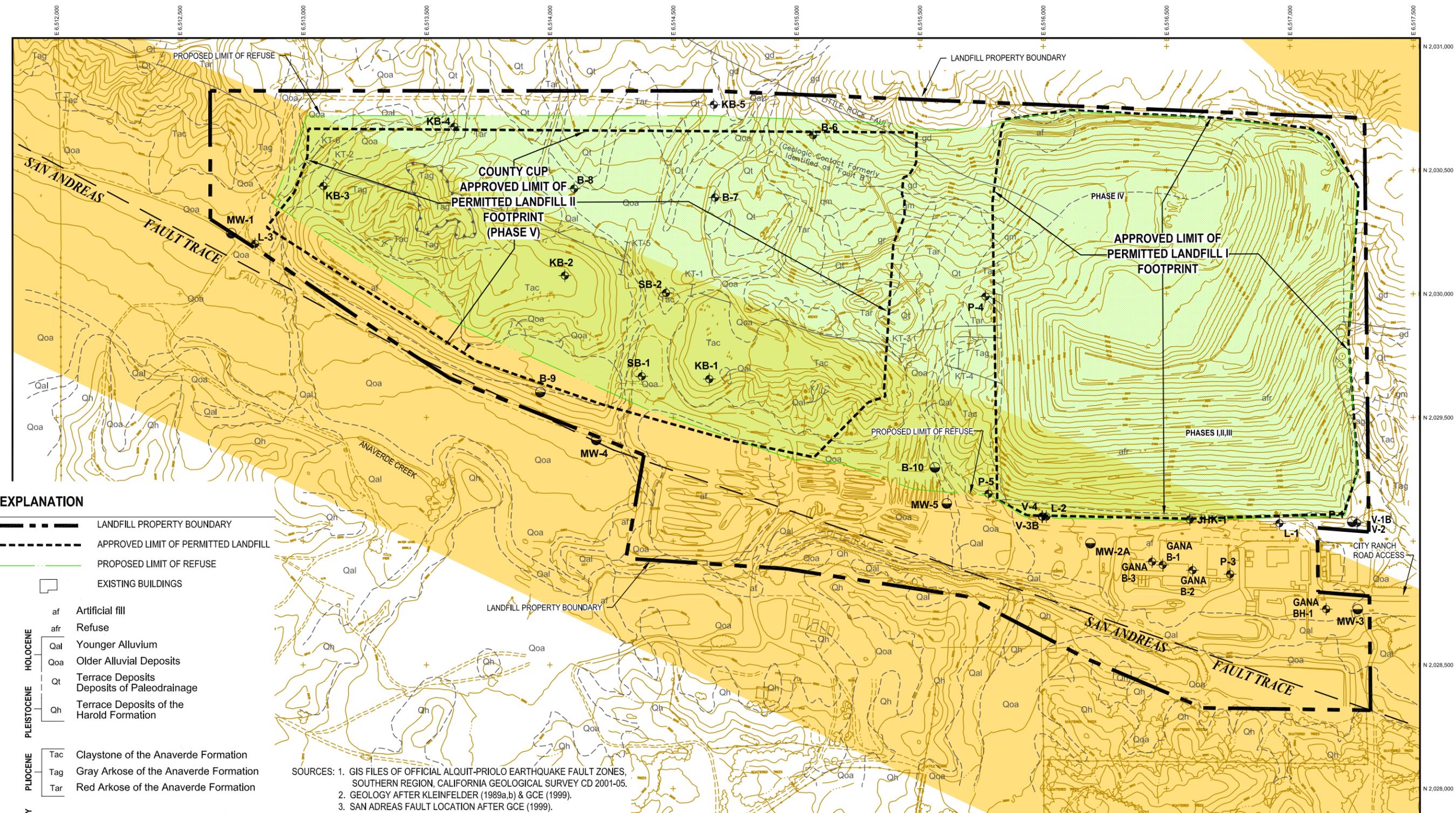
**TABLE 4.1-1  
SUMMARY OF M<sub>≥</sub>6.0 EARTHQUAKE EPICENTERS  
WITHIN 62 MILES OF THE SITE**

<b>Date (mm-dd-yyyy)</b>	<b>Latitude (°N)<sup>1</sup></b>	<b>Longitude (°W)</b>	<b>Magnitude (M)</b>	<b>Distance from the AVPL (miles)<sup>2</sup></b>
12-08-1812	33.70	117.90	6.9	61
01-09-1857	35.72	120.32	7.8	240 <sup>3</sup>
07-22-1899	34.30	117.50	6.5	41
10-23-1916	34.90	118.90	6.0	48
07-21-1952	35.00	119.02	7.7	58
07-21-1952	35.00	119.00	6.4	56
07-23-1952	35.37	118.58	6.1	60
02-09-1971	34.41	118.40	6.4	17
10-01-1987	34.06	118.08	6.1	34
02-28-1990	34.14	117.70	6.2	38
01-17-1994	34.21	118.54	6.8	32

Source: *Golder Associates*

Notes:

- 1 Locations and magnitudes were obtained from the USGS/NEIC PDE (1973-present) and California (1735-1974) earthquake catalogs. <http://neic.usgs.gov/neis/>.
- 2 Distance from the Landfill site based on location at 34.561 °N, 118.150 °W.
- 3 1857 Fort Tejon earthquake included because it ruptured the San Andreas fault adjacent to the AVPL site.



**EXPLANATION**

- LANDFILL PROPERTY BOUNDARY
- - - APPROVED LIMIT OF PERMITTED LANDFILL
- PROPOSED LIMIT OF REFUSE
- EXISTING BUILDINGS
- af Artificial fill
- afr Refuse
- Qal Younger Alluvium
- Qoa Older Alluvial Deposits
- Qt Terrace Deposits
- Deposits of Paleodrainage
- Qh Terrace Deposits of the Harold Formation
- Tac Claystone of the Anaverde Formation
- Tag Gray Arkose of the Anaverde Formation
- Tar Red Arkose of the Anaverde Formation
- qm Quartz Monzonite
- gd Granodiorite

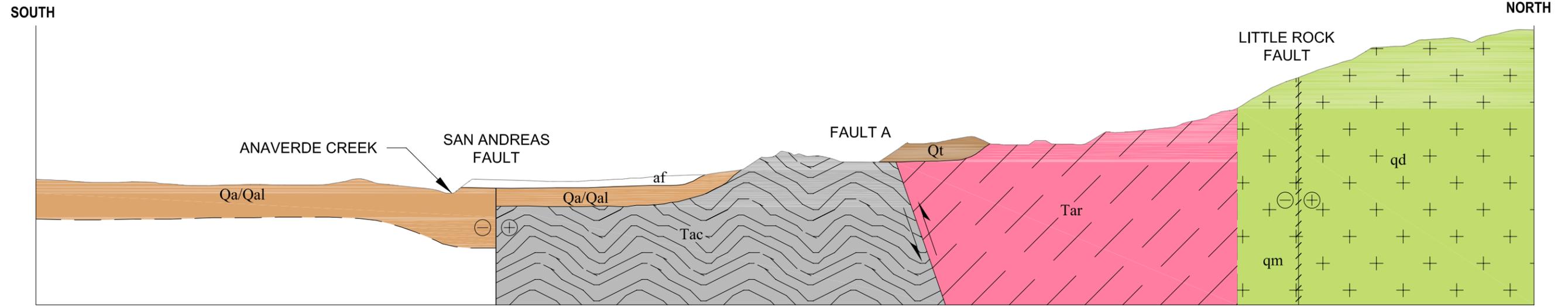
SOURCES: 1. GIS FILES OF OFFICIAL ALQUIST-PRIOLO EARTHQUAKE FAULT ZONES, SOUTHERN REGION, CALIFORNIA GEOLOGICAL SURVEY CD 2001-05.  
 2. GEOLOGY AFTER KLEINFELDER (1989a,b) & GCE (1999).  
 3. SAN ANDREAS FAULT LOCATION AFTER GCE (1999).

- GEOLOGIC CONTACT
- FAULT, Solid where mapped, dashed where inferred, dotted where concealed
- THRUST FAULT
- BORING LOCATION
- GROUND WATER MONITORING WELL LOCATION
- KT-3 EXPLORATION TRENCH
- ALQUIST - PRIOLO EARTHQUAKE FAULT ZONE

**NOTE**  
 TOPOGRAPHIC BASE MAP COMPOSITE FROM ANALYTICAL PHOTOGRAMMETRIC SURVEYS, INC., SURVEY FLIGHTS DATED JUNE 11, 1992 (FOR WESTERN AREAS) AND JANUARY 7, 2000 (FOR OPERATING LANDFILL AREA). CONTOUR INTERVAL IS 10 FEET.

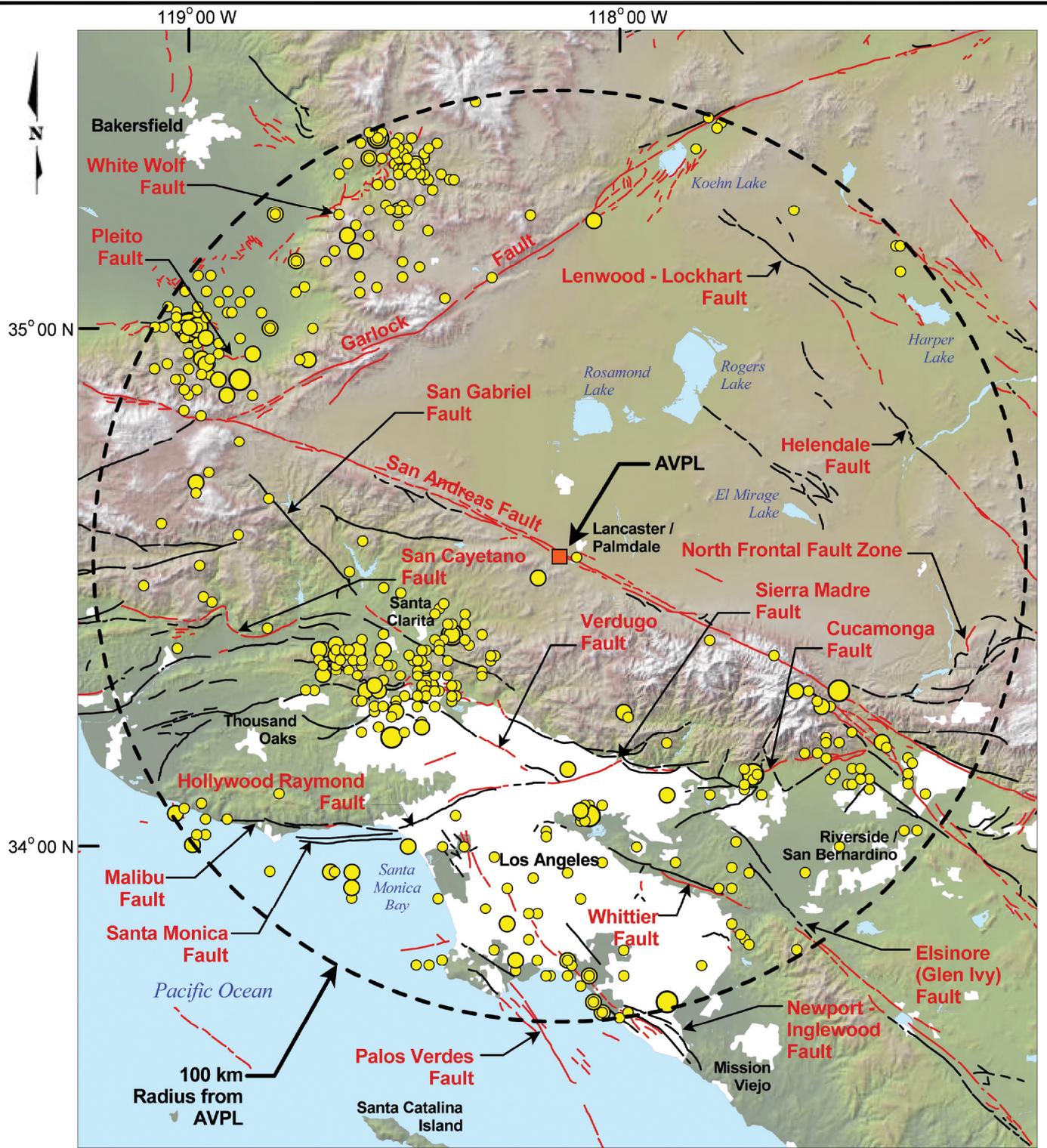


**Figure 4.1-1**  
**Geology, Fault Zones**  
**and Major Permit Boundaries**



**EXPLANATION**

	af	Artificial fill
	afr	Refuse
HOLOCENE	Qal	Younger Alluvium
	Qoa	Older Alluvial Deposits
	Qt	Terrace Deposits Deposits of Paleodrainage
PLEISTOCENE	Qh	Terrace Deposits of the Harold Formation
PLIOCENE	Tac	Claystone of the Anaverde Formation
	Tag	Gray Arkose of the Anaverde Formation
	Tar	Red Arkose of the Anaverde Formation
PRE-TERTIARY	qm	Quartz Monzonite
	gd	Granodiorite
	⊖ ⊕	Relative Horizontal Fault Movement + Movement Toward Observer - Movement Away from Observer
	↕	Relative Vertical Fault Movement

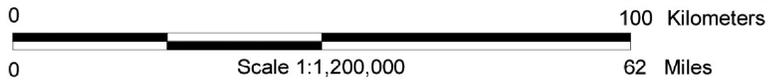


**LEGEND**

- Historic and Holocene Faults
- Late Quaternary Faults
- Urban Areas
- Lakes

**Earthquake Magnitude**

- 4.0 - 4.9
- 5.0 - 5.9
- 6.0 - 6.9
- ≥ 7



Map Projection:  
California State Plane Zone 5  
NAD 83 Feet

Source: USGS, GIS Data Depot,  
National Atlas, California Dept.  
of Conservation

**Figure 4.1-3**  
**Earthquakes and Active Faults within**  
**62 Miles (100 km) of the Landfill**

**Major Faults**

There are 21 known active fault earthquake sources within about 62 miles (100 km) of the AVPL site (**Figure 4.1-1**, Geology and Fault Zones, **Table 4.1-2**) including the segment of the San Andreas Fault adjacent to the AVPL. **Table 4.1-2** indicates the closest distance to each earthquake source to the AVPL. Also shown are the estimated median peak horizontal ground acceleration (PGA) values at the site for each maximum magnitude or maximum credible earthquake (MCE). These deterministic PGA values are calculated using the PGA attenuation relationship of Sadigh et al. (1997), which is based on strong motion records from California earthquakes.

**TABLE 4.1-2  
POTENTIAL LARGE EARTHQUAKE SOURCES WITHIN  
ABOUT 62 MILES OF AVPL SITE**

<b>Fault or Fault Segment<sup>1</sup></b>	<b>Approx. Closest Distance from AVPL (miles)</b>	<b>Maximum Magnitude (M<sub>w</sub>)<sup>2</sup></b>	<b>Estimated Median PGA at AVPL (g)<sup>3</sup></b>	<b>Estimated Average Return Period (years)</b>
San Andreas (1857 Rupture Segment)	0	7.8	0.77	206
Sierra Madre (San Fernando)	23	6.7	0.11	1000
San Gabriel	24	7.0	0.13	1264
Verdugo	27	6.9	0.08	1608
Raymond Fault	29	6.5	0.05	1541
Hollywood Fault	33	6.4	0.04	626
San Cayetano	38	7.0	0.05	150
Garlock Fault Zone (West)	38	7.3	0.07	1000
Cucamonga	39	6.9	0.06	650
Newport-Inglewood	40	7.1	0.05	1006
San Jacinto (San Bernardino)	42	6.7	0.04	100
Elsinore (Whittier)	44	6.8	0.04	641
Garlock (East)	46	7.5	0.06	1000
Lenwood-Lockhart	47	7.5	0.06	5000
Malibu Coast Fault	50	6.7	0.03	2908
Pleito	50	7.0	0.04	706
Helendale	50	7.3	0.05	5000
North Frontal Zone (Western)	54	7.2	0.04	1314
Palos Verdes	55	7.3	0.04	650
Elsinore (Glen Ivy)	55	6.8	0.03	340
Gravel Hills	58	7.1	0.03	5000

Source: Golder Associates

Notes:

- 1 Segment names, maximum magnitude and average return period after Petersen et al. (1996) and Cao et al. (2003).
- 2 Moment Magnitude (M<sub>w</sub>) relates the size of earthquake to the area and average displacement on the fault.
- 3 PGA(g) is median value calculated from Sadigh et al. (1997).

### The San Andreas Fault

The SAF and associated faults are a major component of the wide boundary zone between the Pacific and North American tectonic plates. The SAF is a continuous right-lateral strike-slip fault that strikes northwest throughout onshore southern and central California. High rates of historical seismicity and geomorphic and geologic evidence for coseismic rupture are known from many places along the SAF.

Petersen et al. (1996) divided the SAF into a number of discrete segments. Each segment is inferred to represent an independent earthquake source for the calculation of seismic hazard. The SAF near the AVPL is part of the Mojave segment that is about  $64 \pm 6$  miles ( $103 \pm 10$  km) long. The Mojave segment has an estimated average slip rate of  $30 \pm 7$  mm/year based on paleoseismic investigations summarized by WGCEP (1995).

Recent studies by Fumal et al. (2002) indicate that 14 large earthquakes have ruptured the Mojave segment of the SAF in the last 1500 years. The last surface rupture was during the Fort Tejon earthquake in 1857. The earthquake epicenter is estimated to have been near Cholame in Central California because the maximum horizontal slip of about 30 feet (9 m) occurred there. Several segments of the fault, including the Mojave segment ruptured in association with an earthquake. The 1857 fault rupture was more than 350 km (220 miles) long. Surface ruptures associated with the 1857 rupture occurred within the AVPL site and adjacent to the northeastern boundary of the site (see **Figure 4.1-1**, Geology and Fault Zones).

The SAF was identified and mapped within the AVPL site by Kleinfelder (1989a, b) and GCE (1999) (see **Appendix B-2**). GCE (1999) (see **Appendix B-2**) mapped surface traces of the SAF in detail within the AVPL site. They identified the surface rupture trace associated with the 1857 and earlier earthquakes. Their mapping included accurate location of the surface fault trace and a recommendation that refuse be set back at least 200 feet from the known fault trace.

### LIQUEFACTION POTENTIAL

Liquefaction is the loss of soil strength due to increases in pore pressure and loss of effective stress from strong ground shaking during an earthquake. Soils most susceptible to liquefaction are loose, saturated silty fine sands. The Seismic Hazard Zones map for Ritter Ridge Quadrangle, (California Geological Survey dated August 14, 2003) indicates that, based on regional geological and groundwater considerations, there is a potential for earthquake-related liquefaction of the unconsolidated Quaternary (Qal) soil deposits within the proposed project site, particularly along Anaverde Creek (see **Figure 4.1-1**, Geology and Fault Zones). It should be noted that the Seismic Hazard Zones map provides a “general guideline” for identifying potential liquefaction areas which should be further evaluated on a site-specific basis. The map is not a substitute for site-specific liquefaction analysis.

Two studies have been conducted at the AVPL to evaluate liquefaction potential in the ancillary facilities area of the site. Ganico (2001 and 2002) completed geotechnical investigations for the maintenance facility and an LNG fuel station at AVPL, respectively. These investigations and measurements of the depth of ground water in monitoring wells (e.g. SCE, 2004) indicate that ground water is at present about 70 feet (21 m) beneath the maintenance facility/service building area. Liquefaction is only considered a potential hazard if ground water is less than 50 feet (15 m) below ground surface. Ganico (2001 and 2002) considered the liquefaction potential for the ancillary facilities area of the AVPL to be low due to the lack of free groundwater.

**EXPANSIVE SOILS**

Gypsiferous claystone (Tac) was identified by Kleinfelder (1989a, b) in the central portion of the expansion (Landfill II) site. Claystone members of the Anaverde Formation crop out in the southern part of the proposed area for Landfill expansion. They also probably underlie the Quaternary age deposits immediately north of the known outcrops. The claystone and silty claystone portions of this member of the Anaverde Formation are highly expansive.

**SLOPE STABILITY**

The stability of the natural slopes within the AVPL was judged as satisfactory by Buena Engineers (1985). They observed no evidence of gross or deep-seated landslides. There was some evidence of surficial instability (less than 10 feet) of residual soils overlying the steeper Anaverde clay shale outcrops. They recommended that all residual soils be removed during landfill and slope grading. Buena Engineers also recommended the following permanent slope angles and heights for earth materials at the AVPL.

Earth Material	Maximum Slope (horizontal:vertical)	Maximum Height (feet)
Alluvium (Qal)	1.5:1	50
Upper gypsiferous claystone (Tac)	0.75:1	60-80
Lower red and gray arkose (Tar + Tag)	1:1	
quartz monzonite (qm) & granodiorite (gd)	1.5:1	

The 2002 City of Palmdale Adopted Building Code does not permit slopes greater than 2:1. Therefore the maximum slope allowable at the AVPL shall be 2:1.

Potential slope instability of the natural slopes is possible during severe seismic activity. California Geological Survey (2003) mapped three small areas within the AVPL site that may be susceptible to earthquake-induced landsliding. Their mapping was based on a regional assessment of rock type and slope angle, rather than site-specific investigations.

ViroGroup (1993) completed a slope stability analysis of the proposed landfill slopes during earthquake shaking. They found that seismically-induced displacements range from 0.2-1.5 feet under the design earthquake. They considered these displacements to be acceptable for landfill stability. They concluded that landfill slopes were stable under static and dynamic conditions.

A more detailed analysis of seismic stability of the landfill slopes was completed by Golder (2001), using the earthquake ground motions recommended by Pyke (2000). This analysis is provided in Appendix A. Golder (2001) determined that seismically-induced permanent deformations are expected in the upper slopes of the landfill. These deformations are acceptable provided provisions were made for the repair of the monolithic cover system after the earthquake.

**GROUNDWATER CHARACTERISTICS**

Although the geologic setting and characteristics of faults can have an effect on groundwater quality, these issues are not discussed in the geotechnical section. A detailed analysis and discussion is provided in Section 4.3, Hydrology and Water Quality.

### 4.1.3 THRESHOLD OF SIGNIFICANCE

Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a preliminary analysis of a proposed project to assess whether a Negative Declaration or an Environmental Impact Report should be prepared. The Environmental Checklist is used to determine if the proposed project would result in potentially significant adverse impacts. According to the Environmental Checklist, a project may be deemed to have a significant earth resources effect if it will:

- 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.
  - 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 soil, as defined in Table 18-1-B of the California Building Code (1994), creating substantial risk to life or property.

### 4.1.4 PROJECT IMPACTS

#### SEISMIC HAZARD AND FAULTING

##### Surface Fault Rupture

**Impact 4.1-1** Potential for surface fault rupture at the site along the trace of the San Andreas Fault Zone.

The SAF ruptured to the ground surface during the 1857 Fort Tejon Earthquake. This surface trace is clearly visible at the present ground surface and on pre-development aerial photographs of the AVPL (GCE, 1999) (see **Appendix B-2**). California Code of Regulations (CCR), Title 27, Division 2 require that Class III Landfill Units shall not be located on a known Holocene fault (Section 20260(d) Ground Rupture). A Holocene fault is a fault that is or has been active in the last 11,000 years. Waste containment structures for the proposed landfill expansion are setback from the mapped trace of the SAF as shown in Figure 3-11A setback meets the requirements of Title 27 CCR for Class III Landfills, and therefore no potential impacts associated with surface fault rupture are anticipated.

Mapping by the State of California (Bryant et al., 2002; California Geological Survey, 2003) indicates that the Alquist-Priolo Earthquake Fault Zone (AP Zone) is within the southwestern part and adjacent to the northeastern boundary of the AVPL site (**Figure 4.1-1**, Geology and Fault Zones). An AP Zone is a regulatory zone delineated by the State Geologist (Chief of the California Geological Survey) where active

faults may pose a surface rupture hazard for structures for human occupancy built within the zone. ~~No AP Zone is present within the 11-acre expansion area.~~

Kleinfelder, (1989a, b & GCE, 1999) evaluated the potential for rupture of the ground surface along the fault traces at the AVPL. Their studies used geological mapping, aerial photograph interpretation and trenching studies to identify and evaluate the Little Rock, Fault A, and Fault B for surface rupture potential. GCE (1999) (see **Appendix B-2**) showed that Fault B had been incorrectly identified as a fault, and a geological contact was the more probable interpretation of the observed geologic contacts. Based on the lack of offsets in overlying Quaternary soils, the Little Rock and Fault A were considered to show no evidence of surface displacement in the last 11,000 years. The Little Rock and Fault A are not active as defined in California and therefore no significant impacts to the proposed landfill expansion are anticipated.

Kleinfelder (1989a, b) considered that there may be some potential for sympathetic displacement on mapped and unmapped faults during a major earthquake on the SAF. However, data obtained in previous studies of excavations or trenches at the AVPL site does not support this conclusion.

### Earthquake Ground Shaking

**Impact 4.1-2** Potential for ground shaking resulting in significant impacts, including leachate migration, slope failure, seismic settlement, damage to drainage facilities, monitoring wells, the new frontage road, and other landfill installations.

Strong earthquake ground motions can be expected at the site from earthquakes caused by rupture of faults and other earthquake sources (**Tables 4.1-1** and **4.1-2**). Data in **Table 4.1-2** indicates that only three known active faults are estimated to produce median PGA values of more than 0.1g—the San Andreas, Sierra Madre and San Gabriel faults. However, other lower slip faults and background earthquake sources may generate PGA more than 0.1 g at the AVPL site.

Pyke (1994) and Pyke (2000) completed a site-specific deterministic analysis to develop design earthquake motions at AVPL. Their results provided estimates of PGA and spectral acceleration values, and recommended acceleration time histories. The design earthquake is a MCE on the San Andreas Fault with a moment magnitude ( $M_w$ ) of 8.0. Attenuation relations developed by Abrahamson and Silva (1997) were used to model the dependency of the maximum horizontal rock acceleration (MHA) and spectral acceleration on earthquake magnitude and distance for the  $M_w$  8 earthquake at a very close distance (i.e., <1 km) to the site. These analyses indicate that design earthquake ground motions should be 0.89g parallel to the fault and 0.74g perpendicular to the fault.

Under worst-case conditions, this or any other landfill site in seismically active southern California could experience a number of potentially significant adverse impacts including leachate migration, slope failure, seismic settlement, damage to drainage facilities, monitoring wells, and other landfill installations. While these impacts are, to a degree, unavoidable, the facility will be designed and operated to limit these potential adverse effects. The proposed landfill expansion and all ancillary support facilities will be designed in accordance with CCR, Title 27, Division 2, Seismic Requirements. With this regulation compliance and the implementation of **Mitigation Measures 4.1-1** and **4.1-2**, the impacts are less than significant.

Cut slopes developed for the new frontage road will be designed to meet applicable requirements of the City of Palmdale Public Works Department. No significant seismic related impacts are anticipated with the construction of the new road.

Any new structures for human occupancy will be designed and constructed to comply with the 2002 City of Palmdale Adopted Building Code. The AVPL site lies within Seismic Zone 4 of the 2001 California Building Code and 2002 City of Palmdale Adopted Building Code. New structures will be designed to comply with Seismic Zone 4 requirements.

## LIQUEFACTION

**Impact 4.1-3** Potential for liquefaction in the landfill expansion and proposed ancillary facilities area.

Liquefaction is the loss of soil strength due to increases in pore pressure and loss of effective stress from strong ground shaking during an earthquake. Most of the unconsolidated soils beneath the proposed landfill expansion will be removed. Previous evaluations of soils beneath the disposal area by GCE (2000) identified only limited thicknesses of unconsolidated soils (less than 6 feet). High recorded blow counts in the alluvial soils, and substantial confining loads under the refuse fill, suggest the potential for liquefaction under the landfill lining system is low. Liquefaction in this area will not affect implementation of the project. No significant impacts are anticipated.

The previous studies conducted for ancillary facilities south of the landfill (i.e. the maintenance building and LNG fuel station) by Ganico concluded that the potential for liquefaction is low because groundwater is more than 50 feet deep in these areas. Based upon these conclusions and because the proposed future facilities (i.e., the south desilting basin and Anaverde Creek erosion protection) are proposed within the same areas, no significant liquefaction impacts are anticipated.

## EXPANSIVE SOILS

**Impact 4.1-4** Potential for expansive soils in the expansion area where claystone and silty claystone portions of the Anaverde Formation occur.

Expansive soils have been identified within the AVPL, particularly within the upper gypsiferous claystone of the Anaverde Formation (Tac). Claystone and silty claystone members of this unit are highly expansive.

Construction of the landfill will result in removal of weathered expansive soils, isolation of surface water and substantial overburden pressure on any remaining potentially expansive soils. These design/construction procedures will result in expansive soils having no engineering significance to the proposed landfill expansion. Based upon the nature of the proposed landfill design/construction procedures, no significant impacts associated with expansive soils are anticipated.

## SLOPE STABILITY

**Impact 4.1-5** Potential for slope failure of the landfill slopes during severe seismic activity.

Potential slope instability of the natural and cut slopes is possible during normal conditions and during severe seismic activity. Slope instability effects can be minimized by appropriate site grading and design. For example, slopes will not exceed a 2:1 (horizontal:vertical) slope as required in the 2002 City of Palmdale Adopted Building Codes. Detailed assessment of proposed cut and fill slopes during earthquake shaking has been completed by ViroGroup (1993). Their study identified that displacements

and permanent deformations can be expected during the most severe earthquake shaking, but these deformations are acceptable when the slopes are cut and filled in accordance with CCR, Title 27, Division 2, Seismic Requirements. With implementation of **Mitigation Measures 4.1-1** and **4.1-2** and compliance with California Code of Regulations Title 27 Division 2 and the 2002 City of Palmdale Adopted Building Codes, the impacts are less than significant.

Potential slope instability of the assumed landfill slopes is also possible during severe seismic activity. Slope instability effects can be minimized by appropriate site grading and landfill design. Detailed assessment of proposed landfill slopes has been completed by Golder (2001). This study identified that displacements and permanent deformations of the final cover can be expected during the most severe earthquake shaking. Provision for the repair of the landfill cover system is provided through the Financial Assurance requirements of Section 22210 of California Code of Regulations Title 27.

#### 4.1.5 CUMULATIVE IMPACTS

**Impact 4.1-6** Potential earth resources cumulative impacts.

Many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction development projects and/or by the incorporation of project design measures as noted in this table. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

The scope of analysis for cumulative impacts for earth resources is defined as the list of cumulative projects, as outlined in Section 3.5. Generally, geotechnical issues are site-specific and will be limited to within the development boundaries of the project site. These impacts would not combine with other projects in the area to create cumulative considerable impacts. Cumulative impacts associated with grading and erosion are discussed in Section 4.3.5. Additionally, based on the 1992 certified EIR for Landfill II findings, no cumulative impacts were identified. The cumulative impacts associated with proposed landfill expansion/consolidation project would be less than significant.

#### 4.1.6 MITIGATION MEASURES

The 1992 Certified EIR lists 10 mitigation measures for geology and soil conditions at the AVPL. The certification of the EIR preceded the promulgation of the 1997 CCR Title 27 regulations and the 2002 City of Palmdale Adopted Building Code. These regulations and codes prescribe detailed engineering design procedures for approved landfills and associated facilities. Thus, many of the previously-identified mitigation measures must be undertaken to comply with CCR Title 27 and City of Palmdale Adopted Building Codes. Thus, many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

The proposed landfill and all ancillary support facilities shall be designed in accordance with CCR, Title 27, Division 2, Seismic Requirements. In accordance with these requirements any waste containment structures will not be placed on Holocene faults (e.g. San Andreas Fault). Any new structures for human occupancy will be designed and constructed to comply with the 2002 City of Palmdale Adopted Building Code. The AVPL

site lies within Seismic Zone 4 of 2002 City of Palmdale Adopted Building Code. New structures for human occupancy will be designed to comply with Seismic Zone 4 requirements.

Design and construction measures (i.e., removal of weathered expansive soils, isolation of surface water and substantial over burden pressure on any remaining expansive soils) shall be implemented.

All slopes and pertinent attendant facilities shall be designed to applicable CCR, Title 27, Division 2, Seismic Requirements. Provision for the repair of the landfill cover system is provided through the Financial Assurance requirements of Section 22210 of CCR, Title 27.

**4.1-1** Prior to the issuance of the Waste Discharge Requirements (WDR's) and approval of the Joint Technical Document (JTD) for the project by the Lahontan Regional Water Quality Control Board, the proposed design and supporting engineering analysis of the landfill's containment structures shall be reviewed and approved by the RWQCB to ensure the design complies with State regulations pursuant to California Code of Regulations, Title 27, Division 2. The applicant shall demonstrate to RWQCB satisfaction that the landfill liner and leachate collection system have been designed to preclude failure and will resist the maximum seismic shaking expected at the site based on risk assessment. Further, the design shall demonstrate that the final slopes will be stable under both static and dynamic conditions to protect public health and safety and prevent damage to the facility such that no significant impact to the environment will occur. The liner design, as proposed in Appendix B of the EIR, shall be modified or refined if necessary based on final engineering analysis and review by the RWQCB to ensure that the approved landfill design will mitigate impacts to a less than significant level.

The landfill containment structures shall be constructed as approved by the RWQCB. During ongoing landfill construction, geologic mapping of rock and soil exposed in future excavations shall be completed during ongoing landfill construction. Information on rock type and any exposed folds, fractures and folds will be collected. Permanent cut slopes shall be observed by a qualified geologist to check for adverse bedding, joint patterns, or other geologic features that may impact the approved landfill design. Where necessary, the permanent cut slopes shall be constructed to ensure their stability. The geologic maps will be included with the construction reports for each portion of the constructed landfill. The reports will be submitted to the LEA and Lahontan RWQCB.

**4.1-2** Earth moving operations shall be observed, and the placement of fill shall be tested by a qualified geotechnical engineer during ongoing landfill operations. Observation and testing will ensure fill placements are consistent with the approved landfill design.

#### **4.1.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION AND REGULATION COMPLIANCE AND/OR PROJECT DESIGN MEASURES**

The implementation of mitigation measures and compliance with CCR, Title 27 will reduce project-specific impacts to seismic hazards and slope stability to a less than significant level. Based upon site specific analysis and proposed construction/design measures, no significant impacts are anticipated to liquefaction potential or expansive soils. No cumulative impacts have been identified.

## 4.2 AIR QUALITY

### 4.2.1 INTRODUCTION

An updated air quality analysis was conducted by Giroux and Associates to assess project related impacts on the air quality on a local and regional basis. The results of the study are included in a report, which is contained in **Appendix C** of this document. In preparing this report, previous air quality studies for the 1992 certified EIR for Landfill II and adopted Mitigated Negative Declaration were reviewed and incorporated as necessary. The findings of the report are summarized in this section.

Subsequent to the preparation of this Draft EIR in December 2005, the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32: California Health and Safety Code Division 25.5, Section 38500, et.seq., or AB32) was passed. The City of Palmdale decided to incorporate a greenhouse gas (GHG) emission and climate change analysis (see **Appendix C-1**) in this Draft EIR Amendment within this Section 4.2, Air Quality.

### 4.2.2 EXISTING CONDITIONS

#### METEOROLOGY/CLIMATE

The climate of the Antelope Valley is characterized by hot summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. The most important weather pattern is associated with the funneling of the daily onshore sea breeze through Soledad Canyon into the upper desert to the north of the heavily developed portions of the Los Angeles Basin. This daily airflow brings polluted air into the area late in the afternoon from late spring to early fall. This transport pattern creates both unhealthful air quality as well as destroying the scenic vistas of the mountains surrounding the Antelope Valley.

Temperatures in the project area average a very comfortable 61 degrees Fahrenheit year-round, but it gets very hot on summer afternoons (close to 100 degrees) and quite cool on winter mornings (around 30 degrees). About 100 days per year reach 90 degrees, while about 60 days drop to slightly sub-freezing temperatures. The warm summer afternoons are quite dry and the breezes are moderate such that physical comfort is good despite the warm weather.

Rainfall in the Antelope Valley area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April with summers often completely dry except for occasional widely scattered summer thundershowers. The Antelope Valley is located in a transition area between the semi-arid conditions of the Los Angeles Basin and the completely arid portions of the Mojave Desert.

Winds blow primarily from south to north and from west to east in response to the regional pattern of airflow from the cool ocean to the heated interior. Winds as well as temperature inversions control the rate and direction of pollution dispersal. These inversions, in conjunction with calm winds, trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily development coastal areas of Southern California, there is not enough traffic in inland valleys to cause any winter air pollution problems. Thus, while summers are periods of hazy skies

and unhealthful air, winter is often a period of spectacular visibility and excellent air quality in the Antelope Valley.

**AMBIENT AIR QUALITY STANDARDS (AAQS)**

In order to gauge the significance of the air quality impacts of the proposed project, those impacts, together with existing background air quality levels, must be compared to the applicable ambient air quality standards. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare.

National AAQS were established in 1971 for six pollution species with states retaining the option to add other pollutants, require more stringent compliance, or to include different exposure periods. Because California had established AAQS several years before the federal action and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is a considerable difference between state and national clean air standards. Those standards currently in effect in California are shown in **Table 4.2-1**.

The Federal Clean Air Act Amendments (CAAA) of 1990 required that the US Environmental Protection Agency (EPA) review all national AAQS in light of all current health data. EPA was charged with modifying existing standards or promulgating new ones were appropriate. EPA subsequently developed standards for chronic ozone exposure (8+ hours per day) and for very small diameter particulate matter called (PM-2.5). New national AAQS were adopted on July 17, 1997. California standards for PM-10, which includes PM-2.5, are more stringent than the federal PM-2.5 standard.

In November 2002 EPA redesignated numerous airsheds, including the Mojave Desert Air Basin, as “non-attainment” for the “new” eight-hour ozone standard. The redesignation was completed earlier this year. The Palmdale area exceeds the federal eight-hour ozone standard with a much greater frequency than the hourly standard. The attainment of the eight-hour ozone standard will occur further in the future than the eventual attainment of the one-hour standard.

**TABLE 4.2-1  
AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	0.12 ppm (235 µg/m <sup>3</sup> )	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	--		0.08 ppm (157 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		50 µg/m <sup>3</sup>		
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	No Separate State Standard		65 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	15 µg/m <sup>3</sup>		

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
<b>Carbon Monoxide (CO)</b>	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 µg/m <sup>3</sup> )	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 µg/m <sup>3</sup> )		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		--	--	
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	Annual Arithmetic Mean	--	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m <sup>3</sup> )		--		
<b>Lead</b>	30-day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	--	--	--
	Calendar Quarter	--		1.5 µg/m <sup>3</sup>	Same as Primary Standard	High Volume Sampler and Atomic Absorption
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	Annual Arithmetic Mean	--	Ultraviolet Fluorescence	0.030 ppm (80 µg/m <sup>3</sup> )	--	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (365 µg/m <sup>3</sup> )	--	
	3 Hour	--		--	0.5 ppm (1,300 µg/m <sup>3</sup> )	
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )		--	--	
<b>Visibility Reducing Particles</b>	8 Hour	Extinction coefficient of 0.23 per kilometer visibility of 10 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		
<b>Sulfates</b>	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
<b>Hydrogen Sulfide</b>	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
<b>Vinyl Chloride</b>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			

Source: Giroux & Associates

A more stringent statewide PM-2.5 standard was adopted on June 20, 2002. This standard is more of a goal in that it does not have specific attainment planning requirements like the federal clean air standard. Violations of the more stringent State PM-2.5 standard will be a constant reminder that major progress needs to be made to protect the health of those citizens most sensitive to airborne small-diameter particulate pollution.

**BASELINE AIR QUALITY**

Existing levels of ambient air quality and historical trends and projections in the project area are well documented from measurements made on behalf of the Antelope Valley Air Pollution Control District (AVAPCD). The Antelope Valley is in the Mojave Desert Air Basin (MDAB). Until 1997, the Los

Angeles County portion of the Antelope Valley was under the regulatory authority of the South Coast Air Quality Management District (SCAQMD). With the creation of the AVAPCD, much of the technical support (monitoring, enforcement, etc.) was transferred to the Mojave Desert AQMD. In 2002, the AVAPCD became the Antelope Valley Air Quality Management District (AVAQMD). The Mojave Desert AQMD still retains its role of technical support.

The South Coast and/or Mojave Desert AQMDs have operated an air quality monitoring station in Lancaster for a number of years. This station is considered representative of most of the developed areas of the Antelope Valley. Measured air pollutants include ozone, carbon monoxide, nitrogen oxides, and respirable particulates. These measurements have shown that photochemical smog levels (mainly ozone) are high in summer, and that dust levels may exceed particulate standards throughout the year, but that primary vehicular pollutant levels such as carbon monoxide, nitrogen dioxide or lead are very low in the Antelope Valley area. **Table 4.2-2** summarizes the last seven years of published data for the Lancaster station from 1997-2003. While ozone levels continue to exceed the California and national hourly standards and the California 24-hour suspended particulate (PM-10) standard is often exceeded, all other pollutants, particularly those related to local source emissions, do not exceed their allowable levels. The data in **Table 4.2-2** suggests that whatever air quality problems are present in the project vicinity, they are mainly due to the transport of pollutants into the area from outside sources. These data also suggest that the Antelope Valley can accommodate a reasonable level of growth without threatening the continued attainment of standards such as nitrogen oxides or carbon monoxide. Such growth may; however, exacerbate existing violations of standards for ozone and particulates.

Meteorological variability produces a corresponding year-to-year change in ozone levels that somewhat obscures long-term trends. Whereas 1999 was the “cleanest” ozone year, hourly maxima in 2002 to 2003 of 0.16 ppm were similar to those found 10 years ago. There were more violations of the state ozone standard in 2002 than any year since 1995. While there has been substantial air quality improvement within the last two decades, the Antelope Valley will apparently experience occasional unhealthy air quality well into the current decade.

**TABLE 4.2-2  
ANTELOPE VALLEY MONITORING SUMMARY  
(Days Per Year Exceeding Standards and Maximum Concentrations)**

<b>Pollutant/Standard</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
<b>Ozone</b>							
1-hour > 0.09 ppm	14	24	1	35	37	46	40
1-hour > 0.12 ppm	0	8	0	2	3	5	4
8- Hour > 0.08 ppm	7	18	0	28	24	38	33
Max 1-hour Conc. (ppm)	0.12	0.16	0.10	0.14	0.15	0.16	0.16
<b>Carbon Monoxide</b>							
1-hour > 20. ppm	0	0	0	0	0	0	0
8- Hour > 9. ppm	0	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	6	5	7	6	6	-	-
Max 8-hour Conc. (ppm)	4.0	3.6	5.4	4.3	3.3	2.2	1.9
<b>Nitrogen Dioxide</b>							
1-hour > 0.25 ppm	0	0	0	0	0	0	0
Max 1-hour Conc. (ppm)	0.07	0.08	0.08	0.06	0.08	0.10	0.07
<b>Inhalable Particulates (PM-10)</b>							
24-Hour > 50 µg/m <sup>3</sup>	2/59	2/52	2/58	-	-	2/58	-
24-Hour > 150 µg/m <sup>3</sup>	0/59	0/52	0/58	-	-	0/58	-

Pollutant/Standard Ozone	1997	1998	1999	2000	2001	2002	2003
Max. 24-Hr. Conc. ( $\mu\text{g}/\text{m}^3$ )	54.	80.	85.	-	-	73.	-
<b>Ultra-Fine Particulates (PM-2.5)</b>							
24-Hour > 65 $\mu\text{g}/\text{m}^3$	-	-	0/113	0/113	0/116	0/107	-
Max. 24-Hour Conc. ( $\mu\text{g}/\text{m}^3$ )	-	-	47.6	36.0	35.0	24.0	-

Source: California ARB (2000); Voyager CD, PTSD-00-015-CD; Lancaster Monitoring Station and [arb.ca.gov/adam/cgi-bin/adamtop4b](http://arb.ca.gov/adam/cgi-bin/adamtop4b).

-- = No data available, or not yet reported (2003).

**AIR QUALITY PLANNING**

The Federal Clean Air Act and the California Clean Air Act have established timeframes for air quality improvement in “non-attainment” areas such as the Antelope Valley. The United States Environmental Protection Agency (USEPA) designated the Southeast Desert Modified Air Quality Management Area (Southeast Desert Modified AQMA) as non-attainment for ozone NAAQS pursuant to the provisions of the Federal Clean Air Act (FCAA). The Antelope Valley is included in the Southeast Desert Modified AQMA. The California Air Resources Board has also designated the Antelope Valley non-attainment for ozone California Ambient Air Quality Standards (CAAQS) pursuant to the provisions of the California Clean Air Act (CCAA). The South Coast Air Quality Management District (SCAQMD) adopted attainment plans for the Antelope Valley when the region was under its jurisdiction. The most recent such plan that was approved by USEPA is the 1994 version of the AVAQMD Air Quality Management Plan (AQMP).

The Antelope Valley Air Quality Management District now has jurisdiction over the Antelope Valley. The AVAQMD has reviewed and updated all elements of the ozone plan. The Antelope Valley will be in attainment of the NAAQS for ozone by the required year, 2007. The Antelope Valley will also show significant progress towards attainment of the CAAQS for ozone standard by that year.

A draft plan has been developed which addresses all existing and forecast ozone precursor-producing activities within the Antelope Valley through the year 2007. The plan includes all necessary information to allow general and transportation conformity findings to be made within the Antelope Valley.

The planning process does make some allowances when an airshed such as the Los Angeles County portion of the Mojave Desert Air Basin is downwind of an extreme non-attainment airshed such as the South Coast Air Basin (SCAB). Air pollution control measures embodied in clean air plans for the SCAB therefore are not equally effective in the downwind receptor airshed such as the Antelope Valley. However, it was believed that if air pollution control was excessively relaxed within the Mojave Desert since its air quality fate was controlled by the SCAB, the Antelope Valley would become a haven for polluters seeking to escape the more restrictive SCAB. Required air quality controls are therefore almost identical in Lancaster as in Los Angeles.

**GREENHOUSE GASES AND CLIMATE CHANGE**

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they allow for the transmission of short wave solar radiation but retard the re-radiation of long wave (infra-red) radiation, much like a greenhouse. The principal GHGs include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydroflouorocarbons (HFC), perflouorocarbons (PFC), and sulfur hexafluoride (SF<sub>6</sub>). Water vapor (H<sub>2</sub>O) is also a heat trapping gas, but is normally not included among “standard” (Kyoto Protocol) GHGs.

The accumulation of GHGs has been implicated as a driving force for global climate change. Climate change is commonly used interchangeably with “global warming” and the “greenhouse effect.” Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth’s climate caused by natural fluctuations and anthropogenic activities that alter the composition of the global atmosphere.

While the primary GHGs in the atmosphere are naturally occurring, the presence of dramatically increased levels of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O is largely the result of human activities that have accelerated that rate at which these compounds occur within the earth’s atmosphere. CO<sub>2</sub> is the “reference gas” for climate change, meaning that emissions of GHGs are typically reported in “carbon-dioxide-equivalent” (CO<sub>2</sub>E) measures. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from biological decay associated with organic materials. Other GHGs, which have even greater heat-absorption potential than CO<sub>2</sub>, are generated in certain industrial processes. There is international scientific consensus that human-caused increases in GHGs have and will continue to contribute to global warming, although there is uncertainty concerning the magnitude and rate of the warming. The effects of climate change on the natural environment in California may include, but are not limited to, sea level rise, extreme heat conditions that could last longer and become more frequent, reduced snowpack, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, adverse impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity.

The California Air Resources Board (CARB) has recently (2009) published its most recent (2006) inventory of GHG gases in California. The 2006 inventory is calculated as 483.9 million metric tons (MMT) per year. The ARB estimates that transportation is the source of 39 percent of the state’s GHG emissions, followed by electricity generation (both in-state and out-of-state) at 22 percent and industrial sources at 21 percent. All other sources comprise 18 percent of the total.

## **CLIMATE CHANGE AND GHG EMISSIONS REGULATORY FRAMEWORK**

### **Federal**

With respect to GHGs, the U.S. Supreme Court ruled on April 2, 2007 (*Massachusetts v. EPA*) that CO<sub>2</sub> is an air pollutant as defined under the Clean Air Act (CAA), and that the U.S. EPA has the authority to regulate GHG emissions. If the EPA Administrator finds that the six key greenhouse gases threaten the public health and welfare through climate change, he makes a finding of adverse impact. This is called an endangerment finding. After making this finding, the Administrator must find that new motor vehicles contribute to GHG levels and thus threaten the climate. This is called a “cause or contribute” finding. On April 24, 2009, the EPA released a proposed endangerment finding and cause or contribute finding in the Federal Register. The final Endangerment Finding was published in December 2009.

Concurrently with the development of the endangerment finding, EPA published mandatory reporting rules for major GHG sources (74 FR 16488) that would mandate GHG emissions reporting from thousands of sources, including certain landfills. Draft rules to incorporate GHG emissions into federal Title V and Prevention of Significant Deterioration (PSD) programs have also been developed.

It is believed that any EPA regulation of GHGs will be legally challenged by regulated industries and ultimately superseded by congressional legislation. The Obama Administration wants the United States to be an active participant in the U.N. Global Summit on climate change in Copenhagen in December

2009. However, the Administration's efforts are currently focused on domestic healthcare and on Middle East foreign policy. Congressional action on GHGs may be hampered by the slumping economy. EPA regulation may be the only reasonably anticipated federal GHG action.

Environmental groups are continuing to exert GHG control pressure on stationary sources (the EPA finding initially only covers motor vehicles). The Second Circuit Court on September 30, 2009, allowed a "public nuisance" lawsuit against coal-fired power plants to proceed based upon GHGs. Creation of national GHG policies through federal legislation is perceived as necessary in order to unify the fragmented efforts being developed by various administrative or judicial initiatives.

### **California**

#### Senate Bill 1771

Senate Bill (SB) 1771 (Sher), adopted in September 2000, required the Secretary of the Resources agency to establish a nonprofit public benefit corporation, to be known as the "California Climate Action Registry," (CCAR). This agency was established for the purpose of administering a voluntary GHG emissions registry to record and register voluntary greenhouse gas reductions that have been achieved since 1990. In 2008, the CCAR became a voluntary membership agency known as the California Action Reserve (CAR) that has no regulatory control or over-sight.

The CAR provides leadership on climate change by developing and promoting credible, accurate and consistent GHG reporting standards and tools for organization to measure, monitor, and reduce their GHG emissions consistently across industry sectors and geographical borders, and subject to third-party verification. The CAR has developed a General Reporting Protocol (GRP, 2009) to guide businesses and government agencies to participate in the registry. The GRP guides participants through the rules and methodologies for voluntary reporting in the web-based system called the Climate Action Registry Reporting Online Tool (CARROT). Waste Management is a member of the Registry, and was designated a "Climate Action Leader" for developing a company-wide GHG inventory. The CAR has developed and recently updated a landfill-specific protocol entitled, "Landfill Project Protocol, Collecting and Destroying Methane from Landfills, Version 2.1", dated October 14, 2009.

#### Assembly Bill 1493

In 2002, then-Governor Gray Davis signed Assembly Bill (AB) 1493 (Payley 2002). AB 1493 required the CARB to develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicle and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the state." CARB adopted regulations in 2004 and applied to the USEPA for a waiver under the federal Clean Air Act to implement the regulation. The Payley regulations incorporate both performance standards and market based compliance mechanisms. In addition to delivering GHG reductions, the standards will benefit California drivers by ultimately saving them an estimated \$30 each month in avoided fuel costs (CARB Draft Scoping Plan, p. 20 [June 2008]).

In December 2007, USEPA denied California's waiver request. California, among other states, is challenging that denial in federal court. AB 32, discussed below, states that if the Payley regulations do not remain in effect, CARB shall implement alternative regulations to control mobile sources to achieve equivalent or greater GHG reductions (Health and Safety Code Sec 38590).

On June 21, 2001, CARB published its Proposed Early Actions to Mitigate Climate Change in California. The Early Action Plan describes recommendations for discrete early action measures to reduced GHG emissions (CARB 2007). These measures will become part of California's strategy for achieving GHG reductions under AB 32. One of the sources for the potential measures includes the CAT Report. Three new regulations have been adopted as "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-143a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture (CARB 2007). The discrete early action measures must be implemented by January 1, 2010. CARB estimates that by 2020, the reductions from those three measures would be approximately 13-26 million metric tons per year of carbon dioxide equivalent.

The California Integrated Waste Management Board (CIWMB) recently published a guidance document on reducing GHG emissions from landfills. This report from the CIWMB is designed primarily as a guidance document for landfill operators and regulators. It provides recommended technologies and management practices for reducing landfill gas (LFG) emissions through improved landfill design, construction, operation and closure. The report evaluates the effects that changes in landfill practices may have in reducing LFG emissions. It includes discussions on each technology and management options for applicability, cost and overall effectiveness in reducing greenhouse gas emissions. Waste Management endeavors to employ the practices outlined in this report at the Antelope Valley landfill to minimize GHG emissions.

Executive Order S-3-05 (2005)

In recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger announced the following GHG emission to reduction targets, as established through Executive Order S-3-05: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 (2006)

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Section 38500, et seq., or AB 32). It required the CARB to design and implement emission limits, regulations, and other measures to reduce statewide GHG emissions to 1990 levels by 2020 (representing a 25 percent reduction in emissions). The reduction would be accomplished through an enforceable statewide cap on global warming emissions and reduction measures that would be phased in starting by 2010. It also included a requirement for discrete early action measures that could be adopted as regulations and made effective by 2010. Some proposed early action measures will require new legislation to implement, some will require subsidies, some have already been developed, and some will require additional effort to evaluate and quantify. AB 32 primarily establishes a timeframe for the CARB to adopt emissions limits, rules, and regulations, but does not provide thresholds or methodologies for analyzing a project's impacts regarding global climate change.

GHG emissions controls from landfills is one of the early action measures in AB-32 aimed at capturing methane from landfills throughout the state with an anticipated reduction of 1.5 million tons of GHGs per year. The adoption of the landfill rule in June 2009 was the final "early action measure" required under AB 32. The landfill regulation was the second biggest emissions reduction regulation, second only to the Low Carbon Fuel Standard.

CARB Scoping Plan (2008)

Pursuant to AB 32, the CARB adopted the Scoping Plan in December 2008, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO<sub>2</sub>E, or approximately 30 percent from the state's projected 2020 emission level of 596 MMT of CO<sub>2</sub>E under a business-as-usual scenario, and a reduction of 42 MMT CO<sub>2</sub>E, or almost 10 percent, from 2002-2004 average emissions.

The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reductions are expected to be achieved from improving emission standards for light-duty vehicles (estimated reductions of 31.7 MMT CO<sub>2</sub>E), implementation of the Low Carbon Fuel Standards (15.0 MMT CO<sub>2</sub>E), energy efficiency measures in buildings and appliances and the widespread development of combined heat and power system (26.3 MMT CO<sub>2</sub>E), and a renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>E). CARB has not yet determined what amount of GHG reductions from local government operations will be recommended; however, the Scoping Plan does state that land use planning and urban growth decisions will play an important role in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. The CARB is also developing an additional protocol for community emissions. CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined (CARB, 2008). With regard to land use planning, the Scoping Plan expects approximately 5.0 MMT CO<sub>2</sub>E will be achieved associated with implementation of SB 375, which is discussed further below.

Other Bills and Executive Orders

There are several other senate bills and executive orders that have been passed over the past several years and they relate to reducing GHG emissions from electricity generation (Senate Bills 1078, 107, and 1368, Executive Order S-14-08); establishing guidelines for mitigating GHG emissions or the effects of GHG emissions under CEQA by 2010 (Senate Bill 97); aligning regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation through adoption of a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS) (Senate Bill 375); providing land use planning guidance related to sea level rise and other climate change impacts (Executive Order S-13-08); and establishing a Low-Carbon Fuel Standard (LCFS) and coordinating actions of the California Energy Commission, the CARB, the University California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels.

**4.2.3 THRESHOLD OF SIGNIFICANCE**

Air quality impacts are considered "significant" if they cause clean air standards to be violated where they are currently met, or if they measurably contribute to an existing violation of standards. Any substantial emissions of air contaminants for which there is no safe exposure, or nuisance emissions such as dust or odors, would also be considered a significant impact.

Appendix G of CEQA Guidelines offers the following five tests of air quality impact significance. A project would have a potentially significant impact if it:

- a. Conflicts with or obstructs implementation of the applicable air quality plan.
- b. Violates any air quality standard or contributes substantially to an existing or projected air quality violation.
- c. Results in a cumulatively considerable net increase of any criteria pollutants 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. Exposes sensitive receptors to substantial pollutant concentrations.
- e. Creates objectionable odors affecting a substantial number of people.

*Primary Pollutants:* Air quality impacts generally occur on both local and regional scales. Near an individual source of emissions or a collection of sources such as a crowded intersection or parking lot, some pollutants are emitted that require no additional chemical reactions in order to be unhealthy to breathe. Carbon monoxide (CO) is an example of such a pollutant. These are called “primary pollutants.” Primary pollutant impacts can generally be evaluated directly in comparison to appropriate clean air standards. Violations of these standards where they are currently met, or a measurable worsening of an existing or future violation, would be considered a significant impact.

*Secondary Pollutants:* Many mobile source air pollutants require additional transformation to become unhealthful for people (i.e., ozone). That conversion process occurs several hours later and miles away. Their impact occurs regionally far from the source.

The individual regional impact of secondary pollutants is immeasurably small because of dilution that occurs over many miles of travel. Analysis of significance of such emissions is thus based on a specified amount of emissions (pounds, tons, etc.) even though there is no way to translate those emissions directly into a corresponding ambient air quality impact.

## **GHG EMISSIONS ANALYSIS**

For purposes of this analysis, the incremental contribution of the proposed project to global climate change would be considered significant if it would:

- a. Conflict with or obstruct implementation of the goals or strategies of Executive Order S-3-05 of the California Global Warming Solutions Act of 2006
- b. Result in increased exposure to one or more of the potential adverse effects of global warming indentified in the California Global Warming Solutions Act of 2006 (Health & Safety Code, sec 38501, sub (a) or
- c. Exceed CARB’s proposed mandatory reporting threshold of 25,000 metric tons of CO<sub>2</sub>E per year. If the California Market Advisory threshold for industrial sources of 10,000 MT/year were to be exceeded, and enhanced level of GHG mitigation is considered warranted.

### **4.2.4 PROJECT IMPACTS**

#### **PROJECT BACKGROUND**

The proposed project consists of combining two existing permitted adjoining disposal units into one contiguous landfill and expanding the total refuse footprint by 11 acres. The project also proposes to change the 1993 CUP approved daily disposal volume of 1,800 tons per day (tpd) to 3,600 tpd. These

tonnages exclude recyclables. The traffic and mobile source air quality analysis must consider maximum tonnage figures which include refuse to be disposed of as well as recyclables and/or materials for alternative daily cover or beneficial use. The average daily “total” volume accepted (i.e., waste for disposal and recyclables) is projected to be 3,613 tpd; however, this volume of waste and recyclables may peak to 5,548 tpd.

During the intake of concrete, rubble and other inert demolition debris, and during the import of soils that are suitable for use as daily cover, a short-term peak in site-related traffic may occur. A peak disposal volume of 5,548 tpd was considered as a possible maximum disposal rate. Because such materials are transported by larger capacity trucks the increase in volume of material handled is accommodated by the additions of 270 daily trips (135 in/135 out). A peak increase of 54 percent in volume (5,548 vs. 3,613 tpd) thus generates only a 20 percent increase in daily traffic (1,594 vs. 1,324 ADT).

Decomposition of municipal solid waste (MSW) produces landfill gas (LFG). LFG is comprised primarily of carbon dioxide and methane. About 2 percent of the LFG is comprised of complex organic materials that are considered smog precursors and give landfills a characteristic decay odor. An extended landfill life will increase the LFG production during the operational lifetime and after landfill closure. LFG is collected and burned in an on-site disposal system. Any possible air quality impact from project approval would derive mainly from the un-captured (“fugitive”) fraction of increased LFG associated with an extended landfill life.

Although the CUP-approved daily tonnage for Landfill II is 1,800 tpd of landfilled material and 3,564 total tpd including recyclable, existing operations are well below this level. Much of the disposal increase from a current average disposal volume of 1,372 tpd to an average 3,613 tpd (MSW plus various recyclable materials) will result from a shift from individual collection vehicles (“packer” trucks) to tractor/trailers from various transfer stations. The volume of traffic will not be directly proportional to disposal volume because the tractor/trailer hauls three times as much refuse per trip as does the collection truck. It should be noted that the change or increase in transfer trucks is 71 loads per day, or 142 in and out trips. These trucks will all use the State Route 14 Freeway.

The trip lengths outlined below were developed in conjunction with the City’s traffic engineer. The project traffic is expected to have an average one-way trip length of 5.5 miles for trips originating in the City and 15 miles for trips originating outside of the City. It is approximately 15 miles to Lancaster going north on the State Route 14 Freeway, and approximately 15 miles to the Antelope Valley Air Pollution Control District boundary (i.e., limit of Mojave Desert Air Basin) going south on the State Route 14 Freeway.

For purposes of presenting a “worst-case” air quality impact analysis, the existing daily traffic (416 truck trips) and disposal volume (1,372 tpd) was treated as the baseline, and disposal volume was presumed to instantaneously jump by (2007 assumed for analysis) to the maximum allowable disposal volume of 5,548 tpd which equates to 1,134 truck trips. Based on Waste Management’s past experiences at other landfills, the transition will actually occur over multiple years.

The equipment needed to process the increased disposal volume will not be measurably different from existing on-site, off-road equipment. The size of the “working face” and associated cover material needed at the end of each workday is similar for each scenario (existing vs. build-out). One extra compactor is presumed necessary to compact the refuse prior to placement of daily cover. The existing landfill operating equipment is not operating at a very high capacity/power level. Increased disposal rates

will thus be accommodated by an increased percentage of equipment utilization, but not with any substantial increase in the numbers of equipment sources.

An increase in traffic and a small increase in on-site equipment was evaluated as part of project impacts even though the expansion to the 3,564 total tpd was previously analyzed for CEQA purposes and subsequently approved by the County (CUP #93041). The increase to 5,548 tpd peak event is a “new” impact.

### **AIR QUALITY PLANNING**

The rules and regulations of the AVAQMD are a part of the currently adopted and proposed updated clean air plans. Compliance with such rules insures that the landfill operation conforms to the air plan. The facility is in full compliance with AVAQMD Rule 1150.1 governing control of gaseous emissions from landfills, and with Rule 402 prohibiting creation of a nuisance from odor or duct. On-site emissions sources are consistent with all emissions control requirements.

However, many landfill-related emissions derive from trucks that haul refuse to the site. The landfill must be sized to accommodate the service demand of the region, or else the trash must be hauled out of the valley with even greater indirect emissions. Refuse disposal capacity must be consistent with the forecast growth of the service region. When capacity and growth are reasonably well matched, the landfill is considered growth-accommodating and not growth-inducing.

The California Air Resources Board’s diesel reduction program for refuse hauling fleets will reduce DPM emissions starting in 2005 by 75% over the next decade and by 85% by 2020. The landfill has recently constructed a Liquefied Natural Gas (LNG) fueling station for waste collection and public vehicles which will assist in reducing the number of diesel fuel engines and vehicles in the future. AVPL currently has converted 14 MSW collection vehicles to LNG. Thus, approximately 10% of the AVPL waste hauling vehicles are currently fueled by LNG.

Based on the above discussion, the future growth demand estimates, and the remaining life expectancy discussions (Section 3.3), the proposed project is growth-accommodating and would not conflict with or obstruct implementation of the 1994 AVAQMD Air Quality Management Plan (AQMP).

### **PROJECT-RELATED GHG EMISSIONS**

Four specific sources of increased GHG emissions are associated with the proposed landfill modifications. The proposed increase in daily disposal limits to 3,613 tons per day will require a larger number of disposal vehicles to bring material to the landfill. Exhaust emissions from disposal vehicles will increase. Large capacity haul trucks will be used to take away sorted recyclable materials. Additional heavy equipment will be required to spread, compact and cover the residual refuse, along with increased employees to operate the equipment.

Once the non-recycled materials are entombed, the organic fraction begins to decompose. The process rapidly changes from aerobic (oxygen sufficient) to anaerobic (oxygen deficient). In the dry climate of the Antelope Valley, the decomposition process is very slow. On average, approximately one-third of the organic fraction of refuse is still present 50 years after disposal. The byproduct of organic breakdown by anaerobic bacteria is primarily CO<sub>2</sub>, CH<sub>4</sub>, and H<sub>2</sub>O, which are the primary ingredients of LFG. These are all GHGs. The typical composition of “dry” LFG is around 45 percent CH<sub>4</sub>, 40 percent CO<sub>2</sub>, and 15

percent other gases, particularly inert nitrogen (N<sub>2</sub>). The source test at the Antelope Valley Landfill in March 2006, found the following breakdown within the LFG collection system:

Methane	42.7%
Carbon Dioxide	37.3%
Oxygen	1.2%
Non-Methane Organics	0.5%
Other Gases	18.3%

One molecule of CH<sub>4</sub> has 21 times the global warming potential (GWP) of one molecule of CO<sub>2</sub>. Collection and disposal of LFG (rather than allowing for natural percolation through the cover soil) is required by law to control odor and other emissions. The conversion of CH<sub>4</sub> to CO<sub>2</sub> by combustion reduces the GWP of the captured/destroyed fraction by a factor of 21.

It is not possible to capture every molecule of LFG and its associated CH<sub>4</sub>. Extraction of LFG is conducted with perforated pipes placed within the refuse operating under vacuum. Complete capture is not feasible because excessive vacuum draws atmospheric oxygen into the collection system. The combination of methane plus oxygen is explosive. The collection pipes also cannot be effectively placed within the shallow fringes at the edge of the refuse. The capture efficiency for retrofit systems drilled into old landfills is generally around 75 percent. When systems are installed in concert with creation of each new refuse cell, efficiency increases to 90+ percent. These factors are considered typical of existing and future landfill technology, and were the factors used in the previously completed environmental studies for the project. These “default” percentages were retained for analysis consistency rather than using site-specific factors for the project site. Although collection efficiencies of 95+ percent have been reported at some landfills, the proposed Antelope Valley Landfill project will create a “new” landfill on only a portion of the existing footprint. A future LFG collection efficiency of 90 percent has therefore been assumed.

Of the future ten percent of uncaptured “fugitive” LFG, a portion of the CH<sub>4</sub> is oxidized to CO<sub>2</sub> by microbes in the cover material. The EPA default value for fugitive methane oxidation during percolation through cover material is ten percent. This value is low based upon numerous LFG flux measurements. Site-specific oxidation factor studies have measured a value of 35 percent oxidation (SCS Engineers, 2009). This site-specific measured rate has been assumed applicable to the continued future operation of the Antelope Valley Landfill as well.

The project GHG emissions analysis was based on comparing emissions for pre-project conditions versus increased LFG production associated with proposed placement of 3,613 TPD of refuse. The baseline year that was selected was 2006, the year that AB 32 became law and the baseline year for the completion of other environmental (air quality) studies for the project. In 2006, AVL was producing approximately 896 cubic feet per minute (CFM) of LFG based upon a measured input of 672 CFM to the LFG disposal system. The sources of GHG emissions for baseline conditions included the following:

1. CO<sub>2</sub> collected in LFG control passed through the flare (37.3% of all LFG)
2. CO<sub>2</sub> created when methane (CH<sub>4</sub>) is burned (42.7% methane in LFG – unburned CH<sub>4</sub>)
3. CO<sub>2</sub> escaping within fugitive LFG (25% fugitive x 0.373 CO<sub>2</sub> fraction in LFG)
4. CO<sub>2</sub> from oxidized CH<sub>4</sub> within cover material (25% fugitive x 0.35 oxidation rate)
5. CH<sub>4</sub> within fugitive LFG not oxidized (25% fugitive x 0.65 not oxidized by microbes)
6. CH<sub>4</sub> within unburned LFG (42.7% methane in LFG x 0.009 unburned in flare)

The two residual sources of CH<sub>4</sub> (NOs. 5 &6 above) must be weighed by their GWP to establish CO<sub>2</sub> equivalent emissions. Most of these emissions are considered “biogenic” and are not created by the landfill itself. They would have occurred anyway and are not “new” GHG emissions to the earth’s atmosphere. Various agencies have adopted landfill GHG reporting protocols. EPA’s guidance in its “Greenhouse Gas Inventory Protocol” recommends that Sources 1, 2, 3, and 5 be reported as information items, but that they are not to be considered a direct project-related impact. This recommendation has been followed in this analysis.

Future scenarios were calculated based upon LFG/CH<sub>4</sub> emissions projections assuming that the collection efficiency increases to 90 percent and that the CH<sub>4</sub> fraction increases to 55 percent (Landfill engineers feel the 55 percent rate is slightly over-predictive, but it was used in this report to maintain analysis consistency with the assumptions used in the Lancaster Landfill and Recycling Project GHG Study).

A detained inventory of non-LFG sources of project-related GHG emitters was developed as part of the criteria pollutant air quality impact analysis. That analysis quantified the existing level of landfill on-road traffic and the amount of off-road equipment use. The analysis also calculated the change in the refuse hauling and employee commuting, as well as the added off-road equipment operations that would accommodate a 3,613 TPD disposal rate.

The input parameters for existing and proposed future conditions for diesel (D) and gasoline-powered equipment (G) as documented in the previously completed environmental (SEIR) studies were as follows:

	<u>Existing</u>	<u>Proposed</u>
Surface Street Trucks (D)	1,945 VMT	4,039 VMT
Freeway Truck Miles (D)	936 VMT	1,944 VMT
Auto & Small Trucks (G)	1,155 VMT	2,530 VMT
Off-Road Equipment (D)	9,016 HP-HR	11,864 HP-HR

Fuel efficiencies of 6 miles per gallon for diesel trucks, 13.75 miles per gallon for gasoline autos and small trucks and 0.066 gallons of diesel per horsepower hour (HP-HR) for off-road equipment were assumed. Internal combustion engine fuel consumption was calculated as follows (gallons/day):

<u>Source:</u>	<u>Existing</u>	<u>Proposed</u>
Heavy Trucks (D)	480	997
Auto / Small Truck (G)	84	184
Off-Road Equipment (D)	595	783

The CCAR Protocol provides CO<sub>2</sub> equivalent emissions factors for diesel and gasoline combustion as 22.35 pounds per gallons of diesel fuel and 19.98 pounds per gallon of gasoline (including small amounts on GWP-weighted non-CO<sub>2</sub> GHGs). As a worst-case assumption fuel efficiencies for on-road vehicles and off-road equipment were not assumed to change in the future.

The resulting combination of landfill gas and internal combustion engine GHG emissions for a typical work day are shown in Table 1 for baseline (2006) methane production of 383 CFM and future peak methane production of 1,080 CFM that would be achieved in 2023 if disposal volumes were to increase to

3,163 TPD in 2010. The daily increase in non-biogenic GHG emissions would be 12.1 MT per day if vehicular GHG emissions are assumed unchanged (worst-case) and peak GHG production occurs in the 2023 closure year.

Annual totals were calculated assuming that LFG is produced, collected and destroyed 365 days per year while refuse processing occurs on 306 days with the following GHG emissions results (metric tons [MT] of CO<sub>2</sub>-equivalent emissions per year):

Source:	<u>Existing</u>	<u>Proposed</u>	<u>Change</u>
Combustion Engines	3,580	6,059	+2,479
Non-Biogenic Landfill Emissions	1,460	2,920	+1,460
TOTAL	5,040	8,979	+3,939
Biogenic GHGs	29,930	60,918	+30,988

Increased landfilling at 3,613 TPD would lead to a maximum project-related GHG emissions increase of 3,939 MT per year. This increase represents 0.0009 percent of the statewide inventory of 484,000,000 MT/year, and will be somewhat reduced by anticipated increased hauling efficiencies not included in the above analysis.

**TABLE 4.2-3  
ANTELOPE VALLEY LANDFILL GHG EMISSIONS SUMMARY (MT/day)  
AND ANNUAL (MT/year)**

<b>Source Daily (MT/day)</b>	<b>Baseline – 2006</b>	<b>Future – 2023</b>
<b>On-Road Trucks</b>	4.9	10.1
<b>On-Road Gasoline</b>	0.8	1.7
<b>Off-Road Equipment</b>	6.0	8.0
<b>Oxidized CH<sub>4</sub></b>	2.5	2.8
<b>Fugitive CH<sub>4</sub> in Flare</b>	1.5	5.2
<b>TOTAL – Non-Biogenic</b>	15.7	27.8

<b>Source Annual (MT/year)</b>	<b>Baseline – 2006</b>	<b>Future – 2023</b>
<b>Combustion Engines (306 days)</b>	3,580	6,059
<b>Non-Biological Landfill (365 days)</b>	1,460	2,290
<b>TOTAL</b>	5,040	8,979

**PROJECT RELATED IMPACTS**

Air quality impacts are significant if they cause clean air standards to be exceeded, or if they substantially worsen an existing violation. Impacts deriving from vehicular exhaust occur when relatively benign precursor emissions are subsequently converted to more unhealthful pollutants such as ozone. This process may take many hours. By the time this conversion is completed, the contribution from any individual project will have been diluted to undetectable levels miles away from the emissions source. Any such impacts are therefore analyzed as cumulative air quality impacts.

Because such “secondary” impacts cannot be evaluated relative to ambient clean air standards, many air quality jurisdictions have developed surrogate indicators of potential impact significance. Most commonly, the volume of material emitted is used as a significance criterion even though there is no effective mechanism to convert these emissions into actual air quality. The AVAQMD relied on guidance from the Mojave Desert AQMD (MDAQMD) in the development of significance thresholds. The AVAQMD has adopted numerical emissions thresholds as indicators of potential impact even if the actual air quality increment cannot be directly quantified. The AVAQMD’s thresholds are as follows:

Carbon Monoxide (CO)	548 pounds/day
Nitrogen Oxides (NO <sub>x</sub> )	137 pounds/day
Reactive Organic Gases (ROG)	137 pounds/day
Sulfur Oxides (SO <sub>x</sub> )	137 pounds/day
PM-10	82 pounds/day

### Short-term Construction Impacts

**Impact 4.2-1** Potential for construction related impacts including the potential for PM-10 significance thresholds to be exceeded. The Mojave Air Basin is non-attainment for PM-10.

#### Equipment Emissions

The proposed project will involve a variety of construction activities to implement the various needed improvements. Construction activities include some internal roadway paving, creek bank armoring, minor ancillary facilities, and the construction of new frontage road entrance and new R-5 access road way. The types of equipment used for these activities are similar to the diesel-powered heavy equipment currently operating on the landfill. These construction projects, however, will be in addition to day-to-day, ongoing landfill operations.

The new frontage road entrance and roadway construction of new R-5 access are the largest “extra” project-related activity. The equipment fleet to be operating at any time is at the discretion of the construction contractor. Grading of the hillside near the new access road connection is the likely single-most equipment intensive activity. A representative equipment fleet was hypothesized comprised of the following pieces:

- 1 Dozer (50% load)
- 1 Loader (30% load)
- 1 Backhoe (20% load)
- 1 Compactor (40% load)
- 4 Haul Trucks (100 miles/day)

Emission factors from USEPA AP-42 were combined with the assumed load factors to produce the following peak daily equipment emissions:

**Roadway Construction Diesel-Powered Equipment Emissions**

Source	Emissions (lb/day)			
	CO	ROG	NOx	PM-10
Dozer	7.2	0.8	16.7	0.1
Loader	1.4	0.6	4.5	0.4
Backhoe	0.7	0.3	3.2	0.2
Compactor	3.2	0.3	0.2	0.1
Haul Trucks	4.6	0.9	3.1	0.2
<b>TOTAL</b>	<b>17.1</b>	<b>2.9</b>	<b>27.7</b>	<b>1.0</b>

Worst-case daily emissions will be well below the adopted significance thresholds of 137 pounds per day of ROG or NOx, and 548 pounds per day of CO and 82 pounds per day of PM-10. Maximum equipment construction emissions will not substantially increase daily operational emissions to any significant level. Chemical testing of airborne particulates in Southern California has consistently found that less than 5 percent of PM-2.5 is comprised of “crustal materials.” PM-2.5 is mainly created from the coagulation of molecules into larger chemical chains, or from high temperature combustion. Therefore, very little PM-2.5 is derived from fugitive dust. The 1.0-pounds per day of diesel exhaust generated during access roadway construction will be primarily PM-2.5, but very little of the fugitive dust will be small enough to be classified as PM-2.5

PM-10 Emissions from Construction/Grading

In addition to exhaust emission, roadway construction and construction of the two desilting basins and creek erosion protection will cause fugitive dust to be generated from grading, excavation and other soil disturbance. Fugitive dust is a combination of dust particles that are too large/heavy to remain suspended in the air, plus smaller particles that can remain in the air semi-indefinitely (PM-10). As stated above, chemical testing of particulate matter shows that very little breakdown of soil occurs into ultra-small diameter particulates (PM-2.5). Fugitive dust during construction activities therefore primarily can cause a soiling nuisance, or add to locally elevated PM-10 levels.

The precise quantity of earthworks, the weight of construction vehicles, the wind speed, soil moisture and particle size distribution of the soil on any given future day would need to be known in order to accurately calculate PM-10 emissions. Because these parameters can vary from point to point hour-by-hour, approximate “default” values are often used to estimate PM-10 emissions that depend only upon the disturbance acreage. The accepted statewide PM-10 emissions rate from fugitive construction dust is 10 pounds per acre of disturbance per day activity (California ARB, 2000) when best available control measures (BACMs) for fugitive dust are employed. The proposed ancillary facilities which would involve grading and/or earth disturbing activities include the desilting basin construction (two total), the creek erosion protection, the new R-5 access road way, and construction of a new frontage road entrance. The maximum disturbance area for the three ancillary facilities grading projects totals 20+ acres as follows:

Access Road Construction	7.5 acres
Anaverde Creek Scour Protection	7.7 acres

Desilting Basins (2)

5.0 acres

The scour protection project may have a smaller disturbance footprint than shown above based upon the most current plans. A final plan has not yet been completed. Because the probable disturbance area has not been quantified, the above 7.7 acre estimate has been used as a worst-case assumption.

The fugitive PM-10 emissions from each individual construction project are as follows if the entire project is under simultaneous disturbance and BACMs for dust control are utilized:

Access Road Construction	75 pounds/day
Scour Protection	77 pounds/day
Desilting Basins	50 pounds/day

Combined grading/construction of any two ancillary facilities could cause the PM-10 significance threshold of 82 pounds per day to be exceeded. However, excess soil removed from the desilting basins or from the hillside cut for the construction of the new R-5 access and a new frontage road entrance would be used as daily cover on the landfill. The decreased excavation of cover material at the landfill would offset increased PM-10 from ancillary construction. This offset is presumed sufficient to “neutralize” fugitive PM-10 emissions from the desilting basins as the smallest ancillary project. Potentially significant PM-10 emissions impacts would therefore only occur if the entire road construction (new R-5 access and new frontage road entrance) and the creek bank armoring were both under simultaneous maximum disturbance. A restriction to not conduct full grading/disturbance for these two activities simultaneously is required by **Mitigation Measure 4.2-1** to maintain “project related” PM-10 emissions at less-than-significant levels.

Larger diameter dust particles are normally re-deposited within 100 feet of their origin (EPA, 1995). Existing homes east of Tierra Subida are more than 100 feet away from most soil disturbance activities. Soiling nuisance is not an anticipated issue for the access road realignment.

Because the Mojave Air Basin is non-attainment for PM-10, Mitigation Measure 4.2-2 is also recommended to ensure project PM-10 construction emissions are kept to less than significant levels.

**Long-Term Operational Impacts**

**Impact 4.2-2** Mobile source project related exhaust emissions (see **Table 4.2-5** ) will result from on- and off-site heavy equipment, truck hauling operations, and employee commuting.

**Impact 4.2-3** Potential for PM-10 emission increases related to excavation, hauling, spreading, and compaction of cover material. The Mojave Air Basin is non-attainment for PM-10.

**Impact 4.2-4** Potential impact related to increased subsurface landfill gas (LFG) production.

**Impact 4.2-5** Potential for additional landfill gas from increased daily tonnage to cause odor.

Mobile-source emissions (truck hauling and employee commuting) associated with the project implementation were calculated using the California Air Resources Board (ARB) computer model called URBEMIS2002. Operational exhaust emissions for the project will result from on- and off-site heavy equipment, truck hauling operations, and employee commuting. Because these activities currently exist at

the landfill, the additional equipment, truck operations, and new employee trips generated have been analyzed to determine what operational air quality impacts, if any, are associated with the proposed increase in refuse tonnage at the project site.

Heavy equipment exhaust emissions were calculated using the most current EPA emissions factors for non-road equipment. Because the size of the working face and the amount of needed cover will not increase substantially for the expanded/reconfigured landfill, off-road equipment loads will be similar to current operations. Because the current landfill equipment fleet is not being utilized to its full capacity, and an overall average load factor of 45 percent was assumed for current operations, increasing to 65 percent during expanded operations.

The following **Table 4.2-4** shows the equipment fleet that was assumed operating daily at the landfill and the existing and future daily truck trips was extracted from the traffic impact study provided by Kunzman & Associates.

**TABLE 4.2-4  
OPERATIONAL EQUIPMENT AND PERSONNEL**

Equipment		Personnel	
Existing (1,372 tons/day)	Future (3,613 tons/day)	Existing (1,372 tons/day)	Future (3,613 tons/day)
2 Dozers + spare	2 Dozers + spare	3 Operators	5 Operators
1 Compactor + spare	2 Compactors + spare	1 Mechanic	1 Mechanic
2 Scrapers	2 Scrapers	4 Laborers	5 Laborers
2 Loaders	2 Loaders	2 Scale House	2 Scale House
1 Grader	1 Grader	1 Site Manager	1 Site Manager
2 Water Trucks	2 Water Trucks		1 Mechanic/Fueler

Emissions factors for heavy equipment are contained in **Appendix C**. The resulting diesel equipment emissions, are shown in **Table 4.2-4A**. Emissions increases from off-road operations are less than the AVAQMD significant thresholds.

**TABLE 4.2-4A  
LANDFILL EQUIPMENT EMISSIONS**

Daily Emissions (pounds/day)										
	Year 2005 <sup>1</sup>					Year 2007 <sup>2</sup>				
Source:	CO	NOx	PM-10	SOx	ROG	CO	NOx	PM-10	SOx	ROG
Dozers	7.7	19.2	0.6	3.2	1.3	10.7	27.8	1.0	4.8	1.9
Compactors	2.2	5.1	0.3	0.6	0.6	5.8	14.4	1.0	1.9	1.9
Scrapers	6.4	20.5	0.6	3.2	1.3	7.7	26.9	1.0	4.8	1.9
Loaders	2.6	8.3	0.6	1.3	0.6	3.8	10.7	1.0	1.9	1.0
Grader	1.9	5.1	0.3	1.0	0.3	2.4	7.2	0.5	1.5	0.5
Water Trucks	3.8	9.6	0.6	1.3	0.6	5.8	13.4	1.0	1.9	1.0
<b>Total:</b>	<b>24.6</b>	<b>67.8</b>	<b>3.0</b>	<b>10.6</b>	<b>4.7</b>	<b>36.2</b>	<b>100.4</b>	<b>5.5</b>	<b>16.8</b>	<b>8.2</b>

Daily Emissions (pounds/day)										
	Year 2005 <sup>1</sup>					Year 2007 <sup>2</sup>				
Source:	CO	NOx	PM-10	SOx	ROG	CO	NOx	PM-10	SOx	ROG
Change	-	-	-	-	-	+11.6	+32.6	+2.5	+6.2	+3.5
AVAQMD Threshold	-	-	-	-	-	548	137	82	137	137

Source: Giroux and Associates.

<sup>1</sup>= 45% load factor

<sup>2</sup>= 65% load factor + 1 compactor

Vehicular exhaust emissions were calculated using the California Air Resource Board (ARB) emission computer model URBEMIS2002. The modeling was adjusted from its default levels to account for special trip characteristics (i.e., trip lengths, travel speeds, etc.). The following vehicle characteristics were assigned to various classes of project trips in the URBEMIS2002 model runs:

- Self haul & employees: 33% autos/34%pick-ups/33% medium trucks – 35 mph
- Collection trucks: 100% medium heavy trucks – 25 mph
- Freeway trucks: 100% heavy-heavy trucks – 55 mph

The vehicular input parameters and model outputs are included in **Appendix C**. A one-way travel distance of 5.5 miles for local streets, and 15 miles for freeway travel and a split of 85 percent local and 15 percent freeway, was provided by the project traffic consultant. The total VMT are consistent with the traffic study assumptions.

Daily refuse hauling emissions are calculated as (pounds per day) and outlined below in **Table 4.2-4B**:

**TABLE 4.2-4B  
LANDFILL TRUCK HAULING EMISSIONS (pounds/day)**

	ROG	NOx	CO	SOx	PM-10
Existing (2005)	15.0	60.5	145.1	0.7	7.7
Existing + Project Avg.*	20.1.	115.8	131.1	0.2 <sup>1</sup>	16.1
Project Impact/Change	+5.1	+55.3	-14.0 <sup>2</sup>	-0.5	+8.4
Existing + Project Peak*	22.9	150.6	158.9	0.3	19.9
Project Impact/Change	+7.9	+90.1	+13.8	-0.4	+12.2
AVAQMD Threshold	137.	137.	550.	137.	82.

Source: Giroux and Associates.

\*=2007

<sup>1</sup>= fuel sulfur phase-out in California.

<sup>2</sup>= CO emissions decrease faster over time than project travel increases

The combined change/project impact for mobile source emissions is shown in **Table 4.2-5**. As shown in **Table 4.2-5**, the individual air quality impact from either on-site equipment operations or off-site trucking and the combined total project related emissions are below the AVAQMD significance threshold.

**TABLE 4.2-5  
PROJECT RELATED MOBILE SOURCE EMISSIONS**

<b>Exhaust Emission Changes/Project Impacts (pounds/day)</b>					
<b>Activity</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>	<b>ROG</b>
On-Site Equipment	11.6	32.6	2.5	6.2	3.5
Off-Site Vehicles	13.8	90.1	12.2	-0.4	7.9
<b>Total Change</b>	<b>25.4</b>	<b>122.6</b>	<b>14.7</b>	<b>5.8</b>	<b>11.4</b>
AVAQMD Threshold	548.	137.	82.	137.	137.

Sources: Giroux and Associates.

All the analyzed project related pollutant emissions are below significance thresholds with an adequate margin of safety. With the tonnage increase occurring over time with a cleaner future vehicle fleet rather than instantaneously, the emissions improvements will partially offset the greater trip generation. The combined effects of consolidation of MSW into larger-capacity transfer trailers and an increasingly cleaner future vehicle fleet will maintain the future project related emission burden at close to its existing level.

Peak activity hauling emissions will generate a greater level of on-road emissions, especially NO<sub>x</sub> from diesel exhaust. **Table 4.2-5** shows, however, that all emissions increases will still be less than significant even on a worst-case activity day. The 123-pounds per day NO<sub>x</sub> increase would be close to the 137-pounds per day significance threshold, but still remain less than significant by a reasonable margin. With continued future emissions reductions from newer on-site equipment (25 percent) and from on-road traffic (60 percent) lower by 2020, the emission differential will be inconsequential between existing and future mobile equipment exhaust emissions. The emissions estimates above also do not take into account that a portion of the refuse hauling fleet has been converted to cleaner burning liquefied natural gas (LNG) or compressed natural gas (CNG). The existing percentage of alternative-fueled vehicles is still small (perhaps ten percent), but will grow as jurisdictions such as the South Coast AQMD require that any new refuse vehicles must be clean-fueled.

Dust (PM-10)

Dust (PM-10) emission from landfill operations will not change substantially with project implementation. Dust emissions derive from vehicle and equipment travel on paved industrial roads and on unpaved surfaces, and from dumping of materials. The consolidation of smaller loads into larger transfer trailers will create only a small increase in daily haul trips, and only one additional piece of heavy equipment will operate on the landfill. On-site operational activity emissions (dust and equipment exhaust) will not be substantially greater than from existing conditions.

Excavation hauling, spreading and compaction of cover material create airborne particulate matter (PM-10). The material is wetted by water trucks, as are unpaved internal haul routes and the road from the entrance gate to the working face. PM-10 emission rates from these activities vary dramatically with soil silt content, moisture levels, disturbance vigor and wind conditions. The amount of cover material needed for a proposed 3,600-tpd intake is not substantially larger than for the current 1,372 tpd rate. The working face that needs to be covered is kept as small as practical. At 3,600+ tpd, there is simply more refuse covering refuse than at the current rate. At the end of each workday, the daily cover requirement is not much different for either case. There is therefore no substantial change in PM-10 emissions as further

evidenced by the fact that the expanded intake rate requires only one more piece of heavy equipment than existing conditions. It should also be noted that the working face would not change under the proposed peak daily tonnage intake of 5,548 tpd as the added tonnage would be due to a higher intake of recyclables, fill dirt, or other materials not destined for landfill disposal.

Dust generation from increased landfill truck traffic will be offset by a reduction in the unpaved travel distance within the landfill compared to existing conditions. Paving disturbances for existing and proposed internal roadways are shown on **Figure 4.2-1**. The internal haul road will be paved in increments as the volume of refuse increases. The conversion of existing unpaved travel surfaces will allow for substantial increases in daily disposal tonnage with only minimal increases in daily PM-10 generation.

There would be more paved internal roadways with the proposed project (see below). Even with frequent watering, and unpaved industrial road generates almost six (6) times as much PM-10 per vehicle mile of travel than does a paved and cleaned road (2.3 pounds per mile versus 0.4 pound per mile).

Under existing and proposed future conditions, the average travel distance per refuse truck one-way trip is as follows:

Existing Internal Landfill Roads:	1.22 miles paved	1.72 miles unpaved
Proposed/Future Internal Landfill Roads:	2.43 miles paved	0.39 miles unpaved

PM-10 calculations for truck travel are as follows:

Existing Average @ 1,372 ton/day - 208 one-way trips	924.4 lb/day
CUP #93041 Permitted Peak/Maximum – 550 one-way trips	2,444.2 lb/day <sup>1</sup>
	1,027.95 lb/day <sup>2</sup>
Proposed Average @ 3,613 ton/day - 432 one-way trips	807.4 lb/day
Proposed Peak/Maximum @ 5,548 ton/day - 567 one-way trips	938.6 lb/day <sup>3</sup>

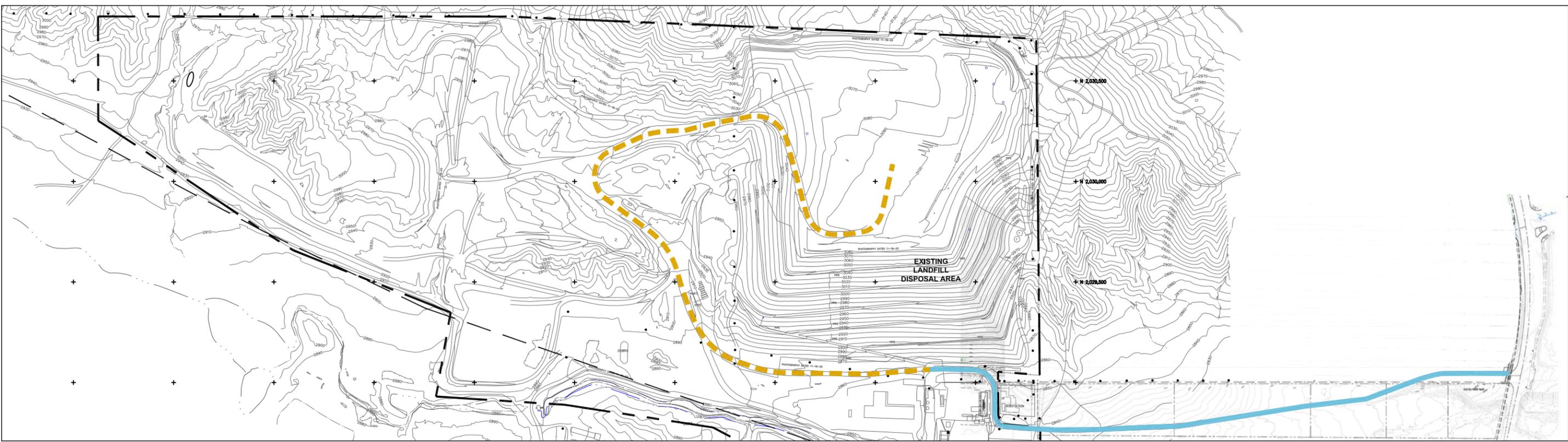
<sup>1</sup>Assumes existing travel distance/paving scenario.

<sup>2</sup>Assumes future travel distance/paving scenario.

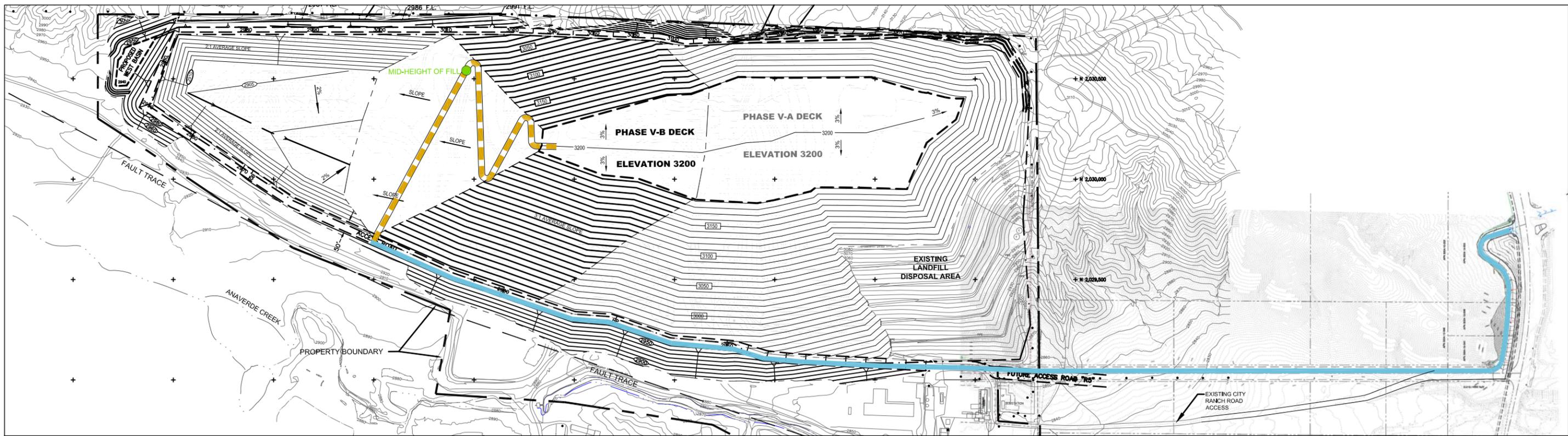
<sup>3</sup>The additional 135 one-way trips associated with the peak intake scenario (567 – 432) would all occur on “paved surface” only.

Changes in paved versus unpaved road travel, plus the consolidation of refuse into larger vehicles, will allow for a substantial increase in landfill disposal rates with a reduction of 117 pounds per day of PM-10 (924.4-807.4) except during the peak disposal events, which will result in a 14.2 (938.6-924.4) pound per day increase (existing versus proposed maximum/peak). This 14.2-pounds-per-day increase represents a “worst case” comparison since the landfill is currently permitted under CUP #93041 and the PM-10 generation under the permitted scenario is much higher than the existing PM-10 generation scenario.

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**EXISTING ROADS**



**PROPOSED ROADS**

**EXPLANATION**

— PROPOSED DIRT ROAD

— PROPOSED PAVED ROAD

**NOTE**

TOPOGRAPHIC BASE MAP FROM WALKER AND ASSOCIATES, INC., SURVEY FLIGHT DATED NOVEMBER 18, 2003 (10' CONTOUR INTERVAL SHOWN).



In evaluating possible peak disposal scenarios, it should also be noted that peak activity day intake of 5,548 tpd will entail delivery of inert material that may be suitable for use as daily cover and/or recyclables which would not be transported to the landfill working face. PM-10 emissions from the peak tonnage intake will be offset by a reduced need for on-site extraction and hauling of daily cover. The increased delivery and the decreased extraction will likely balance in terms of PM-10 generation. With the landfill's continued compliance with AVAQMD Rule 402 and 403 and **Mitigation Measure 4.2-3** no significant PM-10 impact is anticipated during the landfill's maximum/peak daily tonnage intake.

The AVAQMD requires the use of Best Available Control Measures (BACMs) for all fugitive dust sources from surface disturbance or from unpaved roadways. Landfills are required to comply with AVAQMD Rule 403 in the excavation of cover material, in travel on internal haul roads, and in the placement of cover. Current requirements of Rule 403 BACMs applicable to the project include:

1. No visible dust emissions are allowed beyond the property line,
2. The PM-10 increment between upwind and downwind locations may not exceed 50 micrograms per cubic meter over a five hour period,
3. No visible dust emissions are allowed 100 feet from any moving equipment,
4. Inactive disturbance areas must be stabilized for routing and high wind conditions,
5. Active disturbance areas must be stabilized on a recurring basis,
6. Track-out must be removed quickly from public roadways,
7. Weed abatement must use dust control measures,
8. Large operations must prepare and approved dust control plan (DCP).

Compliance with these measures is mandatory. Compliance was presumed in preparing the PM-10 emissions estimates for existing and future conditions. However, according to Rule 403 Section (c) (14), the landfill is not considered a "Large Operation" as it does not involve a simultaneous disturbance exceeding 100 acres. Nevertheless, because of the non-attainment status of the air basin for PM-10, a formal commitment to the use of enhanced dust control procedures should be made and implemented. Preparation and approval of a DCP is therefore recommended (**Mitigation Measure 4.2-3**) independent of project size.

Senate Bill 656 (Sher, 2003) requires that public exposure to PM-10 and/or PM-2.5 be reduced as much as possible. Further enhancement of Rule 403 is being considered by the AVAQMD as documented in "List and Implementation Schedule for District Measures to Reduce PM-10/PM-2.5" (July, 2005). The air district will review the following possible upgrades to Rule 403:

1. Reduction of the size trigger for preparing DCPs,
2. Pre-watering of excavation sites,
3. Installation of track-out control devices at the landfill exit,
4. Roadway sweeping with high efficiency dry sweepers,
5. Paving of equipment parking and staging areas,
6. Perimeter airborne and water erosion control of dusty material.

If these measures are considered technically feasible and economically reasonable, they will become law. As with the existing Rule 403, any further enhanced dust control is not considered discretionary, and would be mandatory. Their implementation would, however, incrementally reduce PM-10 and strengthen the conclusion that the individual project PM-10 impact will be less-than-significant.

Landfill Gas

The 1992 certified EIR did not provide a quantitative analysis of Landfill Gas emissions. Operation of the landfill at an increased daily rate of refuse receipt will increase subsurface landfill gas (LFG) production. Greater quantities of LFG will require 1) additional combustion in a waste gas disposal flare, and also 2) result in greater levels of fugitive LFG percolating through the cover material. The flare produces NOx and CO as combustion products. A small fraction of the “fugitive” LFG is non-methane hydrocarbons (<1 percent) that will be contained in the material not captured by gas wells within the landfill.

The rate of LFG production depends upon the organic fraction of the waste stream, its biodegradability, and the moisture content within the refuse mass. Southern California landfills within dry climates have very slow decay rates. Newspapers are often still readable 20 to 30 years after they have been deposited in the fill.

Landfill engineers have developed a gas production estimate that projects an increase in methane collection from 287 standard cubic feet per minute (SCFM) for existing operations to a maximum production rate of 1,964 scfm near 2020. For existing conditions, for every three scfm of LFG collected, about one scfm escapes without collection. This equates to a 75% collection efficiency ratio. With increasing collection efficiency in a larger landfill with deeper gas collection/extraction wells, the future LFG collection efficiency is accepted by most air quality agencies as near 90 percent. Because of air intrusion into shallow wells, the existing measured methane level in LFG is 39.2 percent. At landfill closure, the forecast methane fraction is 55 percent.

Operational emissions from an LFG disposal flare and from fugitive ROG losses through the landfill cover were calculated for existing conditions and for a future production based upon an average 3,613 tpd daily disposal scenario. Calculation details are contained in **Appendix C**. The net emissions increase for post-closure (Year 2020) conditions when LFG production is forecast to reach a maximum are as follows (pounds/day):

Daily Emissions Increase					
	NOx	PM-10	CO	ROG	SOx
LFG Flare	57.7	1.8	3.2	3.5	27.7
Fugitive Losses	-	-	-	80.8	-
<b>Total:</b>	<b>57.7</b>	<b>1.8</b>	<b>3.2</b>	<b>84.3</b>	<b>27.7</b>
AVAQMD Threshold	137.	82.	548.	137.	137.

Maximum LFG production at landfill closure will not cause AVAQMD thresholds to be exceeded. During the operational life of the landfill, gradual increases in LFG production and disposal will be off-set by an even greater rate of vehicular emissions improvements.

By 2020 as the peak LFG production year, LFG combustion will not cause the significance threshold to be exceeded for any of the five pollutants analyzed. Furthermore, by 2020, diesel haul truck exhaust will be 60 percent cleaner than in 2004. The reduction in future vehicular emissions will off-set the small emission increases from the two flares (one existing and one future addition).

The most recent LFG combustion source test (March 31, 2004) at the landfill showed that 112.5 standard cubic feet of methane per minute collected by the LFG control system contained 4.54 pounds per hour

(109.0 pounds per day) of reactive organic gases (expressed as methane). The ratio of 109.0 pounds of ROG per day to 112.5 scfm methane was applied to the fugitive LFG emissions estimates for existing and future conditions as follows:

**ROG Emission from Fugitive LFG Losses**

Existing	37.1 scfm methane fugitive losses x 109.0 lb/day ROG ÷ 112.5 scfm methane = <b>35.9 lb/day</b>
Future	120.4 scfm methane fugitive losses x 109.0 lb/day ROG ÷ 112.5 scfm methane = <b>116.7 lb/day</b>
Increase	<b>80.8 lb/day</b>

The increased ROG emissions will be less than the 137-pound per day significance threshold.

The increase in emissions from the flare and the fugitive ROG sources will also be further offset by emissions improvements in the project travel fleet. Between 2004 and 2020, the EMFAC2002 computer model predicts that truck exhaust per mile of travel will decrease by 60 to 80 percent (SCAQMD, CEQA Handbook Update, 2003). Vehicular emissions reductions will further reduce ROG due to fugitive LFG emissions to less-than-significant levels.

Total Daily Operational Emissions

**Table 4.2-6** presents the total project increases in total daily operational emission over current existing conditions. It should be noted that the project increases over the existing conditions are “worst-case” estimates since the landfill is permitted to receive 1,800 tpd and the emission figures used for existing conditions are based on 1,372 tpd. The table combines emissions included in the previous **Table 4.2-5** and Landfill Gas Emission Charts.

**TABLE 4.2-6  
TOTAL DAILY OPERATION EMISSIONS COMPARISON (pounds/day)<sup>1</sup>**

<b>Existing Operations (2005)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
On-site Equipment	4.7	67.8	24.6	3.0	10.6
Off-site Travel	15.0	60.5	145.1	7.7	0.7
Flare Combustion	0.5	9.8	0.5	0.3	4.0
Internal Travel Fugitive Dust	-	-	-	924.4	-
Fugitive LFG	35.9	-	-	-	-
<b>TOTAL</b>	<b>56.1</b>	<b>138.1</b>	<b>170.2</b>	<b>935.4</b>	<b>15.3</b>

<b>Future Operations (2020)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
On-site Equipment <sup>1</sup>	3.8	54.2	19.7	2.4	8.5
Off-site Travel <sup>2</sup>	6.0	24.2	58.0	19.8	Negl.
Flare Combustion	9.9	92.3	441.4	42.6	17.0
Internal Travel Fugitive Dust	-	-	-	938.6	-

<b>Future Operations (2020)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
(with Peak TPD intake)					
Fugitive LFG	116.7	-	-	-	-
<b>CUMULATIVE IMPACT TOTAL</b>	<b>136.4</b>	<b>170.7</b>	<b>519.1</b>	<b>1,003.4</b>	<b>25.5</b>
<i>Project Impact</i>	+80.3	+32.6	+348.9	+68	+10.2
Significance Criteria	137.0	137.0	548.0	82.0	137.0

<sup>1</sup>20 percent reduction from 2005 (with project) for ROG/NOx/CO/PM-10.

<sup>2</sup>60 percent reduction from 2005 (with project) for ROG/NOx/CO.

Landfill Odor

Landfills emit odor from freshly delivered municipal solid waste (MSW) when the truck is emptied at the landfill “working face.” The “fresh trash” odor is the odor that might be noticed in the curbside collection container on pick-up day after the material has begun initial decomposition. Odor strength of fresh trash depends upon the amount of readily degradable material, the moisture level, and the storage temperature. For residentially-dominated MSW, with generally good daytime mixing, the fresh trash odor is noticeable for approximately one-fourth mile downwind (normally east of the landfill). There are minimal sensitive uses within the zone of daytime odor detectability.

After burial, the bio-degradable portion of refuse begins a very slow decay process that lasts for more than 50 years in dry environments such as Antelope Valley. Bacteria break down complex cellulose molecules into methane and carbon monoxide. About 2 percent of landfill gas (LFG) is more complex organic molecules that have a “sickeningly sweet” character in heavy concentration.

LFG percolates through the cover material along the path of least resistance. It escapes into the air along subsidence cracks, bare soil or cover material penetrations. The extent of odor detectability from LFG depends upon the emission quantity and the atmospheric dilution rate. Because daytime dilution is ten-fold better than at night, LFG odor is most prevalent from late evening until early morning.

As stated previously, the landfill is in full compliance with AVAQMD Rule 1150.1 governing control of gaseous emissions from landfills, and with Rule 402 prohibiting creation of a nuisance from odor or dust. On-site emissions sources are consistent with all emissions control requirements.

The landfill has a gas collection and flare system that combusts 99+ percent of LFG collected by a system of perforated wells and connecting tubes placed within/on the landfill. The typical collection efficiency for gas systems is around 75 percent. If too much vacuum is applied to the system, it can draw outside air into the gas stream and create an explosive mixture. A well-designed LFG disposal system maximizes collection/combustion without creating any explosion hazard.

With a properly operating LFG disposal system, the zone of LFG detectability under stable nocturnal meteorological conditions due to “fugitive” LFG emissions can be reduced from 1-2 miles with no system to around one-half mile with the system. The system of wells and the flare at the existing landfill maintain a zone of odor detectability that rarely, if ever, reaches the closest houses. No odor complaints regarding the landfill have been registered with the AVAQMD. As long as additional LFG collection and disposal capacity is developed in conjunction with an increased disposal rate, setback from the nearest homes will be adequate to preclude creation of any adverse odor impact from “fugitive” landfill gas.

Although significant impacts are not anticipated, **Mitigation Measure 4.2-4** is proposed to ensure potential odor problems do not become significant.

### **GHG EMISSIONS**

#### **Impact 4.2-6** Potential conflict with AB-32 or potential adverse effects of global warming

The proposed project will not conflict with AB-32 or create potential adverse effects of global warming. The project complies with all existing GHG control requirements for landfills. The 25,000 MT/year proposed mandatory reporting threshold would not be exceeded. It would similarly not cause the 10,000 MT/year threshold of the CARB Market Advisory Committee to be exceeded, and therefore, would not be considered “substantial” in a CEQA sense. Nevertheless, because of the globally cumulative nature of anthropogenic GHG emissions and suspected global warming, any reasonably available additional control measures should be implemented on a project basis. Implementation of **Mitigation Measures 4.2-5 through 4.2-7** would reduce the project’s cumulative contribution to GHG/global warming to the extent feasible.

### **4.2.5 CUMULATIVE IMPACTS**

#### **Impact 4.2-7** Potential impact to NO<sub>x</sub> and PM-10 due to cumulative growth and developments in the surrounding area.

A significant amount of development has been approved or is pending approval in the City of Palmdale (refer to Section 3.5 for a list of cumulative projects). Although the increase in daily vehicular trips that will occur under the proposed project will not exceed the significance threshold, the daily incremental increase in vehicular trips generated by the proposed project, when combined with the mobile source emissions generated by the vehicular traffic that is accounted for in 6percent growth rate within the traffic study, will result in significant cumulative air quality impacts. This is due, primarily, because the air basin is currently classified as “non-attainment” for both ozone (State and federal) and PM-10 (State). ROG and NO<sub>x</sub> are ozone formation precursor compounds. Although implementation of the proposed project would not generate significant amounts of NO<sub>x</sub>, on a project specific basis, the increase in daily emissions will contribute to the regional burden. As a result, these emissions would exacerbate the current “non attainment” status of the basin for the two criteria pollutants (ozone, including NO<sub>x</sub> and PM-10). As shown in **Table 4.2-6**, the cumulative impact (NO<sub>x</sub> and PM-10) of existing operations, along with the incremental increases associated with the proposed increase in disposal volume and other cumulative growth, and development projects in the area, is considered a cumulatively significant unavoidable impact. Compliance with existing AVAQMD rules and regulations and **Mitigation Measure 4.2-1** through **4.2-3** will reduce the cumulative impacts to PM-10, but they will remain significant and unavoidable on a cumulative basis. Therefore, significant and unavoidable cumulative air quality impacts are anticipated within the air basin and the City of Palmdale Planning Commission must adopt a Statement of Overriding Considerations.

### **4.2.6 MITIGATION MEASURES**

Many of the project impacts are reduced by the project’s required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures

have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

The project shall comply with all requirements of the California Air Resource Board off-road equipment source control programs and the California EMFAC emission control program.

The landfill will continue to comply with AVAQMD Rules 401 and 402 prohibiting creation of visible emissions and/or a nuisance from odor or dust.

The landfill will continue to comply with AVAQMD Rule 1150.1 and NSPS governing control of gaseous emissions from landfills. The LFG collection/disposal system constitutes best available control technology (BACT) and will be expanded as necessary consistent with Title 27 of CCR.

#### **FUGITIVE DUST EMISSIONS (PM-10)**

- 4.2-1** Because the grading/disturbance of more than 10 acres will cause the daily PM-10 thresholds to be exceeded, construction of landfill ancillary facilities (new frontage road, R-5 access, and the Anaverde Creek erosion protection) shall not exceed 10 acres of grading on any given day.
- 4.2-2** The internal haul road from the scale house into the landfill shall be incrementally paved with asphalted concrete or equivalent as depicted on **Figure 4.2-1**.
- 4.2-3** Because of the potential for fugitive dust emissions from the proposed landfill to cause a public nuisance or exacerbate PM-10 non-attainment status within the Antelope Valley, dust generated by project activities shall be kept to a minimum and prevented from dispersing offsite. The project shall comply with all best available control measures of existing AVAQMD Rule 403, or any of its possible near future control measure enhancements. The project size is not sufficient to require preparation and approval of a formal fugitive dust control plan (DCP) as it is less than 100 acres of simultaneous disturbance. However, because of the non-attainment status of the air basin and the cumulative significance of continued elevated levels of PM-10 emissions, a DCP shall be prepared and submitted to the AVAQMD for their review and approval. The elements of such a plan are already part of site operational procedures. The preparation and implementation of a dust control plan is designed to create a CUP compliance evaluation mechanism to further protect the nearest existing and future residents. The elements of such a plan would likely include:
- a. Water trucks or fixed sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site.
  - b. Areas to be graded or excavated shall be watered before commencement of the grading or excavation operations. Application of water must penetrate sufficiently to minimize fugitive dust during grading activities.
  - c. All graded and excavated material, exposed soil areas, and active portions of the landfill, including on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary to prevent fugitive dust from leaving the landfill site.

- d. Signs shall be posted on-site limiting traffic to speeds of 15 mph or less on unpaved roads and 25 mph on paved roads.
- e. During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off-site or on-site.

## ODOR

**4.2-4** If an odor nuisance problem should develop, appropriate control measures shall be employed such as applying additional cover material or more frequent application of the cover material to seal the surface, or adjustments to the ~~vacuum pressure on wells, or disposal equipment~~landfill gas collection system.

## GHG EMISSIONS

The recommended mitigation measures to reduce hauling and disposal GHG exhaust emissions are:

**4.2-5** The project shall include the following set of measures that, working together, will reduce operational greenhouse gas emissions of the project and the effects of global warming:

- Hauling trucks shall be powered by liquefied natural gas (LNG) or ultra-low sulfur diesel fuel.
- Idling of heavy-duty hauling trucks in excess of five minutes, and idling of off-road mobile sources of any type in excess of ten minutes shall be prohibited.
- When new landfill equipment is purchased by WMI, new commercially available equipment shall be purchased that meets or exceeds California's emission standards in effect at the time of purchase.
- Onsite vehicles and equipment shall be properly maintained by being serviced at least every 90 days and once annually in compliance with Department of Transportation (DOT) requirements.
- Operation equipment used for the proposed project shall use clean alternative (i.e., non-diesel/biodiesel) fuels, or use equipment that has been retro-fitted with diesel particulate reduction traps or equivalent control technology, using equipment certified by CARB. Such equipment is now subject to CARB's new regulation to control PM emissions from off-road diesel engines.
- For the purchase of primary heavy duty, diesel powered landfill equipment at AVPL (dozers and compactors), if equipment meeting California's 2014 emission standards for off-highway, heavy duty diesel equipment is commercially available before 2014, WMI shall purchase such equipment as older equipment is replaced.

**4.2-6** Within three years of project approval, the applicant shall develop a Greenhouse Gas Reduction Plan that demonstrates how the AVPL will achieve by 2020 a reduction in annual GHG emissions

such that emissions are no greater than 10 percent below 2006 levels and will meet or exceed all regulatory requirements related to GHG control. The Reduction Plan shall include one or more of the following measures, or combination thereof:

- Use of B-5 or B-20 Biodiesel in on-site equipment and in heavy duty truck fleets (and as a condition of future contract approvals if third-party haulers are used)
- Use of hybrid hauling trucks
- Use of Best Available Control Technology and BMPs when designating new waste disposal cells (e.g., by designing any additional gas collectors in bottom liner systems) and to increase gas combustion capacity/improve flare destruction efficiency
- Reconsider the feasibility of gas-to-energy production capacity in the future for use in fueling vehicles, operating equipment or energy conversion
- Increased diversion of organic material from landfill disposal and use as landfill cover material
- Increased recycling and carbon offsets
- The plan shall include cost estimates for GHG reduction measures and identify funding sources. The plan shall include an implementation schedule that demonstrates substantial GHG emission reductions prior to the 2020 deadline, including implementation of “Early action” measures that may be implemented within three years of plan approval. The plan shall include an updated inventory of projected GHG emissions and an updated estimate of GHG emissions in 1990. The plan shall be subject to review and approval by AVAQMD.
- Increase waste diversion of recyclable materials

**4.2-7** Following closure of the landfill, the applicant shall continue to operate, maintain, and monitor the landfill gas collection and treatment system as long as the landfill continues to produce landfill gas, or until it is determined by the ACAQMD that emissions no longer constitute a considerable contribution to greenhouse gas emissions, whichever comes first.

#### **4.2.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION AND REGULATION COMPLIANCE AND/OR PROJECT DESIGN MEASURES**

The proposed project will continue compliance with Title 27 and AVAQMD Rules 402, 403, and 1150.1.

Construction of ancillary facilities, including realignment of the landfill access to R-5 and construction of a new frontage road that connects to City Ranch Road and intersects Tierra Subida at Rayburn Road, construction of two desilting basins, and scour protection for Anaverde creek will increase PM-10 emissions; however, with implementation of **Mitigation Measures 4.2-1, 4.2-2, and 4.2-3** and compliance with AVAQMD Rule 402 and 403, the impacts will be reduced to less than significant levels.

The operational activities of the landfill would include small increases in on-site equipment usage, haul truck trips, and on-site employees. These increases will not cause pollutant significance thresholds to be exceeded in any category analyzed.

PM-10 emissions will not increase substantially because the size of the working face is not much larger at 3,600+ tpd than at 1,372 tpd for current activities. Peak activity materials delivery of inert waste will reduce on-site PM-10 generation from daily cover extraction and hauling with minimal PM-10 emissions differences. Additionally, **Mitigation Measures 4.2-1, 4.2-2, and 4.2-3** are proposed to reduce PM-10 to less than significant levels.

Increased MSW intake rate will increase the levels of daily LFG production. If/when the capacity of the existing flare system is reached an additional flare and more collection wells will be needed. SCAQMD regulations dictate LFG disposal requirements that will limit fugitive LFG escape as a source for odor. Although significant daytime odor impacts are not anticipated, compliance with Title 27 and AVAQMD Rule 1150.1 will ensure no problem arises.

No odor complaints regarding the landfill have been registered with the AVAQMD. As long as additional LFG collection and disposal capacity is developed in conjunction with an increased disposal rate, setback from the nearest homes will be adequate to preclude creation of any adverse odor impact from “fugitive” landfill gas. Although significant impacts are not anticipated, **Mitigation Measure 4.2-4** is proposed to ensure potential odor problems do not become significant.

Although GHG/global warming-related significant impacts are not anticipated, **Mitigation Measures 4.2-5 through 4.2-7** are proposed to reduce the project’s cumulative contribution to GHG/global warming to the extent feasible.

The cumulative impact (NO<sub>x</sub> and PM-10) of existing operations, along with the incremental increases associated with the proposed increase in disposal volume and other cumulative growth, and development projects in the area, is considered a cumulatively significant unavoidable impact. Compliance with existing AVAQMD rules and regulations and **Mitigation Measure 4.2-1 through 4.2-3** will reduce the cumulative impacts to PM-10, but they will remain significant and unavoidable on a cumulative basis.

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### 4.3 HYDROLOGY AND WATER QUALITY

#### 4.3.1 INTRODUCTION

A hydrology and hydraulics design study and a capital floodplain analysis report was prepared in June 2004, and updated in October 2005, by Golder Associates to evaluate the impacts of the proposed project on off-site flows to Anaverde Creek and to assess the potential for scour within Anaverde Creek in the vicinity of the project site. Findings of the report are summarized below. The full text of the report is contained in this EIR document as **Appendix D-1**.

In preparing this report, previous hydrology studies conducted by Kleinfelder, Inc. for the 1992 certified EIR for Landfill II were reviewed and incorporated as necessary. A hydrologic study for the Anaverde Creek Capital Flood was performed by AKM Consulting Engineers in 1991 and reviewed by B & E Engineers (ca. 1994) with adjustments made by AKM in 1994 (AKM 1995). URS Corporation conducted a study under the direction of the City of Palmdale in 2002 (URS 2002) relative to the upper Anaverde Watershed. The purpose of this study was to evaluate alternatives for detention storage. More recently, Pacific Advanced Civil Engineering (PACE) prepared an Anaverde Creek Existing and Proposed Condition Hydrology Study (Pace, 2005). The PACE study was prepared to evaluate the existing hydrology conditions in Anaverde Creek as well as hydrology conditions after residential developments are completed, the construction of this project was not considered in the PACE study. The City of Palmdale has reviewed and approved PACE's hydrologic analysis. The peak flood flows reported for existing conditions (i.e. the most conservative) were used for the Golder Study flood study.

According to the URS study, under peak flood conditions, runoff from the 10,200 acre watershed that drains to Anaverde Creek will flood areas within the City of Palmdale. The URS study evaluated options to reduce flows in Anaverde Creek, including options upstream of the project. If any of these options were to be implemented the flows would be reduced at the project site and therefore the existing condition would be considered the worst case scenario.

Buena Engineers and ETE-Virogroup conducted prior water quality analysis of the site and their analyses were also reviewed by Golder Associates. The 1992 certified EIR for Landfill II included detailed descriptions of the water quality conditions in the project area based on literature reviews, consultations, and field surveys conducted by Kleinfelder, Inc. For the existing and currently proposed expansion/consolidation, SCS Engineers conducts ground water monitoring and prepares reports for submittal to the RWQCB, summary excerpts are included in **Appendix D-2**. The reports discuss the ground water quality conditions and potential impacts to water quality. In preparation of this EIR the data was reviewed and summarized in this section. The Kleinfelder reports are contained in Appendix D of the original EIR.

#### 4.3.2 EXISTING CONDITIONS

##### PRE-DEVELOPMENT HYDROLOGY

The proposed project site is immediately adjacent to the northern bank of the Anaverde Creek drainage, a linear topographic depression formed by the San Andreas Fault. A linear northwest-southeast trending set of continuous ridges located immediately north of Anaverde Creek forms the northern boundary of the watershed. Surface elevations at the site range from approximately 2,840 feet near the toe of the landfill

to 3,200 feet above mean sea level (msl) in the ridgeline to the north. The ground surface at the site slopes to the south and southeast, toward Anaverde Creek. Anaverde Creek drains to the east towards Tierra Subida Avenue, Pelona Vista Park, and the City of Palmdale.

The pre-development surface water drainage at the landfill can be separated into three basic elements:

- 1) Run-off from undeveloped land (800 and 900 series of hydraulic sub-basins) located west of the current landfill flows south to Anaverde Creek at Reporting Points A and B (see **Figure 4.3-1**, Pre-Development Hydrology Map with 50-Year Capital Flood Isohyets).
- 2) Run-off from undeveloped or partially developed land (including portions of Landfill I) (700 series of hydraulic sub-basins) is conveyed southwards to Anaverde Creek at Reporting Point C (see **Figure 4.3-1**, Pre-Development Hydrology Map with 50-Year Capital Flood Isohyets); and
- 3) Run-off from the eastern portion of Landfill I and existing facilities (600 series of hydraulic sub-basins) to Anaverde Creek at Reporting Point D (see **Figure 4.3-1**, Pre-Development Hydrology Map with 50-Year Capital Flood Isohyets).

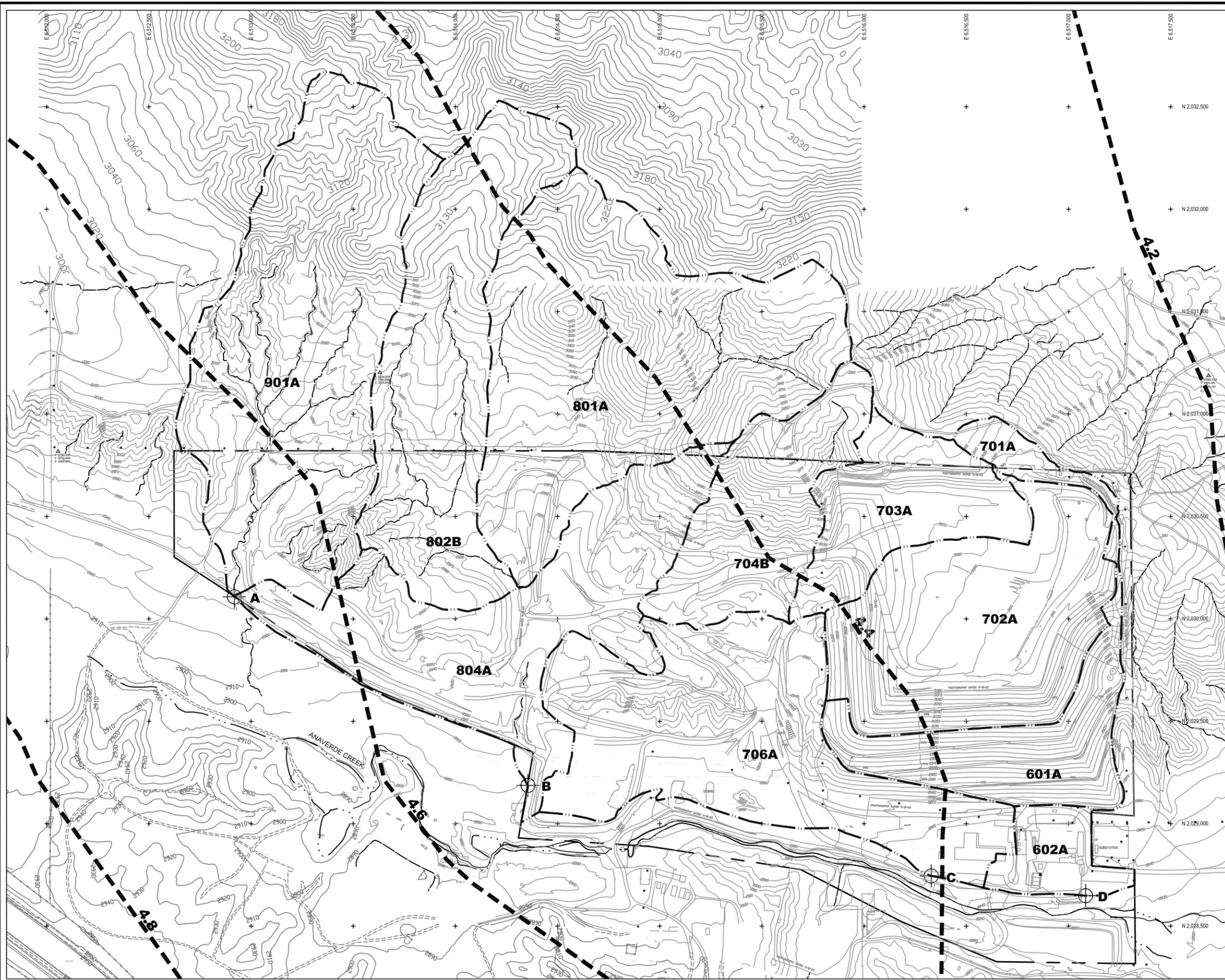
The City of Palmdale Drainage Master Plan requires peak flows discharging from developed areas be attenuated to 85percent of the pre-development peak flow.

The City of Palmdale further required (in a letter dated January 29, 1999 and sent to WMI) that the bulked Los Angeles County Department of Public Works (LACDPW) Capital Flood be used for the hydrologic evaluations. In addition, the design of on-site drainage systems must be evaluated in accordance with the California Code of Regulations (CCR) Title 27 requirement for the 100-year, 24-hour event.

The pre-development hydrologic study was performed in accordance with the methods described in the LACDPW Hydrology and Sedimentation Manual Addendum. The findings of the pre-development hydrology study are indicated in Tables 1 through 6 of the hydrology and hydraulics study (**Appendix D-1** of this document).

For purposes of determining the permissible post-development peak flow contribution to Anaverde Creek ( $Q_{\text{DESIGN}}$ ), the burn-adjusted, clear water pre-development peak flows at each of the four reporting points (A-D) were added to give a conservative pre-development value of 266 cubic feet per second (cfs) (**Table 4.3-1**). This value was then multiplied by 85percent to give a pre-development  $Q_{\text{DESIGN}}$  value of 226 cfs. The attenuated flow is conservative since it provides for attenuation of off-site flows to 85percent of the existing peak flow. Total debris production to Anaverde Creek was computed in a similar manner by summing the debris production at the four reporting points (A-D), giving a total pre-development debris production of 5,534 cubic yards (cy).

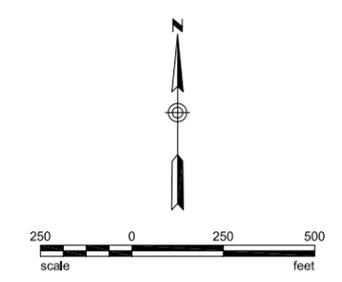
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LEGEND	
	PROPERTY BOUNDARY
	GEOLOGIC FAULT LINE EXISTING
	INDEX TOPOGRAPHIC CONTOUR
	EXISTING UNIMPROVED ROAD
	EXISTING PAVED ROADS
	EXISTING BUILDINGS
	EXISTING FENCE LINE
	HISTORICAL "BLUE" LINE
	COORDINATE GRID
	REPORTING LOCATION
	HYDROLOGIC SUBBASIN BOUNDARY
<b>701A</b>	HYDROLOGIC SUBBASIN DESIGNATION
<b>4.4</b>	50-YR CAPITAL FLOOD ISOHYET (DEPTH IN INCHES)

**NOTES**

1. TOPOGRAPHIC BASE MAP COMPOSITE FROM ANALYTICAL PHOTOGRAMMETRIC SURVEYS, INC., SURVEY FLIGHTS DATED JUNE 11, 1992 (FOR WESTERN AREAS) AND FROM WALKER & ASSOC. FLIGHT DATED NOVEMBER 11, 2003 (FOR LANDFILL PROPERTY AREA), CONTOUR INTERVAL 10 FEET.
2. LACDPW SOIL TYPE BOUNDARIES TAKEN FROM "ANAVERDE CREEK BASIN HYDROLOGY STUDY, UPSTREAM OF ANTELOPE VALLEY FREEWAY", AKM CONSULTING ENGINEERS, 1991 AND ORTHO-RECTIFIED TO CALIFORNIA STATE PLANE.



**Figure 4.3-1**  
**Pre-Development Hydrology Map**  
**with 50-year Capital Flood Isohyets**

**TABLE 4.3-1  
PRE- AND POST-DEVELOPMENT PEAK CLEARWATER FLOWS  
AT REPORTING LOCATIONS**

Reporting Location	Computed Peak Flow Rate		
	Pre-Development (ft <sup>3</sup> /s)	Post-Development <sup>1,2/</sup> w/o basins (ft <sup>3</sup> /s)	Post-Development <sup>3/</sup> w/ basins (ft <sup>3</sup> /s)
A	16.0	156.0	120.0
B	93.0	97.0	3.0
C	111.0	7.0	7.0
D	46.0	30.0	30.0
Anaverde Creek <sup>4/</sup>	<b>266.0</b>	<b>290.0</b>	<b>160.0</b>
85% Attenuation of Pre-Development Meets Attenuation Criteria:		226.0 NO	226.0 YES

Source: Golder Associates

- <sup>1/</sup> Post-development computed peak flow rate for reporting location A derived by adding hydrograph peaks from 105A and 204A. This results in a minor acceptable loss in accuracy because:
  - a. The time-to-peaks of the hydrographs are less than 5 minutes apart, and
  - b. Negligible attenuation occurs in the channel segment between the outfall of the West Pond and reporting location A.
- <sup>2/</sup> The peak flows do not account for the effects of any attenuation caused by proposed detention ponds.
- <sup>3/</sup> The peak flows do account for the effects of any attenuation caused by proposed detention ponds.
- <sup>4/</sup> Pre- and post-development peak flow rates to Anaverde Creek were conservatively estimated by summing the peak values at the various reporting points.

**CAPITAL FLOOD FLOODPLAIN ANALYSIS**

As stated previously, the City of Palmdale requested that the bulked LACDPW Capital Flood be used for the floodplain and surface water runoff evaluations. Additionally, the design of on-site systems must be evaluated in accordance with the California Code of Regulations (CCR) Title 27 requirement for the 100-year, 24-hour event. The Capital Flood is the runoff from a 50-year frequency design storm assuming the ground has burned and is bulked based on burn debris (i.e. type of vegetation), further the Capital Flood assumes the ground is already saturated. The CCR requires landfill facilities be designed to manage the runoff from 100-year, 24-hour storm event. Peak runoff is determined using the Modified Rational Method. For this site the Capital Flood is a more severe design criterion.

The flood study area encompasses regions within unincorporated Los Angeles County and the City of Palmdale. The flood elevations for Anaverde Creek were obtained from the Flood Insurance Study (FIS) for the City of Palmdale (Community Panel Numbers 060144 0020D and 065043 0245C) (March 1998). The Anaverde Creek reach adjacent to the site is characterized by deep incised channels intermixed with wide, flat channels. The deep narrow sections have steep banks, some near vertical, particularly on the north bank. The north bank in this same area also shows signs of severe undercutting. Vegetation in the bottom and on the lower right bank of the channel in this reach consists of large brush and trees.

Based upon a field reconnaissance performed by Golder, the only existing hydraulic structures in the reach adjacent to the project are a culvert and metal bridge (see photos on Figures 3 through 5 in **Appendix D-1**). The corrugated metal culvert is located upstream of the bridge. It is approximately 30 inches in diameter and is currently blocked with tumbleweeds. Due to the relatively small diameter and

high potential for plugging, the conveyance capacity of the culvert during an extreme flood event is expected to be negligible. The culvert outlet is roughly 20 feet upstream of the bridge and a large bush is growing between the culvert and bridge. The bridge is constructed of a stamped metal deck laid on I-beams. There is at most two feet of clearance from the center of the bridge to the channel bottom. However, due to the location of the bush and the proximity of the culvert, the conveyance capacity under the bridge during an extreme flood event is expected to be negligible. The bridge appears to have been in place for quite some time and therefore has likely been overtopped by flood flows. There is no evidence that the bridge has moved, it is outside the project limits, and so it is assumed that it will remain in place during the Capital Flood event. Refer to **Appendix D-1** for Photo 6/Figure 5 which show the bridge and culvert.

### **SURFACE WATER QUALITY**

The Anaverde Creek is the nearest surface drainage/surface water feature to the project site. Anaverde Creek lies adjacent to the site, but is separated from the proposed landfill use area by several dirt roadways or excavated basins with marginal roadway berms. This reach of the creek is narrow and rocky, with steeply incised banks, both sides of which have been filled or otherwise disturbed for much of its length. Although the creek channel shows signs of seasonal high-water flows, the persistent drought conditions of the past several decades likely have reduced the frequency with which it carries runoff, and there was no evidence of surface water between November, 2003 and May, 2004. As reported in the 1992 certified EIR for Landfill II, samples collected in March 1991 showed TDS concentrations of 258 ppm which is considered good by the Federal Drinking Water Standards. There is currently construction of residential housing upstream of the proposed project, within the remaining portions of the watershed. There have been little to no changes in the watershed and therefore no changes in the surface water quality would be expected at this time.

### **GROUNDWATER HYDROLOGY / FLUCTUATION**

The project site is located in a structurally isolated tectonic block between the Little Rock fault to the north, and the San Andreas Fault Zone to the south. Within the small subbasin, groundwater is thought to generally flow south and subparallel to the San Andreas Fault when in close proximity to the fault. South of the San Andreas Fault Zone, groundwater appears to flow to the northeast from the Sierra Pelona Mountains toward the Anaverde Valley. Groundwater movement within the Anaverde Valley shifts to the southeast under the influence of the San Andreas Fault Zone, which acts as a groundwater barrier.

Three members of the late Miocene-age Anaverde Formation have been mapped in the area of site; the gypsiferous claystone member beneath the southern portion of the site, and the buff-colored arkosic and red-colored arkosic members beneath the northern portion of the site. Recent-age alluvial deposits composed of a gravel, sand, and silt mixture that is associated with Anaverde Creek, extend from the creek northward beneath the southern portions of site. The alluvial deposits overlie the claystone member of the Anaverde Formation (Buena Engineers, Inc., 1985).

Groundwater in the immediate vicinity of the site has been interpreted, based on the monitoring of wells MW-1 to MW-6, which obtained data within the upper claystone member of the Anaverde Formation (Tac) and within the overlying alluvial deposits (see **Figure 4.1-1**, Geology and Fault Zones contained in Section 4.1). Slug test results and review of the site geology suggests that groundwater appears to also occur in perched zones within the overlying alluvium or at the base of the alluvium near the contact with the claystone. Based upon measured differences in groundwater elevations and geochemistry, groundwater

beneath the AVPL appears to be hydraulically and geochemically separate from water-bearing zones north of the Little Rock Fault and south of the San Andreas Fault (Kleinfelder, 1991). Groundwater is recharged by infiltration of precipitation, which averages 8 inches per year.

Groundwater levels reported by Kleinfelder (1991) ranged from 24 to 74 feet below ground surface (bgs) within the Palmdale Landfill block. Depth to groundwater measured in the on site monitoring wells as shown in **Table 4.3-2** ranged from 27 to 76 feet bgs. Water level fluctuations at each on-site well appear to be linked to seasonal precipitation trends (GCE, 2000). The range of fluctuation from February 1999 to May 2004 is relatively minor as evidenced by the consistent measured depth. According to groundwater data from May 2004 (SCS, 2004), the groundwater is over 5 feet below the lowest adjacent grades proposed for the landfill base lining system (see **Figure 3-5**, Proposed Base Grading Plan contained in Section 3.0).

South of the San Andreas Fault zone, groundwater levels range from 1 to 60 feet below ground level. Perennial surface water occurs in sag ponds within the fault rift zone (Draft EIR Report for Antelope Valley Public Landfill Expansion, October 1991). North of the Little Rock Fault, groundwater levels are as much as 400 feet below ground surface (ETE-Virogroup, 1994). These variations in groundwater elevations suggest the hydrologic isolation of the Palmdale Landfill block.

**TABLE 4.3-2  
ON-SITE GROUND WATER LEVELS**

Monitoring Well Number	Ground Water Monitoring Data (February 1999 to May 2004) <sup>1/</sup>		
	Maximum Elevation (ft-MSL) <sup>2/</sup>	Minimum Elevation (ft-MSL) <sup>2/</sup>	Range (ft) (Max – Min)
MW-1	2904.93 (33 ft) 2/3/1999	2900.76 (38 ft) 5/18/2004	4.17
MW-2a	2794.86 (72 ft) 4/17/2000	2788.47 (73 ft) 10/29/1999	6.39
MW-3	2774.43 (61 ft) 5/04/1999	2761.33 (76 ft) 7/17/2001	13.10
JHK-1	>2788 (>71 ft) 1999 to 2004	>2788 (>71 ft) 1999 to 2004	-
MW-4	2878.53 (27 ft) 5/15/2003	2873.58 (32 ft) 10/23/2001	4.95
MW-5	2824.28 (60 ft) 10/23/2001	2822.71 (61 ft) 5/18/2004	1.57
MW-6	2829.65 (43 ft) 3/3/2004	2828.45 (45 ft) 2/18/2003	1.20

Source: SCS

<sup>1/</sup> Monitoring period February 1999 to May 2004 for all wells except MW-4 and MW-5 began in October 2000 and MW-6 began February 2003.

<sup>2/</sup> Data shown is the interpreted ground water elevation, depth to water from ground surface, date of measurement.

## GROUNDWATER QUALITY

Groundwater quality beneath the site has been characterized as poor. Kleinfelder, (1991) reported total dissolved solids (TDS) concentrations of 3,800 parts per million (ppm) in 1989, with elevated levels of sulfate, chloride, calcium, and iron. In May 2004, TDS concentrations ranged from 1,300 to 17,000 ppm with high levels of sulfate, chloride, calcium, and iron (SCS Engineers, 2004). These high levels of inorganic constituents are consistent with groundwater occurring within sedimentary rocks containing gypsum.

Groundwater quality south of the San Andreas Fault Zone is considered acceptable for most uses. TDS concentrations are 568 ppm. Measured levels of sulfates, chloride, calcium, and iron are slightly higher than California Drinking Water Standards (ETE-Virogroup, 1994). North of the Little Rock Fault, the groundwater quality is characterized as good. Maximum TDS concentrations there are 300 ppm, and levels of sulfates, chloride, calcium, and iron are below Federal Drinking Water Standards maximum levels (ETE-Virogroup, 1994). Large differences in water quality between these three groundwater zones further suggest that the Palmdale Landfill block is hydraulically isolated.

The results of quarterly groundwater monitoring at six monitoring wells have not identified any existing degradation to groundwater from the landfill. Low levels of benzene and other petroleum related constituents that have been detected in well MW-3 appear to be related to former underground storage tanks (USTs) south of the current fill area at Landfill 1. Well MW-3 is located hydrologically downgradient from the former UST area. The former UST area included a 12,000 gallon diesel tank, 12,000 gallon gasoline tank and 1,200 gallon waste oil tank. These tanks were removed in November 1999 (GCE, 2000). SCE Engineers (SCS, 2004) conducted additional investigations of the petroleum related contamination; SCS concluded that the contamination was due to the former UST operation. SCS recommended that no further investigation is needed and that remediation of the contamination is not warranted principally due to the fact that the tanks have been removed and the impact is of limited extent. The findings and recommendations are currently being evaluated by the RWQCB.

### 4.3.3 THRESHOLD OF SIGNIFICANCE

Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a guideline of consequences that are deemed to have a significant effect on the environment. According to the Environmental Checklist, a project may be deemed to have a significant hydrology and water quality resources effect if it will:

- Violate any water quality standards or waste discharge requirements;
- 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);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site;

- 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 that would result in flooding on- or off-site;
- 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;
- Otherwise substantially degrade water quality;
- 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;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- 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
- Inundation by seiche, tsunami, or mudflow.

#### 4.3.4 PROJECT IMPACTS

##### POST-DEVELOPMENT HYDROLOGY/FLOODING

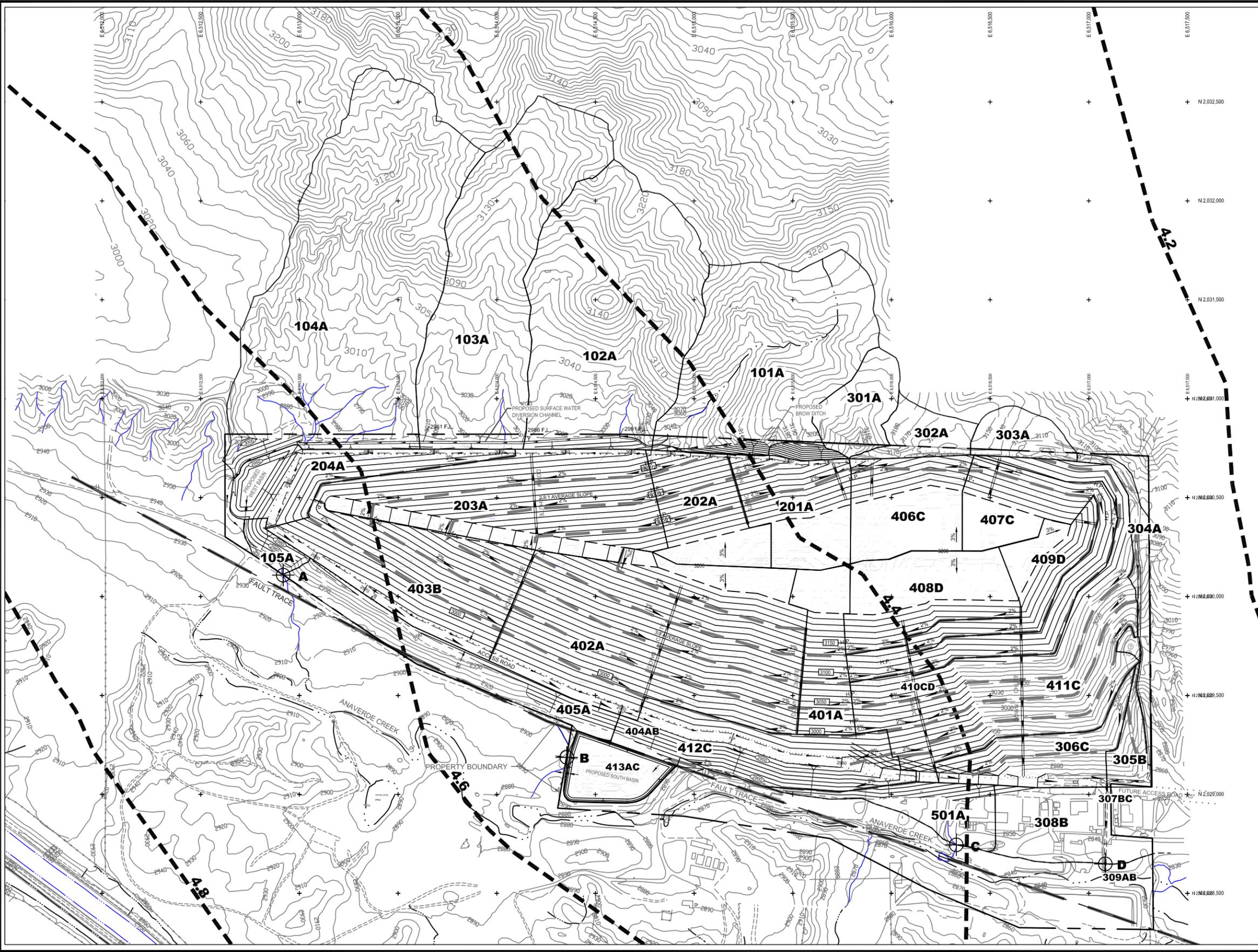
**Impact 4.3-1** Potential for post-development flows during flooding events not meeting the 85% pre-development attenuation criteria of 226 cfs.

The post-development surface water drainage at the AVPL can be separated into five basic elements:

- 1) Run-on from the north (100 series of hydraulic sub-basins) undeveloped land located outside of the landfill property is conveyed westwards and southwards around the landfill perimeter to Anaverde Creek at Reporting Point A (see **Figure 4.3-2**, Post-Development Hydrology Map with 50-Year Capital Flood Isohyets).
- 2) Run-off from the northwest quarter (200 series of hydraulic sub-basins) of the landfill is conveyed through the proposed West Basin to combine with the run-on from the north flowing to Anaverde Creek at Reporting Point A (see **Figure 4.3-2**, Post-Development Hydrology Map with 50-Year Capital Flood Isohyets).
- 3) Run-off from the southern and northeastern portions (400 series of hydraulic sub-basins) of the landfill is conveyed through the proposed South Basin to Anaverde Creek at Reporting Point B (see **Figure 4.3-2**, Post-Development Hydrology Map with 50-Year Capital Flood Isohyets).
- 4) Run-off from a small area south of the landfill (500 series of hydraulic sub-basins), near the west edge of the existing landfill discharging to Anaverde Creek at Reporting Point C (see **Figure 4.3-2**, Post-Development Hydrology Map with 50-Year Capital Flood Isohyets).
- 5) Run-off from the southeastern portion of the landfill and a relatively small portion of the run-on north of the property boundary (300 series of hydraulic sub-basins) is conveyed eastwards and southwards through the proposed channels and culverts to Anaverde Creek at Reporting Point D (see **Figure 4.3-2**, Post-Development Hydrology Map with 50-Year Capital Flood Isohyets).

The objective of the post-development hydrologic analysis is to evaluate the run-off contribution to Anaverde Creek from the land located within and up-gradient of, the ultimate landfill footprint after the proposed landfill expansion/consolidation has occurred. The post-development peak flow contribution to Anaverde Creek is computed and compared to the permissible value,  $Q_{DESIGN}$ , (226 cfs), to ensure that proposed project will not result in peak flow exceeding 85percent of the pre-development peak flow value. Post-development debris production is used to determine the required debris storage volume in the

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**LEGEND**

- PROPERTY BOUNDARY
- GEOLOGIC FAULT LINE EXISTING
- INDEX TOPOGRAPHIC CONTOUR
- EXISTING UNIMPROVED ROAD
- EXISTING PAVED ROADS
- EXISTING BUILDINGS
- EXISTING FENCE LINE
- HISTORICAL "BLUE" LINE
- COORDINATE GRID
- PROPOSED BASE GRADE CONTOURS
- PROPOSED REFUSE FILL GRADE CONTOURS
- SLOPE INDICATOR
- GRADE INDICATOR
- REPORTING LOCATION
- HYDROLOGIC SUBBASIN BOUNDARY
- HYDROLOGIC SUBBASIN DESIGNATION
- 50-YEAR CAPITAL FLOOD ISOHYET (DEPTH IN INCHES)

- NOTES**
1. TOPOGRAPHIC BASE MAP COMPOSITE FROM ANALYTICAL PHOTOGRAMMETRIC SURVEYS, INC., SURVEY FLIGHTS DATED JUNE 11, 1992 (FOR WESTERN AREAS) AND NOVEMBER 8, 2001 (FOR OPERATING LANDFILL AREA). CONTOUR INTERVAL 10 FEET.
  2. LACDPW SOIL TYPE BOUNDARIES TAKEN FROM "ANAVERDE CREEK BASIN HYDROLOGY STUDY, UPSTREAM OF ANTELOPE VALLEY FREEWAY", AKM CONSULTING ENGINEERS, 1991 AND ORTHO-RECTIFIED TO CALIFORNIA STATE PLANE.



**Figure 4.3-2**  
**Post Development Hydrology Map**  
**with 50-Year Capital Flood Isohyets**

proposed south and west retention/detention basins. Peak bulked flows are used to size the flow control structures prior to reaching the basins.

The post-development hydrologic analysis was performed in accordance with the methods described in the LACDPW Hydrology and Sedimentation Manual Addendum. Following the guidance of the City of Palmdale, the landfill is assumed to have the same debris potential area as the pre-development area and debris production calculations were performed in a similar manner as the pre-development condition.

Due to space limitations, both the south and west basins will combine the debris capture and flood attenuation functions in a single basin. Both basins were sized to store the estimated volume of debris (2,073 yd<sup>3</sup> at 413 AC for the proposed South Basin and 866 yd<sup>3</sup> at 204AC for the proposed West Basin).

Inputs and outputs of the post-development hydrology analysis are indicated in Tables 4 through 9 of the hydrology and hydraulics study (**Appendix D-1** of this document).

Post-development debris production was computed in a manner similar to the pre-development value. The estimated post-development debris production to Anaverde Creek is 2,378 cubic yards (see Table 5 in **Appendix D-1** of this document). The debris captured in the basins represents a significant reduction in debris reaching Anaverde Creek compared to the pre-development condition. Additionally, areas of the project that potentially contribute debris to Anaverde Creek will be controlled to the extent possible with best management practices (BMPs) such as straw bales and silt fences.

The results of the post-development analysis are shown in **Table 4.3-1** earlier in this section. The conclusions indicate that the post-development flows without debris basins of 290 cfs do not meet the 85% pre-development attenuation criteria of 226 cfs. Without mitigation or design improvements, this would be considered a significant impact. As stated previously, two (2) debris basins are proposed to eliminate potential impacts. **Table 4.3-1** indicates that the post-development (with debris basins) flows of 160 cfs meet the 85percent pre-development attenuation criteria.

The following is a summary of the inflow, outflow, and tributary area for the West and South Basin debris/detention ponds.

Location	Peak Inflow (cfs)	Peak Outflow (cfs)	Tributary Area (acres)
West Basin	39	3	34
South Basin	97	3	105

**Cover Soil Erosion Loss Estimates**

The objective of the landfill cover soil erosion loss estimates is to evaluate the soil loss potential due to water erosion using the Revised Universal Soil Loss Equation (RUSLE), developed by the US Department of Agriculture (USDA). RUSLE considers soil and vegetation type as well as physical and climatic features of the landfill area.

Based on the soil erosion analyses presented in Appendix C of the hydrology and hydraulics study (**Appendix D-1** of this document), the average soil loss is approximately 2.22 ton/acre/year, or approximately 187 cubic yards per year for the landfill area. There is no specific regulatory requirement (CCR Title 27) for allowable soil loss from the cover of municipal landfills, only that an erosion resistant

layer be provided. However, the soil loss is within the limits of 2 to 5 tons/acre/year which is considered acceptable soil loss as indicated by the USDA (1978). The computed soil loss is at the lower, more conservative, range of the recommended allowable erosion limit.

### **FLOODPLAIN ANALYSIS**

The floodplain analysis evaluations presented in this section are required to address:

- The potential for flooding of the landfill facility under existing and proposed site conditions.
- Possible changes to flood levels due to development of the site.
- Development of a basis for evaluating improvement designs for Anaverde Creek.

The report prepared by Golder Associates, contained in Section 2 of **Appendix D-1** of this document, presents the results of the hydraulic evaluation of the floodplain and channel velocities associated with the design storm event, and it provides a basis for evaluation of proposed scour protection measures north of the Anaverde Creek channel within the landfill study area.

### **Results of the Modeling/Conclusions**

The flood level resulting from the LACDPW bulked Capital Flood is higher than the 100-year flood level. The water surface profile is highly variable. This variability is due to the abrupt channel contractions and expansions and the large differences in Manning's roughness coefficients. Appendix B, Section 2, of the hydrology and hydraulics study (**Appendix D-1** of this document) presents the HEC-RAS cross-sections resulting from both the LACDPW Capital Flood and the 100-year FEMA flood for Anaverde Creek.

The existing or proposed landfill expansion is not expected to be impacted by either flood event. There is however a potential for scour in the channel. The HEC-RAS model calculated channel velocities for flood flows in the Anaverde Creek exceeding 18 feet per second (fps). Channel velocities during the LACDPW Capital Flood were estimated to range from about 3 fps to a maximum of 29 fps through stretches of Anaverde Creek adjacent to the project site. Typical flood velocities in the study area are in the 6 to 16 fps range.

During extreme flood events in the main channel of Anaverde Creek, the analyses indicate that high velocities may occur. The high flow velocities will scour and continue to undercut the channel banks. In the absence of mitigation or project design measures, the channel banks could erode, therefore causing potential impacts to the landfill and ancillary facilities during a flood event.

### **Anaverde Creek Scour/Erosion Protection System**

**Impact 4.3-2** Potential for erosion at the north bank of the Anaverde Creek.

The north bank of Anaverde Creek is sparsely vegetated. Thus, it is susceptible to erosion, undercutting, and scour, particularly during floods. The south bank of Anaverde Creek is protected from scour in most locations with well-established vegetation, to include large trees. Additionally, existing concrete rubble, which acts as rip-rap, also protects portions of the south bank. The landfill site and ancillary facilities would be impacted in the event of substantial loss of the north embankment of Anaverde Creek.

To protect the landfill and ancillary facilities, a slope protection design was developed that would protect the north bank of Anaverde Creek channel, within the project area, from future scour. As stated above, the slope protection is required to prevent future flooding impacts. The design involves constructing a

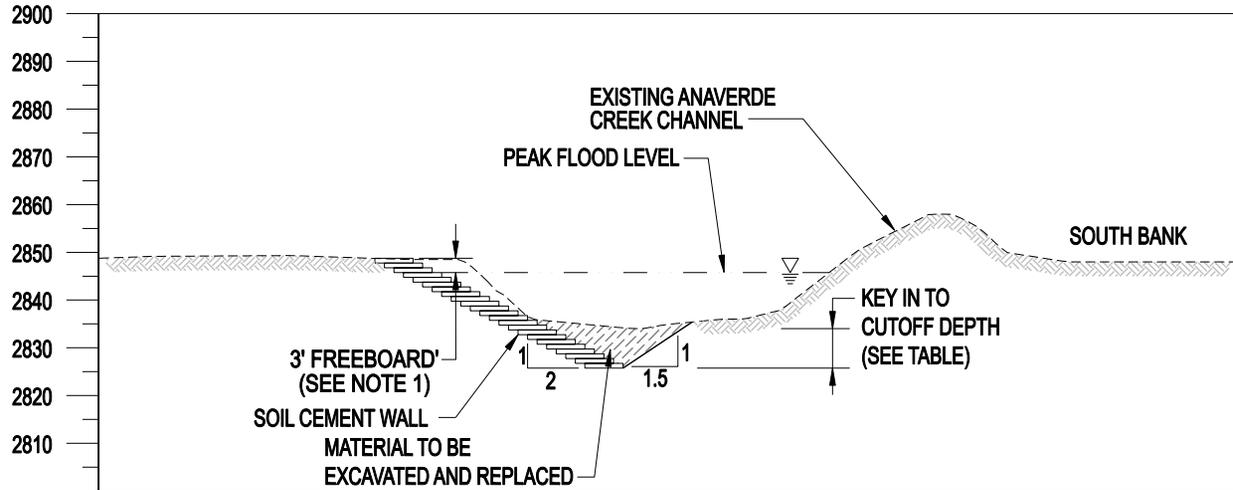
soil cement barrier or articulated concrete block armoring on the north bank of the existing Anaverde Creek channel (see **Figure 4.3-3**, Scour Protection Cross Sections). The construction of a soil cement barrier would require sloping the existing bank to 2H:1V (Horizontal:Vertical) side slopes. The excavated soils would be mixed with cement then returned to the north bank of Anaverde Creek where it will be placed in thin lifts and compacted. The resulting barrier would provide an approximately 8-foot wide soil cement barrier that will be less erodible than existing conditions, thus eliminating the potential for scour. The north bank protection will extend to a height of three feet above the estimated bulked Capital Flood elevation. The armoring will also be extended below the existing bottom of channel elevation to prevent failure of the armored layer as a result of scour at the toe. The cutoff depth will be determined in accordance with procedures acceptable to the City of Palmdale. Alternative slope protection methods, such as articulated concrete block (see **Figure 4.3-3**, Scour Protection Cross Sections) may be used, where appropriate, in lieu of the soil cement barrier. The design of the slope protection for the site will be finalized at a later date. Final design of scour protection must comply with the requirements of the City of Palmdale and California Department of Fish and Game, if applicable, requirements as well as maintain some flexibility given the proximity to geologic faulting. Some repair of the armoring is likely in the event of major ground rupture. Implementation of **Mitigation Measure 4.3-1** will assure the final scour protection design is implemented consistent with City of Palmdale and Department of Fish and Game requirements. No significant impacts are anticipated following mitigation.

A jurisdictional delineation of Anaverde Creek was performed by Lisa Kegarice of Tom Dodson & Associates to establish “stream bed” limits in accordance with California Department of Fish and Game guidelines and limits of jurisdictional waters in accordance with 33 CFR requirements. Refer to Section 4.4, Biological Resources for a detailed discussion of the delineation. Both of these jurisdictional limits are shown in Figure 2, Section 2, of the hydrology and hydraulics study (**Appendix D-1** of this document). Construction within the stream bed, as noted above, would require additional permits. Please refer to Section 4.4, Biological Resources. However, the bank would be permanently stabilized and there would be no loss of material from the bank thereby minimizing the sediment concerns downstream of the site.

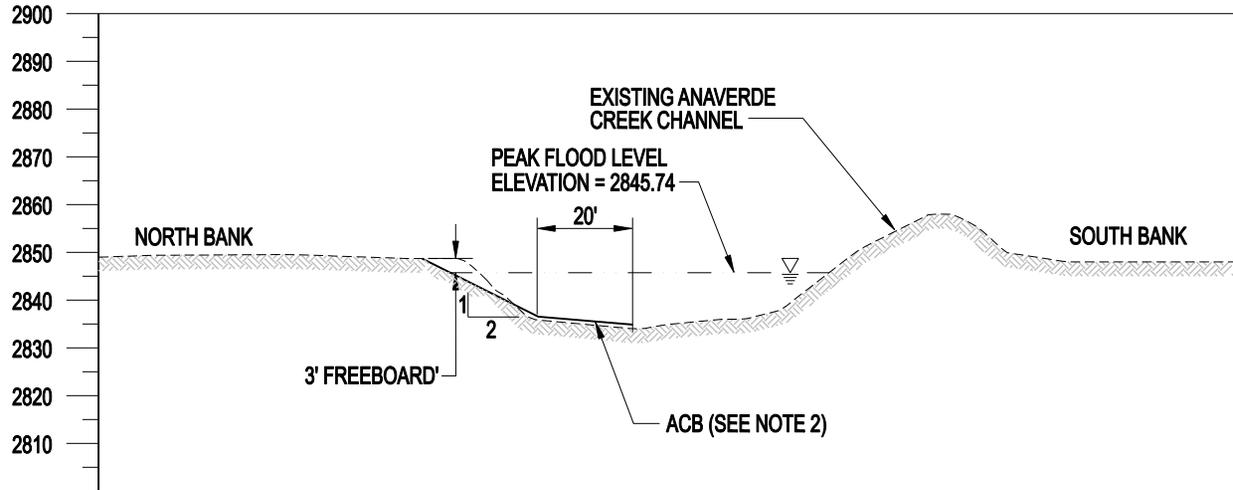
#### **RUNOFF AND SURFACE WATER QUALITY**

**Impact 4.3-3** Potential contamination of the Anaverde Creek and surface water quality.

As indicated previously, the nearest surface water is Anaverde Creek located approximately 300 feet south-southwest of the active landfill site. As indicated in the 1992 certified EIR for Landfill II, Anaverde Creek water collected during the March 1991 sampling event showed TDS concentrations of 258 ppm which is considered good quality by the Federal Drinking Water Standards. The Anaverde Creek is an intermittent stream which flows only during peak flood. No evidence of surface water was observed in the reach of the creek south of the Landfill between November 2003 and May 2004. Although no surface water have been observed recently, a “Stormwater Management Plan” has been proposed to prevent contamination of the Anaverde Creek and surface waters. With implementation of “Proposed Stormwater Management Plan” (see **Figures 3-4**, Stormwater Management Plan in Section 3.0 and 4.3-4, Post-Development Surface Water Control Plan) and implementation of the actions described below, no impacts to surface water quality are anticipated.



**SOIL CEMENT WALL SCOUR PROTECTION ARMORING CROSS SECTION**



**ARTICULATED CONCRETE BLOCK (ACB) SCOUR PROTECTION ARMORING CROSS SECTION**

**MINIMUM CUT-OFF DEPTHS  
PER LACDPW (SEE NOTE 1)**

VELOCITY (fps)	STRAIGHT REACHES (FT)	CURVED REACH (FT)
0 - 6	6	9
6 - 10	8	12
10 - 15	10	15
15 - 18	12.5	18
18 - 20	14	21

**NOTE**

1. SCOUR PROTECTION ARMORING TO BE SOIL CEMENT. BARRIER SHALL BE DESIGNED IN ACCORDANCE WITH REQUIREMENTS OF CITY OF PALMDALE.
2. SCOUR PROTECTION ARMORING TO BE ACB. ACB SHALL BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF PALMDALE.

### Proposed Hydraulic Structures/Stormwater Management Plan

The principal hydraulic structures to be installed at the site between now and final closure of the landfill site will include corrugated metal pipe (CMP) downchutes, concrete channels, soil lined channels, bench crossings, and sedimentation basin(s). Some CMP downchutes, CMP culverts, and drainage channel structures have been designed to accommodate the most significant flows. These selected drainage structures are shown in **Figure 4.3-4**, Post-Development Surface Water Control Plan. The hydraulic structures on and around the landfill will be designed to meet the requirements of the California Code of Regulations Title 27. Final designs will be performed using the selected material types and peak flows for the 100-year 24-hour storm.

#### Detention Basin(s)

Based on the pre- and post-development hydrologic analyses presented in the report, some of the stormwater will have to be detained on-site to attenuate the peak flow discharging from the site to Anaverde Creek to a level that does not exceed  $Q_{DESIGN}$ . It is proposed that this attenuation be accomplished by two new detention basins, as shown on **Figure 4.3-4**, Post-Development Surface Water Control Plan. As was discussed previously, these detention basins are designed to attenuate peak flows during the Capital Flood to fulfill the City of Palmdale's 85% requirement. Both basins are provided with auxiliary spillways designed to pass the 50-year Capital Flood should they be full at the onset of the 50-year Capital Storm (see **Figure 4.3-5**, Typical Riprap-Lined Auxiliary Spillway).

#### Corrugated Metal Pipe (CMP)

CMP downchutes on sideslopes (approximately 40 percent grade) and bench crossings (approximately 10 percent grade) shall have a minimum pipe diameter ranging from 24 to 36 inches in order to accommodate the 100-year 24-year storm event. CMP culverts shall have a minimum pipe diameter ranging from 24 to 48 inches in order to accommodate the same storm event.

#### Benches

Most benches will be graded at a two percent slope and will have a cross-slope of one foot vertical to 15 feet horizontal as shown on **Figure 4.3-6**, Soil-Lined Bench Flowing Full (Typical Cross Section). CMPs have been spaced in order to control erosion of the benches by controlling the maximum flow velocity on the benches. It was assumed that the maximum flow velocity on the benches should be 3.50 feet per second (fps), to minimize erosion, and that a minimum freeboard of six inches would be maintained to prevent overtopping of the benches. The preliminary surface water control plan layout presented on **Figure 4.3-4**, Post-Development Surface Water Control Plan, reflects these conditions.

#### Concrete Channels

Various channel geometries were assumed at the site to evaluate the times of concentration for the different hydrologic studies presented herein. The diversion channel, which will intercept the run-on flows, was assumed to have a bottom width of five feet and a slope of one percent. The concrete channel, which is parallel to the run-on channel and discharges in the proposed West Basin, was assumed to have a bottom width of ten feet and a slope ranging from four to ten percent. The eastern concrete channel which runs north south along the eastern side of the landfill was assumed to have a bottom width of three to five feet and an average slope of 12 percent. Finally, the concrete channel located along the access

road was assumed to have a bottom width ranging from three to five feet and a slope ranging from 0.5 to 10 percent.

#### Stormwater Improvements for New Access Road

A new frontage road will be constructed from Tierra Subida to the landfill entrance (see **Figure 1-4**, Site Plan in Section 1.0 and **Figure 4.7-13**, Proposed Realignment of City Ranch Road to be Opposite Rayburn Road at Tierra Subida Avenue in Section 4.7). The new road will require construction of culverts under the roadway to convey surface water run-off from the hills north of the road to Anaverde Creek south of the road. The culverts will convey water within each of the existing sub-basins so that no significant impact to the peak discharge would occur. The increased amount of impervious surface is minor relative to the overall drainage area and therefore not considered a significant impact to surface water control.

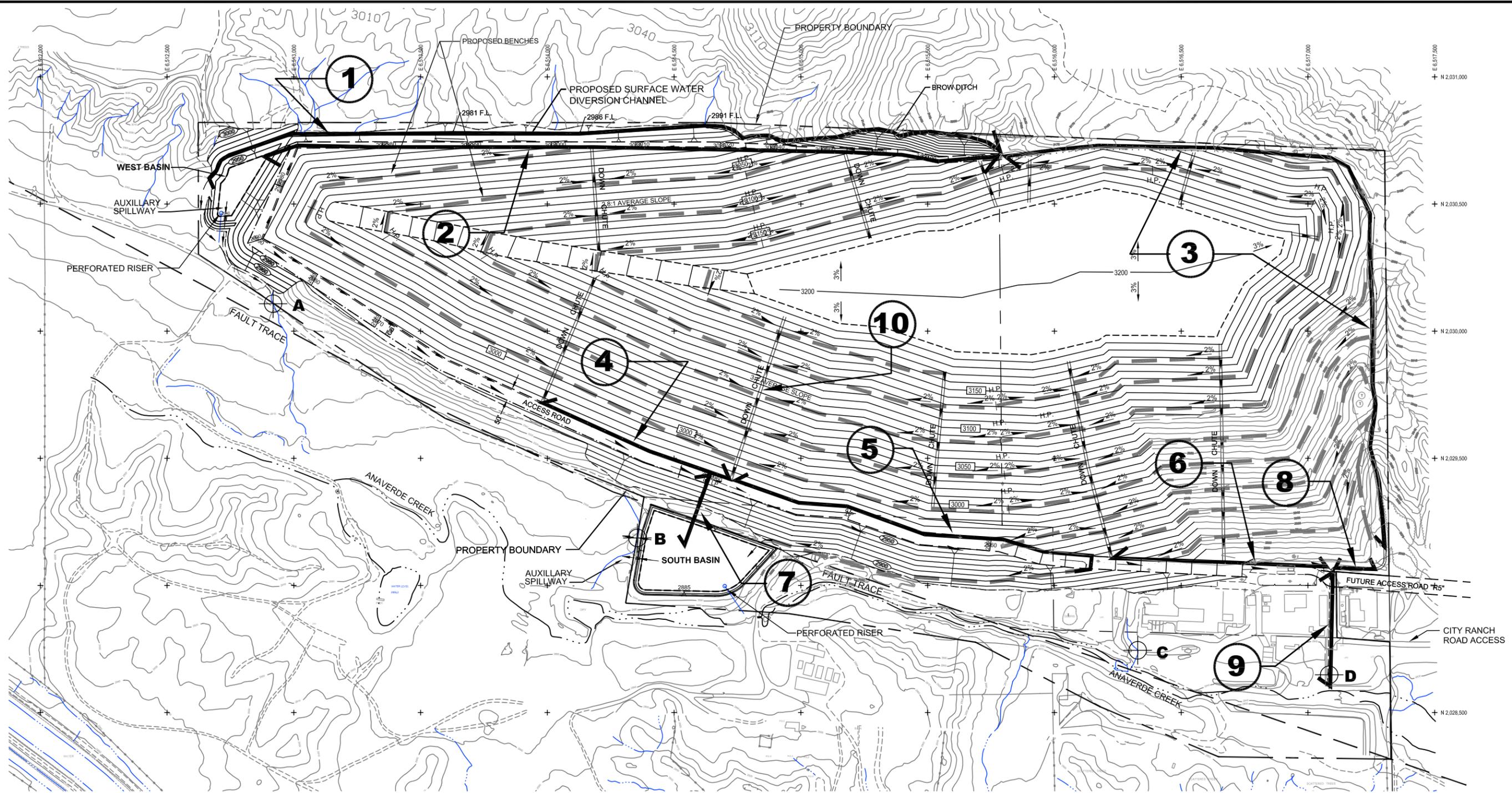
#### Erosion Control

The proposed project, including existing facilities, will implement Best Management Practices (BMPs), as necessary to maintain compliance with National Pollution Discharge Elimination System (NPDES) Phase II requirements to remove sediment (to the extent practicable) from stormwater runoff prior to discharge to Anaverde Creek. In addition to the two proposed retention/detention basins, compliance with NPDES Phase II requirements for BMPs will be implemented, using methods such as preserving existing vegetation, hydro-seeding, soil binders, drainage swales and ditches, straw bales, silt fences, and erosion control blankets as necessary for source control of sediments.

To reduce the potential for scour in the four discharge reporting points to Anaverde Creek, riprap armoring is recommended for the discharge channels at the A, C, and D outfalls to Anaverde Creek. The relatively small flows discharging from the two retention/detention ponds do not require additional armoring as the west basin discharges into the recommended 8-foot wide armored channel going to reporting point A and the south basin discharges directly to Anaverde Creek where the peak flow is expected to be higher.

In addition to the NPDES requirements, other regulations were reviewed for applicability. The primary regulations included:

- U.S. Environmental Protection Agency (USEPA) Total Maximum Daily Loads (TMDLs). Under the Clean Water Act (CWA) TMDLs are imposed on impaired surface water bodies. Anaverde Creek is not listed on the 2000 or 2002 Section 303 (d) List of impaired water bodies and therefore TMDLs are not established for the watershed.
- As part of meeting NPDES requirements Los Angeles County has developed the requirement for “Standard Urban Stormwater Mitigation Plan” (SUSMP). Antelope Valley and this project are outside the jurisdictional limits of the SUSMP program and therefore these requirements are not applicable.



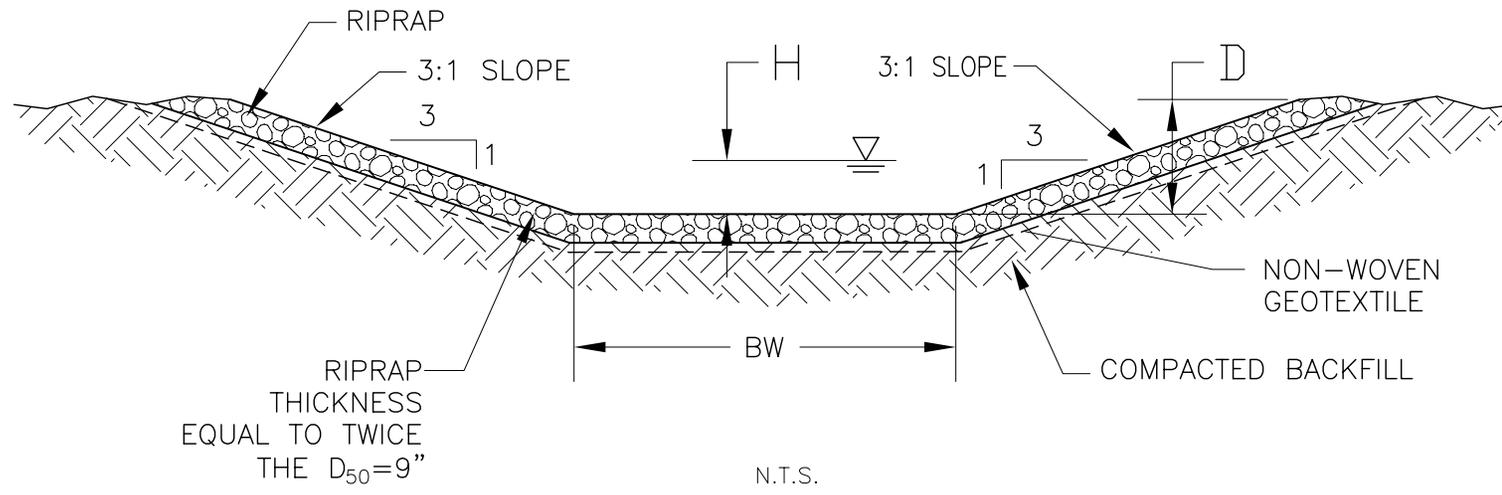
**EXPLANATION**

	LANDFILL PROPERTY BOUNDARY		PROPOSED LIMIT OF REFUSE		COORDINATE GRID
	GEOLOGIC FAULT LINE		PROPOSED BASE GRADE CONTOURS		SLOPE INDICATOR
	EXISTING UNIMPROVED ROAD		PROPOSED REFUSE FILL GRADE CONTOURS		GRADE INDICATOR
	EXISTING PAVED ROADS		PROPOSED ACCESS ROAD		SURFACE DRAINAGE STRUCTURE AND NUMBER
	EXISTING INDEX TOPOGRAPHIC CONTOUR		EXISTING BUILDINGS		
	EXISTING FENCE LINE		EXISTING UTILITY POLES		
	EXISTING VEGETATION FEATURE				

**NOTE**

TOPOGRAPHIC BASE MAP COMPOSITE FROM ANALYTICAL PHOTOGRAMMETRIC SURVEYS, INC., SURVEY FLIGHTS DATED JUNE 11, 1992 (FOR WESTERN AREAS) AND NOVEMBER 8, 2001 (FOR OPERATING LANDFILL AREA). CONTOUR INTERVAL 10 FEET.





BASIN	Q <sub>DESIGN</sub> (cfs)	BW (ft)	H (ft)	D (ft)
WEST	39	14	1.0	2
SOUTH	97	19	1.5	2

**Figure 4.3-5**  
**Typical Riprap-Lined**  
**Auxillary Spillway**

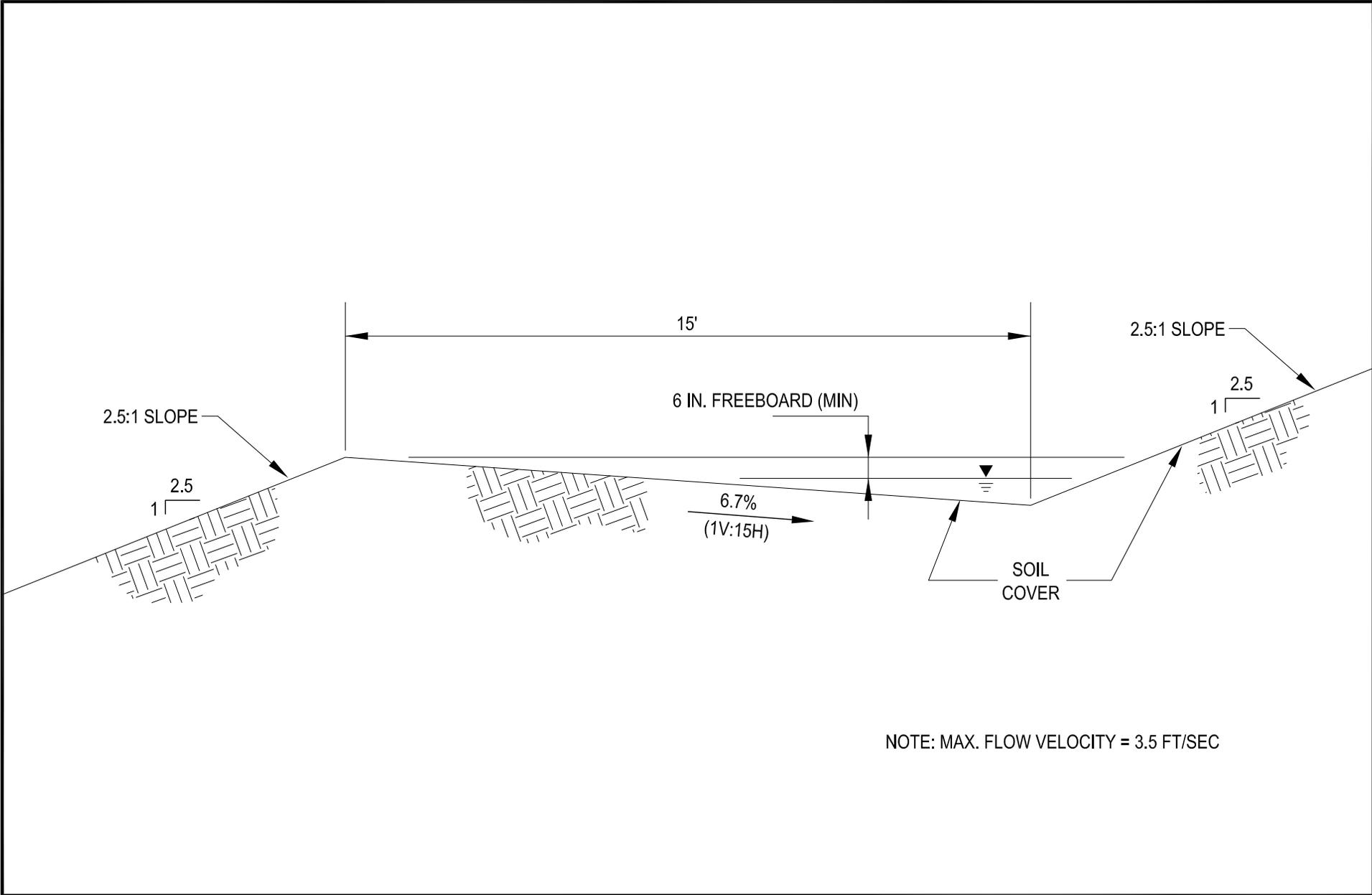


Figure 4.3-6  
Soil-Lined Bench Flowing Full  
(Typical Cross Section)

### GROUNDWATER HYDROLOGY/FLUCTUATIONS

The proposed expansion/consolidation project would not change the prior 1992 certified EIR for Landfill II impact conclusions which were as follows.

The San Andreas and Little Rock faults are located immediately to the south and north of the expansion site, respectively. The San Andreas and Little Rock faults serve as hydraulic barriers and structurally control the movement of groundwater in the project area and the direction of flow of Anaverde Creek. The implementation of the project will not alter the groundwater level and no significant impacts to groundwater fluctuation are anticipated.

### GROUNDWATER QUALITY

**Impact 4.3-4** Potential for groundwater quality impacts, ~~including permeability.~~

The 1992 certified EIR for Landfill II identified that surface water coming into contact with refuse by infiltration could become contaminated. The proposed expansion would also include a Leachate Collection Removal System (LCRS) to control potential surface and groundwater contamination from leachate which will be designed, constructed and operated in accordance with CCR Title 27, Section 20340. No increase in the severity of this impact would be anticipated with the proposed project.

According to the 1992 certified EIR for Landfill II, a groundwater monitoring system, composed of a number of wells will be in place to yield samples that would represent the background water quality and the quality of groundwater passing the points of compliance. The groundwater monitoring system would be designed, constructed, and operated in accordance with the State Water Resources Control Board (SWRCB) regulation as enforced by the Regional Water Quality Control Board (RWQCB).

As indicated in the 1992 certified EIR for Landfill II, the groundwater quality of the small sub-basin containing the existing landfill facility and proposed expansion is of poor quality and non-potable. Water infiltration into the landfill may generate leachate which could have an adverse impact on the existing groundwater. For instance, excess water used for dust-control water could create the potential for leachate formation within the landfill mass. Based on the conclusion that the existing facility and proposed expansion area are hydraulically isolated from adjacent basins, and a leachate collection and removal system are proposed, minimal impacts are anticipated. With the implementation of the LCRS, Composite Liner System, and the Groundwater Monitoring System (see Section 3.0 for a detailed description of the project components), no damage to the surrounding water basins will occur from the proposed continued landfill activities and potential impacts will be reduced to a level of insignificance.

#### 4.3.5 CUMULATIVE IMPACTS

The scope of analysis for cumulative impacts for hydrology and water quality is defined as the list of cumulative projects, as outlined in Section 3.5.2.

**Impact 4.3-5** Potential impact to regional flooding due to cumulative total of developments in the surrounding area.

The proposed project, in conjunction with other past, present, and reasonably foreseeable future projects will result in a cumulative impact related to flooding. The City of Palmdale is currently studying methods

to control flooding caused by runoff from the Upper Anaverde Creek water shed which is the water shed that receives runoff from the project and the cumulative projects in the area. The URS Corporation was commissioned by the City to develop regional improvement alternatives and options to significantly reduce the potential for flooding and their findings are presented in the May 2002 study titled "Final Report Upper Anaverde Watershed Detention Storage Alternatives." Although a Regional Detention Storage Alternative has not yet been finalized and selected by the City, the study options require future developments such as Anaverde LLC, Ritter Ranch, and the proposed project to contribute resources to detain the peak flows caused by rainfall events and reduce the potential for down stream flooding.

With the implementation of the Stormwater Management Plan, the project will reduce the potential peak run-off from the site to less than 85percent of the pre-development condition. Additionally, per the City's standard requirement, other cumulative developments must also meet the requirement that peak post-development flows can not exceed 85percent of the pre-development flows. Therefore, the project's contribution to the cumulative impact is considered less than significant.

The project also proposes to improve the Anaverde Creek conditions related to scour which would in turn reduce the potential for flooding impacts (see **Mitigation Measure 4.3-1** below), thus the impact will be less than significant.

**Impact 4.3-6** Potential impact to regional water quality (related to runoff, scour) due to the cumulative total of developments in the surrounding area.

Buildout of the proposed project in conjunction with future cumulative projects will incrementally contribute to a cumulative increase in the total amount of surface runoff erosion and water quality impacts to the Anaverde Creek and Tributaries within the Upper Anaverde Creek Watershed. Construction related activities that require grading and vegetation removal will increase runoff, causing greater erosion and downstream siltation. The amount of urban pollutants in surface water runoff will also increase with the project and cumulative projects. Urban pollutants may include antifreeze, oil, brake dust, lead, fertilizers and pesticides. The impacts associated with surface runoff erosion and urban pollutants are typically mitigated through City ordinances such as street maintenance programs, restricted use of landscaping fertilizers and pesticides, compliance with NPDES requirements, and BMPs, which include implementing debris/detention basins and oil-water separation filtration systems (where appropriate) for stormwater and nuisance flows. As stated previously, the Anaverde Creek and Tributaries within the Upper Anaverde Creek Watershed are not listed on the Section 303(d) list of impaired waterbodies. The project incorporates best management practices into the Stormwater Management Plan and Surface Water Control Plan consistent with NPDES requirements. Based on this and the fact that cumulative projects are subject to the same compliance requirements, a less than significant cumulative water quality impact would occur.

#### 4.3.6 MITIGATION MEASURES

Many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

Project design measures/components (i.e., Stormwater Management Plan [two retention/detention basins]), and Surface Water Control Plan shall be implemented so that post-development flows will be reduced to less than 85percent of the pre-development flows (peak post-development flow estimated to be 160 cfs).

Implementation/construction of the proposed Stormwater Management Plan (SWMP) and Surface Water Control Plan (SWCP) developed consistent with NPDES requirements shall occur so that surface water quality impacts are less than significant.

Project design measures/components (i.e., Leachate Collection and Removal System, Composite Liner System and Groundwater Monitoring System), developed consistent with Title 27 and NPDES requirements shall be implemented so that the potential groundwater quality impacts, ~~including potential permeability impacts~~ are less than significant.

**4.3-1** The final design for the Anaverde Creek Scour Protection System shall be developed by a qualified engineer to comply with the City of Palmdale engineering design requirements. The construction of the approved Scour Protection System shall be completed in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.

#### **4.3.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION AND REGULATION COMPLIANCE AND/OR PROJECT DESIGN MEASURES**

Based on the findings of the studies, the proposed project is able to attenuate the peak flow to less than 85% of the pre-development condition by implementing a Stormwater Management Plan / Surface Water Control Plan. The site will require two retention/detention basins to be constructed on the west and south sides of the site. Additional design of on-site conveyance structures will be required prior to construction to ensure interim conditions do not exceed the final design flows.

The hydraulic analyses indicate that existing structures and the proposed project will not be inundated by either the LACDPW Capital Flood or the 100-year FEMA flood.

Per the requirements of the City of Palmdale Master Drainage Plan, post-development discharge must be 85percent of the pre-development values. Implementation of the proposed project with improvement structures would reduce the peak flood flow in Anaverde Creek and therefore meets the requirement of the City of Palmdale Master Drainage Plan. Additionally, the project site is outside the floodway and therefore would have no potential to increase flood depths. The peak discharge from the site is small compared to the Capital and 100-year Flood flows for Anaverde Creek. The total storm water discharge from the site will be slightly larger than existing conditions; however, the detention basins attenuate the peak discharge resulting in a longer duration in surface water discharge to Anaverde Creek. The increase in total surface water flow from the post development project will have a negligible impact on the flood flows.

Within the implementation of **Mitigation Measure 4.3-1**, the scour protection system will limit creek bank erosion and protect both existing and future structures of the landfill during flood events. No significant impacts are anticipated.

Implementation/construction of the proposed SMP as depicted on **Figure 3-4**, Stormwater Management Plan and the proposed SWCP depicted on **Figure 4.3-4**, Post-Development Surface Water Control Plan

will reduce potential runoff and surface water quality impacts to less than significant levels. As concluded in the 1992 certified EIR for Landfill II, the proposed project will not alter the groundwater level and no significant impacts to groundwater fluctuation are anticipated. With the implementation of project design measures/components (i.e., Leachate Collection and Removal System, Composite Liner System and Groundwater Monitoring System) the potential groundwater quality—including potential permeability impacts will be reduced to less than significant levels.

## 4.4 BIOLOGICAL RESOURCES

### 4.4.1 INTRODUCTION

Frank Hovore and Associates (FH&A) conducted site surveys covering the entire AVPL property and prepared a supplemental Biological Assessment Report that updates the prior 1991 biological report, prepared by S.G. Nelson, and the 2001 Section 404 and Section 1603 jurisdiction delineation prepared by Dodson and Associates. The findings of the report is summarized and included herein, and the report in its entirety is included in this document as **Appendix E-1**.

Previous actions at the AVPL have been permitted by the County of Los Angeles, Army Corp of Engineers, and California Department of Fish and Game, based primarily upon the Nelson report and the more recent Section 404 and Section 1603 jurisdictional delineation by Tom Dodson and Associates in 2001. Since the Nelson report, there have been numerous changes to the regulatory statutes by which the significance of impacts to biological issues are determined, and many more species and vegetation formations have been accorded sensitive status by the responsible resource agencies. Therefore, FH&A biologists conducted focused surveys over the entire undeveloped site (Landfill II, the consolidation area and ancillary facilities area) during Fall 2003 and Spring 2004 to determine whether the site biota had changed measurably and to re-evaluate the status of agency-listed sensitive resources potentially affected by the project. Additionally, an identified 200-foot wide future utility access corridor extending “off-site” along the northern margin of the Landfill I property boundary was surveyed for the power pole relocation and the new R-5 landfill access road alignment, which follows the R-5 easement and connects with a proposed new frontage road that would intersect with Tierra Subida at Rayburn Road. A second “off-site” 200-foot wide utility pole corridor alignment was surveyed in summer 2005, paralleling the southern boundary of the Landfill I and Landfill II property. The southern alignment (see **Figure 1-4**, Site Plan in Section 1.0 of this EIR) is the preferred location and is therefore discussed in this section. The following information supplements and updates the survey results and conclusions of the 1991 Nelson report, and to a lesser extent, the 2001 delineation report. The “on-site” power pole easement/relocation area (see **Figure 3-11**, Fill Plan C) would follow the future berm access road south of the Landfill II refuse footprint to the west property line where it would extend north inside the Landfill II property boundary to meet the existing poles at the northwest corner of the Landfill II property. This “on-site” location is already disturbed or would be disturbed as part of the previously permitted Landfill II construction.

### 4.4.2 EXISTING CONDITIONS

The areas and issues of concern for the recent 2003, 2004, and 2005 surveys included the general biota of the site, sensitive plant and animal species potentially occurring within the area proposed for expanded landfill use, and freshwater/riparian species which might be affected by encroachment or flood protection modifications to the channel of Anaverde Creek. The timing of the spring surveys (April 20 and May 18, 2004) was discussed with representatives from the State Department of Fish and Game and was intended to determine the identity of annual plant species on the site and to coincide with the season of adult activity for sensitive riparian faunal elements. Species of concern included the following: California redlegged frog (known from Ritter Ranch), southwestern pond turtle (known from Anaverde Creek), arroyo toad (known from Littlerock Creek), coast horned lizard (common in the site vicinity), desert tortoise (unlikely to occur near the landfill), western burrowing owl and other sensitive bird species, short-jointed beavertail cactus and Hoover’s woolly-star (known from several other sites nearby).

Landforms within the proposed expansion footprint appear to not have been altered since the Nelson report, but portions of the area adjacent to the west margin of the existing landfill more recently have been graded and filled for landfill access and surface water control. The topography of the proposed expansion area has been altered marginally by roadways which encircle the site, and pass off-site to the north and south. The main interior portion proposed for continued landfill use encompasses a low pressure ridge along the San Andreas rift zone, delineated by the roads and Anaverde Creek channel to the south, and by a low pass to the north. The land along the project northern boundary rises toward the top of another, higher secondary ridgeline, forming relatively steep slopes and arroyos, but without any definable drainage courses or other significant erosional features.

Anaverde Creek lies adjacent to the site, but is separated from the proposed landfill use area by several dirt roadways or excavated basins with marginal roadway berms. This reach of the creek is narrow and rocky, with steeply incised banks, both sides of which have been filled or otherwise disturbed for much of its length. Although the creek channel shows signs of seasonal high-water flows, the persistent drought conditions of the past several decades likely have reduced the frequency with which it carries runoff, and there was no evidence of surface water between November, 2003 and May, 2004. However, due to the heavy winter rainfall in 2005, the creek channel was flowing or pooled along the length of the landfill margin.

The existing landfill access road entrance takes off Tierra Subida across from a park entry drive, approximately 200 meters south of Rayburn Road, and meanders along the margin of Anaverde Creek channel to the present office complex and parking lots. The route is level, following the toe of the slope of the small terminal ridgeline running west-east above the landfill.

There are no caves, cliffs, outcroppings, or other significant geological features on the proposed expansion parcels, or within the existing entrance roadway alignment.

#### **VEGETATION AND HABITATS**

The dominant vegetation formation over most of the site is xeric California juniper scrub, intermixed with a few Joshua trees, but mostly very open, and thinly-spaced. Native woody shrub and sub-shrub understory species include goldenbush, foothill yucca, bladderpod, desert sage, prince's plume, California buckwheat, Acton encelia, horsebrush, cholla cactus, scarlet bugler and four-wing saltbush (along the roadsides). Native annual species observed included trumpet buckwheat, spotted buckwheat, desert candle, goldfields, tidy-tips, small-flowered poppy, comb-bur, Turkish rugging, dense-flowered woollystar, many-flowered woollystar and lance-leaved live-forever. This formation continues along the terminal ridgeline to Tierra Subida, where the terrain levels on either side of that roadway. The portion of the hill slated for roadway construction supports a high density of junipers and a few Joshua trees, but the lower slopes immediately adjacent to the entrance drive have been disturbed by off-road vehicle activity, and vegetation becomes sparser nearest the intersection with Tierra Subida.

Vegetation along the proposed new roadway alignment is mixed scrub, dominated by Great Basin sagebrush, rabbitbrush, California buckwheat, snake broomweed and Russian thistle, with a few small Joshua trees and junipers at the margin of the alignment. A few small stands of winterfat and patches of desert needlegrass are scattered on the slopes of the small ridgeline immediately east of the tie-in with the road to the scales.

The preferred utility alignment, along the southern boundary of the existing facility footprint, passes from east-to-west through a variety of vegetation formations, including some low hills, clothed with thinly-arrayed desert scrub (including a few Joshua trees and junipers); through old livestock pens and parking areas, across Anaverde Creek, and finally across an area of open xeric sagebrush scrub to the SW corner of the site, where it extends north to meet the existing pole alignment at the NW corner of the site. The bed of Anaverde Creek in the eastern one-third of the property reach is thinly-to-densely vegetated with mulefat, intermixed with mostly non-native herbaceous taxa, transitioning to arroyo willow and cottonwood formations where it passes the berm of the southernmost basin. The delineated area of agency jurisdiction include 1.9 acres subject to permitting within 1600 sections of the California Fish & Game Code (Dodson & Associates, 2001). The willow formation is dense and nearing maturity, then thins again somewhat to the west, where the creekbed is not constrained and widens to form wiregrass and saltgrass flats, intermixed with Great Basin sagebrush, saltbush and rabbitbrush. The proposed "off-site" southern pole alignment crosses the creek approximately 400 feet west of the existing maintenance facility and then crosses a second time immediately adjacent to the berm of the existing detention basin, at a point of past disturbance. Vegetation at this point consists of submature arroyo willow, sandbar willow, mulefat, tree tobacco, tamarisk, and, on the bank, non-native elms.

### WILDLIFE

General wildlife use of the property is low to moderate for the habitat types present, due in part by the presence of the active landfill, truck traffic, and basin maintenance. There are several rift-zone ponds off-site, on private property southeast of the project site, presently used for fishing and other recreational activities. The presence of these ponds likely increases animal movement through and around the existing landfill site, but the lack of surface water within the reach of Anaverde Creek on and adjacent to the proposed and existing project areas reduces the value of that portion of the drainage as a habitat linkage. Although this reach of Anaverde Creek normally is dry during Summer, following heavy Winter rainfall (such as occurred in 2004/2005) surface flows may persist, providing better seasonal corridor values for local wildlife movement.

Mammal species observed or detected from sign include coyote, gray fox, raccoon, desert black-tailed jackrabbit, Audubon cottontail, California ground squirrel, Botta pocket gopher, Mojave Panamint kangaroo rat, dusky-footed woodrat, and deer mouse. Most of the California ground squirrel burrows were in association with the edge areas and internal disturbed substrates of the existing facility, or along road margins, unsuitable for use by western burrowing owl. Ground squirrels generally are more tolerant of human presence near their burrows than are burrowing owls, although the latter does sometimes occupy burrows in residential lots. An examination of a number of burrows around the periphery of the site yielded no evidence of burrowing owl, and none were seen during the surveys, day or night.

Fecal pellets of mule deer were found on the ridgeline north of the active landfill, within the 200 foot wide proposed utility corridor, but not within the proposed expansion area.

The presence of the existing landfill attracts large numbers of common ravens and California gull to the site, and ravens were observed foraging over the entire property. Red-tailed hawk, Cooper's hawk, and American kestrel were observed flying over the off-site ponds and wetlands on the property south of the project area, and any or all of them may nest in cottonwood trees along Anaverde Creek. Barn owl and great horned owl were heard calling on the site during night surveys, and presumably both nest within the existing facilities on the site, or along Anaverde Creek.

Songbirds noted on the property included several non-resident migrants (white-crowned sparrow, savannah sparrow, Wilson's warbler, Nashville warbler), and a suite of xeric chaparral – desert species, including blue-gray gnatcatcher, desert horned lark, black-throated sparrow, northern mockingbird, bushtit, Bewick's wren, California towhee, and California quail.

Because of drought conditions during the previous 3 years, ground cover was thin or absent from much of the substrates on the site until Spring, 2005, when heavy rainfall induced germination of entire seedbanks. The low mass and quality of insect resources which prevailed for several years had a reductive effect upon reptiles locally, lowering the number and species of lizards in particular. Lowered food sources naturally have a direct impact upon lizard populations, winnowing out the less fit individuals, and they also may lower the reproductive rate for one or more years. Populations of insects rebounded in 2005, and small reptiles may also follow with a concomitant rebound in their numbers, but during all surveys relatively few reptiles were observed, mostly yucca night lizards (common under fallen Joshua tree trunks and dead bases of foothill yucca), side-blotched lizards and fence lizards, but also one San Diego alligator lizard and several desert whiptail lizards (the latter mostly along the access roadways at the northern and southern margins of the property). None of these species is listed as sensitive by resource agencies.

Snakes observed included San Diego gopher snake and coachwhip, both of which are relatively abundant on the slopes to the north of the expansion area. Although not observed, southern Pacific rattlesnake, rosy boa, desert patch-nosed snake, night snake, and California kingsnake all would be expected to occur within the site vicinity, particularly within or adjacent to the rift zone riparian habitat areas.

No amphibians of any kind were observed within the expansion area, and none would be expected thereon, given the absence of surface water or riparian features on that portion of the site. Pacific chorus frog and western toad were observed within the riparian and wetland habitats along the western portion of the reach of Anaverde Creek passing along the southern margin of the property. In Summer 2005 western toad and chorus frog tadpoles and juveniles were observed at several points along the drainage. In years when sufficient rainfall occurs, these two species apparently are capable of spreading into the normally dry portions of the channel.

As noted earlier, invertebrates were not common on the proposed expansion site during years of drought conditions which greatly reduced Spring annual plant growth, leaf production by woody perennials, and flowering rates and timing. Foothill yucca on the site were not blooming during Spring surveys before 2005, but many did bloom in Spring, 2005, with emergence holes in the floral stems indicating presence of yucca weevil, yucca longhorned beetle, metallic borers, and bogus yucca moth. Darkling beetles were uncommonly encountered in the uplands, but several specimens of *Eleodes* and *Phloeodes* were found in the more mesic scrub near the southern boundary of the overall site. Trapdoor spider burrows were sparse but present on several of the steeper slopes of the site, at the western end of the expansion area and within the proposed utility corridor, and California tarantula likely also occurs locally. Western black widow spiders were abundant under debris and within the entrances of unused rodent burrows.

## **SENSITIVE RESOURCES**

Although the Spring 2004 blooming season was considerably retarded in terms of timing and vegetative productivity, the field surveys were sufficient to determine presence/absence of the few agency-listed sensitive plant species potentially occurring locally. None of the small stands of *Eriastrum* found on the site were the formerly-listed species, Hoover's woollystar, *E. hooveri* (recently posted by the USFWS as

having been formally de-listed), all of the plants identified as being either many-flowered woolly-star (*E. densiflorum*), or sapphire woolly-star (*E. sapphirinum*), neither of which is of agency concern. The few specimens of beavertail cactus on the project site all clearly belong to the common nominate variety, *Opuntia b. basilaris*, lacking the shortened stems of the short-jointed morph *brachyclada*. None of the approximately 80 plant species found on the site are considered sensitive by any resource advocacy group or agency.

The riparian vegetation along Anaverde Creek forms small areas of scrub and woodland, which would be classified as southern willow scrub or southern willow – cottonwood woodland, both considered highest inventory priority formations by the California Department of Fish & Game's Natural Diversity Data Base.

No listed sensitive invertebrate species were found on the site. Shrubs of four-winged saltbush were inspected for presence of caterpillars or resting adult San Emigdio blue butterfly in Spring 2004 and Summer 2005 but none were found. No other agency-listed sensitive insect species would be expected to occur locally.

None of the species of amphibians or reptiles detected on the property are considered to be agency-sensitive (that is, listed by any recognized resource agency as being of special management concern). There is a possibility of western pond turtle, two-striped garter snake, and possibly also California red-legged frog occurring within the off-site ponds and wetlands along the rift zone south of the project boundary, but habitat values for these species are at best marginal within the reach of the creek immediately adjacent to the landfill boundary, even during years of persistent surface flows, and none would be present within the proposed expansion area or zone of indirect project effects. Habitat values along the reach of Anaverde Creek within the vicinity of the landfill property do not appear suitable for arroyo toad.

Agency-listed sensitive raptor species potentially occurring within the landfill vicinity include a variety of hawk species (ferruginous, rough-legged, northern harrier, white-tailed kite, sharp-shinned, prairie falcon) which may forage seasonally or casually over the property, but none would be expected to nest or otherwise occur on the site in a resource-dependent relationship. The substrates, slopes, and levels of disturbance render the project area unsuitable for nesting use by burrowing owls, and no evidence of them has been seen in numerous site surveys.

A number of wetland and marshland birds would be expected to frequent the ponds on the adjacent off-site portions of the Anaverde Creek basin, including several agency-sensitive egrets and herons, but none of these species would be likely to occur within the project area, and habitat values in the uplands are wholly unsuited to them.

Several sensitive songbird species were observed, or would be expected to occur within the project boundaries, including Costa's hummingbird, Nuttall's woodpecker, loggerhead shrike, California thrasher, black-chinned sparrow, Brewer's sparrow, and Lawrence's goldfinch. These are all considered CEQA-sensitive taxa where they breed—meaning that the California Department of Fish & Game has included them in its "Special Animals" lists-- and that there is a possibility of any of them nesting within the habitats of the overall property. Most would occur within the Anaverde Creek riparian areas and basin scrub habitats, but the shrike and thrasher would be equally likely to utilize xeric upland shrub formations. Neither of these species was observed during any of the surveys, and clearly they are not common on the site, if present at all.

No sensitive mammals species presently are known to reside or regularly frequent the project site, but at least several sensitive species of bat (pallid, pale big-eared, *Myotis* spp.), would be expected to forage aerially over the site, particularly along the alignment of Anaverde Creek. Bats observed during field surveys at night included western pipistrelle, Mexican free-tailed bat, and an undetermined larger species, possibly big brown bat.

Other sensitive mammals potentially occurring on the property include southern grasshopper mouse, American badger, and less-likely, ringtail. The first of these is relatively common in the western Antelope Valley and Santa Clara River basin, and could occur anywhere on the site, but tends to be nomadic, and usually is detected only by focused trapping. Such an effort would not be warranted, given that the species would be no more likely to occur within the project area than on the surrounding slopes and within the creek basin habitats.

#### **ON-SITE AND ADJACENT WILDLIFE MOVEMENT, CORRIDORS AND HABITAT LINKAGES**

Anaverde Creek and the overall rift zone, including the low ridgelines that parallel the fault alignment, are one of the major wildlife movement zones in southern California. Wildlife moving between the southern Sierra Nevada / Tehachapi ranges and the transverse ranges may pass along the rift zone, following the riparian corridors or moving across the open scrub habitats in the surrounding basins. Ridgelines may be followed by larger, more mobile species, but in recent years most taxa utilize the network of dirt roads connecting powerline towers and other installations, or follow the aqueduct margins.

#### **TRIBUTARY TO ANAVERDE CREEK**

As indicated in the 1992 certified EIR for Landfill II, a tributary to Anaverde Creek, indicated as a blue line stream on the Ritter Ridge 7.5 minute USGS quad sheet, exists on the Landfill II expansion site and therefore would be removed with that project's approval. Subsequent to the EIR certification, the landfill operators met with the Department of Fish and Game on site to determine if additional permitting would be required. The department concluded that no permit would be required for this tributary. The correspondence related to this decision is contained in the Initial Study for the EIR which is in **Appendix A-1**. The results of these discussions were also reconfirmed by FH&A's 2003-2004 surveys.

#### **4.4.3 THRESHOLD OF SIGNIFICANCE**

Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a guideline of consequences that are deemed to have a significant effect on the environment. According to the Environmental Checklist, a project may be deemed to have a significant biological resources effect if it will:

- 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 (CDFG) or US Fish and Wildlife Service;

- 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 US 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 species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site; or
- e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Section 15065(a) of the CEQA Guidelines also states that a project may have a significant effect on the environment when “the project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number of restrict the range of a rare or endangered plant or animal. In addition, because of the sensitive nature and decline of wetland habitats throughout California, the removal, filling, dredging, or alteration (directly or indirectly) of wetland or riparian areas will be considered a significant impact that requires replacement mitigation through the CDFG and RWQCB permit process.

#### 4.4.4 PROJECT IMPACTS

##### VEGETATION AND HABITATS

**Impact 4.4-1** Removal of existing Joshua and Juniper trees from the proposed expansion zone, 200-foot wide utility corridor, and entry roadway realignment area.

The removal of existing joshua and juniper trees from the proposed expansion zone has been evaluated within the 1992 certified EIR, and conditions have not changed significantly since that report was accepted. The previous **Mitigation Measure 4.4-1**, the City of Palmdale Desert Vegetation Ordinance requires transplantation or off-site dedication/preservation of compensatory habitat for the removals. Per the Ordinance requirements, studies conducted in 1998 (FH&A, *Desert Vegetation Preservation Plan*) (see **Appendix E-2**) located appropriate off-site compensatory acreage for the potential loss of 103 acres of juniper and joshua tree woodland in the proposed expansion area. The area available for preservation of suitable acreage and density of habitat are situated immediately south of the present landfill operations, and as determined in 1998 would include a greater number of specimen shrubs than would be required by the ordinance for the entire facility, including the 200 foot wide utility corridor and new landfill access road. With the implementation of the proposed CUP project including the new landfill access road (see discussion below) the 1998 *Desert Vegetation Preservation Plan* (see **Appendix E-2**) will be updated and implemented per **Mitigation Measure 4.4-1**. No significant impacts are anticipated with the implementation of **Mitigation Measure 4.4-1**.

The existing landfill access road, City Ranch Road, is proposed to be realigned and constructed to provide an intersection with the existing alignment of Rayburn Road, approximately 200 meters north of the present entrance. This realignment will require cutting through an existing terminal ridgeline, lowering

the grade approximately 100 feet below the existing topography, curving the road southward from Rayburn, through the ridge, and connecting with the existing alignment about 250 feet west of the present entrance. The new frontage road will be constructed to connect with City Ranch Road and intersect Tierra Subida at Rayburn Road, and create a 4-way signalized intersection, and construct the remaining access road along the R-5 dedicated right-of-way (see site photos contained within the Supplemental Biological Assessment 2004/2005 Survey Update located in **Appendix E-1**). The new access alignment will be immediately north of the existing powerline poles (see site photos within **Appendix E-1** and **Figure 4.7-13**, Proposed Realignment of City Ranch Road in Section 4.7 of this EIR).

Similar impacts to perhaps 100 Junipers and approximately 20 Joshua trees (contained within two clusters) will occur with implementation of the proposed entry roadway realignment (see site photos within **Appendix E-1**). These impacts were not evaluated quantitatively in the 1998 FH&A Desert Vegetation Preservation Plan (see **Appendix E-2**), but they will be mitigated following the same process as was employed for the expansion area. With the implementation of **Mitigation Measure 4.4-1**, which requires the implementation of a “revised” Desert Vegetation Preservation Plan, no significant impacts are anticipated.

**Impact 4.4-2** Potential impact related to 1.9 acres of CDFG jurisdictional area if work is performed within these jurisdictional areas of Anaverde Creek and potential impact to habitat within Anaverde Creek by future runoff from the landfill.

As stated earlier, the Anaverde Creek vegetation includes 1.9 acres subject to permitting within Section 1600 of the California Fish & Game code (Dodson & Associates, 2001).

Additional stabilization of Anaverde Creek will be mandated by the city for protection of facilities along the north bank. All or a portion of the 1.9 delineated CDFG jurisdictional acreage may be affected by such actions. Should further modification to the creek be required, Waste Management shall obtain the appropriate agreements and permitting from CDFG and Regional Water Quality Control Board, and implement whatever mitigation measures or conditions may be required by those agencies. Refer to Section 4.3 for discussion of the Anaverde Creek scour/erosion protection system. **Mitigation Measure 4.4-2** has been provided to ensure proper permits are obtained prior to any work completed in jurisdictional areas. Additionally, **Mitigation Measure 4.4-3** is proposed to ensure future landfill run-off does not affect habitat within the Anaverde Creek.

## WILDLIFE

**Impact 4.4-3** The removal of the native vegetation from project implementation has potential impacts to wildlife. The new roadway alignment will involve the possible removal of an active coyote den, located immediately adjacent to the realignment connection point with the existing City Ranch Road.

The impacts of vegetation loss through direct removal will, in turn, have potentially significant adverse effects on wildlife. As vegetation is removed or otherwise destroyed, the associated wildlife will either be destroyed (as mentioned above for less mobile forms) or will be displaced to adjacent habitat areas where they will crowd and disrupt local populations. Although increased competition and predation will act rapidly to return population numbers to habitat carrying capacity levels, either displaced or local wildlife will be lost. The effect will be increased in magnitude and duration if this impact occurs in the spring when most wildlife are reproducing. Other determinants of their sensitivity are the relative importance of

habitats lost to local and regional wildlife populations, the abundance and diversity of wildlife these habitats support, the availability of these habitats, and the habitat dependency of the associated wildlife.

The majority of wildlife found and expected onsite do not exhibit declines or threats to their populations. Realignment of the entry road will remove an active coyote den, presently located immediately adjacent to the realignment connection point with the existing City Ranch Road. Coyotes are not considered sensitive species, but are important predators within their respective habitat systems, and displacement of the den will be done in such a manner as to not directly harm its occupants.

**Impact 4.4-4** Implementation of initial vegetation clearing during the breeding season of native birds could result in loss of nest impacts which would be in violation of the Federal Migratory Bird Treaty Act.

The only identified native species potentially adversely affected by the project implementation to a level requiring avoidance of impacts would be nesting birds. Commencement of initial vegetation clearing activities during the breeding season of native birds could result in loss of nest impacts which would be in violation of the Federal Migratory Bird Treaty Act. The Federal Migratory Bird Treaty Act and California Fish & Game law require that project actions such as initial clearing of vegetation be timed to commence and be completed outside of the breeding season (approximately mid-April to mid-August at this elevation in the Antelope Valley). Implementation of **Mitigation Measure 4.4-4** will ensure the proposed project will avoid direct impacts to active nests, as required by law, and no significant impact would result. Some territory loss and displacement may occur. Because the species of concern were not observed on the site, the numbers of individuals potentially affected cannot be readily determined; however, it is likely that none would be affected. This potential residual impact would not be considered CEQA significant.

**Impact 4.4-5** Potential impact to wildlife due to vegetation loss and potential peripheral effects (light, noise, movement) from the landfill onto the adjacent habitats.

Activities associated with the landfill would be expanded to a larger footprint, extending the peripheral effects (light, noise, movement) to a greater portion of the reach of Anaverde Creek adjacent to the property. These effects could incrementally lower the habitat values of that portion of the reach for the species presently utilizing the riparian areas therein. Facility design and management practices which reduce the intensity of lighting adjacent to habitat areas, such as shielded, downward-directed exterior light fixtures, use of sodium vapor or similar low-intensity bulbs other than mercury vapor, should be utilized. Also, security and activity lighting should be directed onto target working face areas, and not into the creek channel. Although not formally warranted, mitigation has been provided to insure that design measures are implemented, and therefore significantly lower peripheral disturbance effects of the proposed expansion on wildlife. Noise and other intrusions arising from project implementation would be approximately the same as existing levels, extended westward along the expansion perimeter.

## SENSITIVE RESOURCES

Based upon FH&A's survey results for sensitive species as identified in the existing conditions, the proposed landfill expansion and proposed access roadway realignment would generate no significant adverse impacts to sensitive species mentioned in this section.

**ON-SITE AND ADJACENT WILDLIFE MOVEMENT, CORRIDORS AND HABITAT LINKAGES**

**Impact 4.4-6** The proposed project will be aligned within the same upland area as the existing landfill and ancillary facilities, and will not measurably reduce the passage of wildlife through that portion of the Anaverde Creek corridor.

The proposed landfill expansion will be aligned within the same upland area as the existing landfill and ancillary facilities, and will not measurably reduce the passage of wildlife through that portion of the Anaverde Creek corridor. The past and present installation includes intense night lighting along the creek margins, and the creek channel is confined to a narrow passage. It is probable that species moving along Anaverde Creek exit the channel and move through the open habitats to the south of the channel, re-entering east of the entry to the present landfill. The narrowness of the channel as presently configured affords a sheltered passage for species moving along the bottom, and the proposed confined access roadway re-alignment should not interfere with existing movement usage. Additionally, the proposed “off-site” southern utility pole corridor would not obstruct passage by wildlife beneath it, and where it crosses the creek, care shall be taken to situate poles outside of the channel margins. **Mitigation Measure 4.4-6** is proposed to ensure this design measure is implemented.

If further stabilization of Anaverde Creek channel is mandated, all or a portion of the 1.9 acres of CDFG jurisdictional bed and bank may be affected. During bank stabilization activities, a portion of the creek channel may be temporarily obstructed to animal movement, but the pre-construction bank condition is steep and unstable, and is not part of any actual pathway, and following completion, the passage would be essentially the same as before stabilization. Minimization of this effect would be accomplished by keeping the channel bottom open during non-construction hours, and by retaining the open bottom following implementation of stabilization improvements. As required by **Mitigation Measures 4.4-2**, any alterations shall be undertaken only within the conditions of a CDFG streambed alteration agreement and Regional Water Quality Control Board authorization.

Based on the above discussions and proposed **Mitigation Measures 4.4-2, 4.4-5, and 4.4-6**, no significant impacts to on-site and adjacent wildlife movement corridors are anticipated with the proposed CUP project.

**4.4.5 CUMULATIVE IMPACTS**

The scope of analysis for cumulative impacts for biological resources is defined as the list of cumulative projects, as outlined in Section 3.5.

**Impact 4.4-7** The project, in conjunction with other cumulative developments in the area, will result in cumulative losses of natural upland desert formations, native vegetation, and habitat values along Anaverde Creek and in the displacement effects to CEQA-sensitive songbird and small mammal species.

The proposed project will incrementally reduce the natural upland desert formations by removal of existing surface resources. No agency-listed sensitive species or habitats will be affected by the project, and therefore these impacts are not directly significant. Overall, the reductions in non-sensitive vegetation and wildlife resources locally will contribute on an incremental basis to the spectrum of cumulative resource impacts which have occurred, and are now occurring, within the region as a result of

unrelated development activities in surrounding areas (Pelona Vista Park, City Ranch, Ritter Ranch, etc., in Section 3.5). These impacts together will result in an incremental loss of native vegetation and habitat values along Anaverde Creek drainage, and an incremental contribution to the fragmentation of contiguous native formations along the margins of Ritter Ridge. Because these reductions do not involve listed species of plant and animals, or agency-sensitive habitats on the project site, the impacts arising from the proposed landfill expansion are a minor contribution to the levels of significance and to the overall acreages.

Although no specific sensitive elements will be adversely affected by the project, cumulative development in the area may have significant effects upon non-listed biological resources, including desert woodland formations, Joshua trees, and California junipers. Cumulative impacts to natural resources are addressed in the City General Plan EIR, and may best be mitigated through compliance with General Plan open space designations, City regulation of project design through cluster development permits, and individual resource agency permits with California Department of Fish and Game (CDFG) and other agencies. Future development would be required to comply with the Endangered Species Act, wetland laws, and City standards to mitigate potential impacts to biological resources to a less than significant level on a project-by-project basis. Given this and with implementation of **Mitigation Measures 4.4-1** through **4.4-6**, these cumulative impacts are mitigated to less than significant levels.

Direct and post-implementation displacement effects may occur to CEQA-sensitive songbird and small mammal species, but these impacts cannot be specifically identified as significant due to the non-resident status of the species potentially affected. Any such impact may be considered locally important, but overall such minor effects would not constitute significant or adverse impacts within the standards of CEQA or other applicable statutes.

#### 4.4.6 MITIGATION MEASURES

Many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

Facility design and management practices would reduce the intensity of lighting adjacent to habitat areas, direct security and activity lighting onto target areas, and not into the creek channel and significantly lower the peripheral effects of the proposed expansion on wildlife. Mitigation is provided to ensure the facility design and management practices are implemented.

- 4.4-1** Prior to the removal of any Joshua/Juniper trees, the *1998 Desert Vegetation Preservation Plan* (see **Appendix E-2**) prepared by FH&A shall be updated and approved by the City of Palmdale consistent with the City's Desert Vegetation Ordinance.
- 4.4-2** Pursuant to Section 1601-1603 of the California Fish and Game Code responsible agencies (i.e., CDFG and Lahontan RWQCB) shall be notified and permits/approvals shall be obtained prior to any activities within, or encroachment upon the delineated bed and bank of the Anaverde Creek along the southern margin of the Landfill property.

- 4.4-3** Prior to issuance of the landfill's Waste Discharge Requirements (WDRs), the project engineer shall finalize erosion and siltation control plans and other BMPs, as necessary to prevent graded and cleared areas from being eroded, resulting in the transport of sediment downstream to Anaverde Creek.
- 4.4-4** Landfill expansion actions which directly affect vegetation formations (i.e., initial vegetation cleaning) shall be initiated outside of the timing of the native bird nesting season (mid-April through mid-August) to avoid disturbing active nests, per provisions of the Migratory Bird Treaty Act and California Fish and Game Code. If initial vegetation disturbance and clearing cannot be performed outside of this window of non-breeding activity, then it shall be preceded by a thorough site survey for active nests by a qualified biologist; nests found shall be flagged, and a perimeter fence installed at an appropriate distance (usually between 50 and 300 feet from the nest, depending upon species and terrain). No work shall be performed within the fenced areas until such time as the nests are determined to be inactive and the fledglings have left the area.
- 4.4-5** Facility design and management practices shall be implemented to reduce the intensity of exterior and security lighting adjacent to habitat areas. Measures such as shielded, downward-directed exterior light fixtures, use of sodium vapor or similar low-intensity bulbs (other than mercury vapor), shall be utilized. Security and activity lighting shall be directed onto target working face areas, and not into the creek channel.
- 4.4-6** The final design of the "off-site" utility pole placement shall be outside of the bed and bank of the channel to permit free passage by wildlife along the channel.

#### **4.4.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION AND REGULATION COMPLIANCE AND/OR PROJECT DESIGN MEASURES**

The proposed landfill expansion would generate similar effects as the impacts which currently occur as a result of the existing facility use and operation, and these will be extended further west along Anaverde Creek alignment, as permitted by previous agency agreements and CEQA document approvals. **Mitigation Measures 4.4-2** and **4.4-3** will ensure that proper permits and agency replacement mitigation are obtained should the project conduct any activities within the jurisdictional areas of the Anaverde Creek. Xeric upland juniper scrub and chaparral vegetation formations will be removed or altered for the landfill, revised access (R-5) and the utility corridor. These impacts will be mitigated within the provisions of the City of Palmdale Desert Vegetation Ordinance, and the 1998 FH&A Desert Preservation Plan (see **Appendix E-2**) completed consistent with the Ordinance. **Mitigation Measure 4.4-1** requires that the 1998 FH&A Desert Preservation Plan be updated and approved. Initial vegetation clearing during the breeding season of native birds may result in loss of nests which would be in violation of the Federal Migratory Bird Treaty Act. This potential impact will be mitigated to less than significant with implementation of **Mitigation Measure 4.4-4**. **Mitigation Measures 4.4-5** and **4.4-6** will ensure potential impacts to the Anaverde Creek habitat and wildlife are minimized to less than significant levels. The project in conjunction with other developments in the area will result in cumulative losses of natural upland desert formations, native vegetation, and habitat values along Anaverde Creek and the displacement effects to CEQA-sensitive songbird and small mammal species. With implementation of **Mitigation Measure 4.4-1** through **4.4-6**, these cumulative impacts are mitigated to less than significant levels.

Additionally, facility design and management practices (such as shielded, downward-directed exterior light fixtures, use of sodium vapor or similar low-intensity bulbs other than mercury vapor) would reduce the intensity of lighting adjacent to habitat areas, direct security and activity lighting onto target areas, and not into the creek channel and significantly lower the peripheral effects of the proposed expansion on wildlife.

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## 4.5 NOISE

### 4.5.1 INTRODUCTION

A noise study was conducted by Giroux and Associates to update the prior analyses and to assess project related impacts on the noise on a local and regional basis. The results of the study are included in a report, which is contained in **Appendix F** of this document. In preparing this report, previous noise studies for the 1992 certified EIR for Landfill II and adopted Mitigated Negative Declaration were reviewed and incorporated as necessary. The findings of the updated report are summarized in this section.

### 4.5.2 EXISTING CONDITIONS

#### SCALES AND DEFINITIONS

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The unit of sound pressure ratioed to the faintest sound detectable by a keen human ear is called a decibel (dB).

Because sound or noise can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale similar to the Richter scale used for earthquake magnitude is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called “A-weighting,” written as dB(A). Any references to decibels written as “dB” are A-weighted values.

The predominant community noise rating scale used in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels, known as Leqs, based on an A-weighted decibel with upward adjustments added to account for increased noise sensitivity in the evening and night periods. These adjustments are +5 dB(A) for the evening (7 p.m. to 10 p.m.), and +10 dB(A) for the night (10 p.m. to 7 a.m.). CNEL may be indicated by “dB(A)” or just “CNEL”.

The Leq is the sound level containing the same total energy over a given sample time period. The Leq can be thought of as the steady (average) sound level which, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period. Leq is typically computed over 1, 8, and 24-hour sample periods.

Another commonly used method is the day/night average level or Ldn. The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the United States Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the Leq. The Ldn is calculated by averaging the Leqs for each hour of the day at a given location after penalizing the “sleeping hours” (defined as 10 p.m. to 7 a.m.), by a 10 dB(A) to account for the increased sensitivity of people to noises that occur at night. The maximum noise level recorded during a noise event is typically

expressed as Lmax. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time.

### **NOISE SENSITIVE RECEPTORS**

The City of Palmdale has adopted the State guidelines for maximum exterior noise levels for noise sensitive land uses as a standard. Noise sensitive land uses include residential (single and multi-family dwellings, mobile home parks, dormitories, and similar uses); transient lodging (including hotels, motels, and similar uses); hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care; and public or private educational facilities, libraries, churches, and places of public assembly. The exterior living area of these uses includes single-family private yards, and multi-family patios or balconies that are greater than six feet in depth. The noise standards for these land uses are 65 dB CNEL exterior and 45 dB CNEL interior.

Residential development is located to the north of the site at Avenue Q-8 and future residential development is located to the west of the site (City Ranch Specific Plan currently under construction). There is a sports complex (Pelona Vista) to the east of the site across from Tierra Subida Avenue. The remaining adjacent areas include vacant land planned for business park/commercial uses.

### **STATE OF CALIFORNIA STANDARDS**

An interior CNEL of 45 dB is mandated by the State of California Noise Insulation Standards (CCR, Title 24, Part 6, Section T25-28) for multiple family dwellings and hotel and motel rooms. In 1988, the State Building Standards Commission expanded that standard to include all habitable rooms in residential use, included single family dwelling units. Since normal noise attenuation within residential structures with closed windows is about 20 dB, an exterior noise exposure of 65 dB CNEL allows the interior standard to be met without any specialized structural attenuation (dual paned windows, etc.). A noise level of 65 dB CNEL is also the level at which ambient noise begins to interfere with one's ability to carry on a normal conversation at reasonable separation without raising one's voice. A noise exposure of 65 dB CNEL is thus typically the exterior noise land use compatibility guideline for new residential dwellings in California.

### **CITY OF PALMDALE NOISE STANDARDS**

#### **Introduction**

Any noise standards for CEQA evaluations are based upon the applicable ordinances and standards of the regulating jurisdiction. For this project, City of Palmdale noise standards will be the impact evaluation guidelines.

#### **General Plan**

The City of Palmdale has adopted noise standards in its General Plan Noise Element (refer to the Guidelines presented in **Table 4.5-1**, below). CNEL-based standards are used to make land use decisions as to the suitability of a given site for its intended use. They apply to those noise sources not amendable to local control such as on-road traffic, aircraft, trains, etc. For a landfill, there are no on-site uses that would require detailed consideration of any CNEL-based exterior noise standards. Project related noise issues would center more on noise from landfill operations possibly impacting off-site receivers rather

than from site suitability to the ambient noise environment. Those noise sources that are not pre-empted from local control are typically regulated by the municipal code. The City of Palmdale, however, has not adopted numerical performance standards as part of the City’s municipal code or a noise ordinance. The City’s noise/land use standards are articulated in the Noise Element of the General Plan. General plan standards are goals, and do not have the force of law. However, they are well suited as significance criteria for project environmental clearance.

**TABLE 4.5-1  
CITY OF PALMDALE NOISE GUIDELINES/STANDARDS**

Land Use	Maximum Acceptable Exterior Noise Levels	Maximum Acceptable Interior Noise Levels	Scale
Residential SFR MFR MHP	65 65 65	45 45 45	dBA CNEL dBA CNEL dBA CNEL
Commercial Including, but not limited to: Retail Services Office	A noise level which does not jeopardize health, safety, and welfare of visitors.	55 55 55	Leq(h) Leq(h) Leq(h)
Institutional Including, but not limited to: School Hospitals Nursing Homes	A noise level which does not jeopardize health, safety, and welfare of visitors.	45 45 45	Leq(h) Leq(h) Leq(h)
Industrial Including, but not limited to: Industrial Park Business Park  Quarry	A noise level which does not jeopardize health, safety, and welfare of visitors.  Maximum 65 Leq(h) at the interface with residentially designated land.	65 65  N/A	Leq(h) Leq(h)  

Source: City of Palmdale, Palmdale General Plan, January 25, 1993.

Leq(h) The A-weighted equivalent sound level averaged over a period of “h” hours. An example would be Leq(12) where the equivalent sound level is the average over a specified 12-hour period (such as 7:00 a.m. to 7:00 p.m.). Typically, time period “h” is defined to match the hours of operation of a given type of use.

The City of Palmdale General Plan Noise Element establishes noise impact thresholds for noise abatement and attenuation, in order to reduce potential health hazards associated with high noise levels. Noise ordinances/guidelines are typically directed at controlling noise from both mobile and stationary sources and their intrusion onto adjacent properties. Enforcing noise ordinances/guidelines is an effective tool in controlling non-transportation noise sources. It should be noted that Federal and State Laws regulate noise from transportation sources on a CNEL basis (refer to the Palmdale Guidelines Chart, above). Although not specifically identified in **Table 4.5-1**, active sports parks are also noise generators, as well as being noise-sensitive receivers. Based upon the State's Model Noise Element, a less stringent noise standard of 70 dB CNEL would be appropriate for this use. The Noise Element of the Palmdale General Plan includes policies addressing the following issues:

- Land Use Compatibility;
- Restriction of hours of operation for construction equipment, power mowers, garbage collection, street sweeping, truck deliveries, leaf blowers and other noise activities within the hours of 6:30 a.m. and 8:00 p.m., unless the work is made in response to an emergency or special purpose; and
- Periodic investigation of noise sources throughout the City, with citations issued for the offender, in addition to investigations conducted due to such complaints.

### **Municipal Code**

The Palmdale Municipal Code (Section 9.16.040), prohibits, "unnecessary noises or sounds which are physically annoying to persons of ordinary sensitiveness or which are so harsh or so prolonged or unnatural or unusual in their use, time, or place as to occasion physical discomfort to the inhabitants of any neighborhood." In the absence of numerical standards, defining "harsh, prolonged, unnatural or unusual," the City of Palmdale Noise Element noise standards have been used as a guideline for defining excessive noise.

In addition, Section 8.28.030, Prohibited Activities, limits construction or repair work, earth excavation, filling or moving, the use of air compressors, jack hammers, power-driven drills, riveting machines, diesel power truck, tractors or other earthmoving equipment, hand hammers on steel or iron, or other machines, tools, devices or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home or other place of residence between the hours of 6:30 a.m. to 8:00 p.m.

Although heavy equipment operations on the landfill will typically not occur outside these hours, placement of daily cover could occur briefly after 8:00 p.m. with limited heavy equipment necessary to apply cover materials. Such equipment operations would be considered "operational noise" and would thus not be considered prohibited activities under Section 8.28.030. However, because of the enhanced noise sensitivity before 6:30 a.m. and after 8:00 p.m., a more stringent exterior noise standard than 65 dB CNEL, as shown in **Table 4.5-1** at any residential property, would be appropriate. A nocturnal standard of 55 dB Leq (half as loud as allowed in the daytime) is recommended for equipment operations outside the 6:30 a.m. to 8:00 p.m. window.

**BASELINE NOISE LEVELS**

Noise levels can be obtained by actual field measurements with a noise level monitor, or can be calculated by computer modeling. Field measurements are important in identifying peak noise levels and extraordinary acoustic features (building, walls, etc.) that may affect calculated noise levels. Computer models are most useful in predicting highway and airport noise levels.

Existing noise levels in the landfill vicinity derive from refuse trucks and from on-site heavy equipment. The variable terrain of the project site shields off-site receivers except during brief periods of direct line-of-sight. With terrain shielding and the buffering effects of distance and with no noise-sensitive uses closer than ½ mile to the landfill boundary, there are no noise issues associated with existing landfill operations. Any public noise perception of landfill operations is through the truck traffic generated by the facility.

Long-term (48+hour) noise readings were conducted at two locations where project-related trucks traffic may affect the local noise environment. Measurements were made from March 15 to the end of March 17, 2004. One recording digital sound level meter was placed near an existing residence at the northeast corner of Tierra Subida and Rayburn at 60 feet from the Tierra Subida centerline. A second meter was placed on a fence at the parking lot of the Pelona Vista Sports complex somewhat farther from roadway traffic. Results of the measurements are shown in **Table 4.5-2**. Refer to **Figures 3-1** and **4.5-2** for the actual locations of the existing residential and the Pelona Vista Sports Complex.

**TABLE 4.5-2  
NOISE MONITORING SUMMARY (dBA)\***

Parameter	Nearest Residence		Pelona Vista Sports Complex	
	3/16/04	3/17/04	3/16/04	3/17/04
24-hour CNEL:	73	71	66	66
Max. 1-hour Leq	71	70	64	63
When (?)	19-20	18-19	06-07	05-06
2 <sup>nd</sup> High	71	69	61	63
When (?)	20-21	06-08	12-13	05-06
3 <sup>rd</sup> High	70	69	60	61
When (?)	06-07 17-19	16-18 --	18-20 --	04-05 19-20
Min. 1-hour Leq	56	55	53	53
When (?)	02-03	02-03	02-03	01-03
1-Sec. Max.	86	82	81	82
1-Sec. Min.	36	35	42	43

*Source: Giroux & Associates, 2004*

\*The measurement figures do not assume any sound attenuation factors such as masonry walls and intervening topography.

Near Tierra Subida, existing “non-attenuated” noise levels at the property line of the closest homes are in excess of the 65 dBA CNEL City of Palmdale standard for residential uses. Usable outdoor space requires noise protection in any areas in close proximity to Tierra Subida. These measurements were made near the curb and existing residential outdoor space is within acceptable levels when the attenuation

factors (i.e., existing walls and greater setbacks) are taken into account. Based upon accepted noise industry standards, the attenuation effect of the existing masonry walls (which measured 7 feet in height from the curb) and additional setback, would be 9-10 dB less than the actual “non-attenuated” measurements in **Table 4.5-2**.

Existing noise levels in the sports park parking lot are less than the 70 dB CNEL standard considered acceptable by the State Model Noise Element for active sports parks. Additionally, the playfields have a greater setback and are depressed from full roadway view. Based on the existing measurements, park playing areas are not considered to be currently impacted by surrounding on-street traffic noise.

#### 4.5.3 THRESHOLD OF SIGNIFICANCE

Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a guideline of consequences that are deemed to have a significant effect on the environment. According to the Environmental Checklist, a project may be deemed to have a significant noise effect if it will:

- 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. Noise levels exceeding the City of Palmdale General Plan Noise Standards would be considered significant.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The term “substantial increase” is not defined by any responsible agency. The limits of perceptibility by ambient grade instrumentation (sound meters) or by humans in a laboratory environment is around 1.5 dB. Under ambient conditions, people generally do not perceive that noise has clearly changed until there is a 3 dB difference. Changes in community noise levels of less than 3 dB are normally not noticeable, and are therefore considered less than significant.<sup>1</sup> A threshold of 3 dB or greater is commonly used to define “substantial increase” and is utilized to define a significant traffic noise impact in the following analysis.

#### 4.5.4 PROJECT IMPACTS

Two characteristic noise sources are typically identified with land use intensification such as that proposed for the AVPL expansion/reconfiguration project. Because there are only limited planned construction activities associated with the project, there are correspondingly limited construction noise impacts. Potential noise impacts are primarily operational-related.

Increased landfill activities, especially increases in heavy equipment, could create noise impacts near the project site. Unless such activities occur near noise-sensitive residential uses, impact potential is

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<sup>1</sup> Assessment of noise with respect to community response, ISDN 1996, International Standardization, Switzerland.

minimal. Upon implementation, gradual increases in the outbound and inbound haul trucks could cause an incremental increase in long-term, area-wide noise levels throughout the project area. Traffic noise impacts are generally analyzed both to ensure that the project does not adversely impact the acoustic environment of the surrounding community, as well as to ensure that the project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting upon the project. There are no project-siting constraints for a landfill, therefore, the focus of the noise analysis will be upon the surrounding community.

Project related noise impacts may derive from on-road traffic, as well as from on-site landfill operations. The relationship between traffic and noise is logarithmic. It takes a large change in volumes to produce only a small change in decibels. The incremental noise impact from the increased landfill traffic will likely be masked by the baseline condition. The project related area-wide traffic noise impact has also been incorporated into noise mitigation required for all residential and other noise sensitive development constructed adjacent to any of the circulation element and the general plan roadways. Project related noise impacts would derive mainly from on-site noise sources possibly impacting the nearest adjacent residences, but there is a substantial source receiver separation to dissipate such noise.

Although no formal application has been submitted, based upon existing zoning a future industrial park may be proposed for a residual portion of the Arklin property that is closer than existing or planned residences. **Table 4.5-1** shows, that there are no exterior noise standards for industrial land uses. The interior standard is 65 dB Leq. With typical structural attenuation of 25 dB for industrial buildings, exterior noise levels of 90 dB Leq could be accommodated. This level is not reached even within 100 feet of any landfill activity. Project noise impacts to the possible future industrial uses are not considered significant.

### CONSTRUCTION NOISE IMPACTS

**Impact 4.5-1** Potential for an audible impact to existing residences as a result of landfill ancillary facility construction activities and the realignment of City Ranch Road (R-5 access) which would connect to a new frontage road (see Figure 4.7-13).

Several construction activities are associated with the proposed project that will be mostly located well away from the nearest residences. They include roadway paving, creek stabilization and armoring, and ancillary structures. The types of equipment needed to construct these improvements are typically smaller than the dozers, earthmovers, and compactors that currently operate on the landfill. Existing landfill equipment operations do not create any significant noise impacts at any off-site receivers, and similarly minor project construction will not create a significant noise impact. Because the majority of such construction will not entail use of impulsive equipment such as pile drivers, the City of Palmdale residential noise standard of 65 dB (CNEL) for exterior noise levels will similarly not be exceeded at the nearest residences. Depending of the final design for the creek stabilization, pile drivers may be utilized for a short duration during construction (i.e., two to four weeks) and would not result in a significant impact, as described below.

The realignment of the landfill access to R-5 and the construction of a new frontage road that connects to City Ranch Road and intersects Tierra Subida at Rayburn Road) will occur closer to existing residences, and could thus have an audible impact. The closest point of grading for the realignment will be approximately 250 feet from the nearest home. The peak equipment noise level during grading will be 90 dB at 50 Feet from the source. The peak level will be reduced by 14 dB to 76 dB between the

measurement reference point (50 feet) and the nearest residence (250 feet). The peak exterior noise levels observed during on-site measurements at the property line of the residence was 82-86 dB. Peak roadway realignment construction noise will be 6-10 dB lower than from existing roadway traffic noise. Thus, the roadway realignment construction noise would be less than the existing peak noise levels and would therefore be masked by the existing traffic noise. Additionally, the City's Municipal Code restricts construction activities during the evening, early morning, and Sundays, avoiding noise-generating activities during the sensitive night hours. This construction impact would not be considered significant due to the following: 1) the construction noise (which is considered a short-term impact) would be masked by existing traffic noise, 2) the construction noise has restricted hours, and 3) **Mitigation Measure 4.5-1** is proposed to be implemented.

The City of Palmdale Municipal Code restricts construction activities during the evening, early morning, and Sundays, avoiding noise-generating activities during the sensitive night hours. This construction impact would not be considered significant due to the relatively short period of construction, restricted hours, and implementation of **Mitigation Measure 4.5-1** identified below.

### ON-ROAD HAULING NOISE IMPACTS

**Impact 4.5-2** Potential for significant off-site traffic noise impacts related to increased hauling trucks.

Noise could increase as a result of project-related traffic and increases in hauling trucks. The anticipated daily landfill disposal rate increase is designed to accommodate the demand for increased refuse from the growing population. The same vehicles and haul trucks would be on local roads driving out of County, or possibly out of State, for the same landfill resources if they were not available locally.

Project related traffic noise was calculated for existing and near term scenarios based upon existing traffic volumes and future year 2007 cumulative traffic forecasts. As shown on **Table 4.5-8**, a total of five different roadways including six roadway segments along Tierra Subida were analyzed for three different scenarios, #1 Year 2004 Existing Tonnage and Traffic; #2 Year 2007 Cumulative Traffic with Project Average Daily Tonnage Intake of 3,613 tpd; and #3 Year 2007 Cumulative Traffic with Project Peak Daily Tonnage Intake of 5,548. The vehicle mixes (truck percentages) observed on local area roadways were used to calculate vehicle noise. Project related noise impacts were weighted to account for the day/night vehicle distribution. Noise calculations are very sensitive to nocturnal trucks because a truck is twenty times noisier than a car, and each truck on the road before 7:00 a.m. counts as ten trucks in calculating CNEL. Each nocturnal truck is the "noise equivalent" of 200 daytime cars. Day/night truck noise was therefore calculated separately from the baseline to account for the increased sensitivity to nocturnal trucks within the total noise signature.

The results of the traffic noise impact analysis are shown in **Table 4.5-3**. The maximum increase in traffic noise compared to existing conditions is +1.8 dB along Rayburn Road east of the landfill entrance. This increase is due to a combination of expanded landfill truck traffic and cumulative growth. The individual noise contribution due to the project is small, and the cumulative increase of +1.8 dB does not exceed the defined significance threshold. The closest outdoor residential recreational areas near the Rayburn Road/Tierra Subida intersection that will experience a maximum noise increase are shielded from the roadway by a perimeter wall. The noise reduction from this barrier is 5+ dB. Backyard noise levels with peak project traffic and the realigned intersection will be 62 dB CNEL or less, compared to the City standard of 65 dB CNEL. It should be noted that because the proposed project is currently permitted by County approved CUP# 93041 to receive up to 1,800 net tpd and up to 3,564 total gross tpd,

the 1.8 dB increase is presenting a “worst-case analysis.” This increase compares traffic noise levels of the existing “average” tonnage intake (i.e., 1,372 tpd) to traffic noise levels of the proposed future “peak” tonnage intake (i.e., 5,548 tpd). Project related off-site traffic noise impacts are considered individually and cumulatively less than significant.

Any increase in truck traffic associated with peak activity days is primarily daytime traffic. The absence of any substantial nocturnal traffic increase creates only a very small noise difference between the peak versus the “normal” activity day. Maximum noise differences between the two scenarios are 0.1 dB. Such differences are indistinguishable.

**TABLE 4.5-3  
TRAFFIC NOISE IMPACT ANALYSIS (dB CNEL)  
(At 50 feet from roadway centerline)**

Roadway/Segment	Existing/		Future (2007)*	
	1,372 tpd Existing Inflow		3,613 tpd Proposed Average Inflow	5,548 tpd Proposed Peak Inflow
<b>Tierra Subida</b>				
North of Palmdale Boulevard	69.8		70.8	70.9
Palmdale-5 <sup>th</sup> Street West	69.1		70.3	70.4
5 <sup>th</sup> Street West-Rayburn	69.0		70.4	70.4
Rayburn-Site Entrance	67.1		-	-
Site Entrance-Avenue S	67.0		68.5	68.5
South of Avenue S	60.6		62.0	62.0
<b>Elizabeth Lake/Palmdale</b>				
West of Tierra Subida	70.5		71.4	71.4
<b>5<sup>th</sup> Street West</b>				
Palmdale-Tierra Subida	64.5		65.4	65.4
<b>Rayburn Road</b>				
East of Tierra Subida	65.4		67.1	67.2
<b>Avenue S</b>				
West of SR-14	67.0		68.4	68.4
East of SR-14	72.1		73.0	73.0

Source: FHWA-RD-77-108 (Calveno Mod).

\* Including effects of cumulative growth.

- = Site entrance is proposed to be relocated to Rayburn Road therefore, this segment of Tierra Subida would not exist in the future scenarios.

**OPERATIONAL NOISE IMPACTS**

**Impact 4.5-3** Potential for operation noise impacts to existing and future residences as a result of the expanded landfill hours for receipt of refuse and the on-site heavy equipment used in earthmoving activities and the compaction processes.

Landfill operation noise impacts can occur as a result of on-site heavy equipment used in earthmoving activities and the compaction processes, as well as on- and off-site on-road refuse haulers. **Figure 4.5-1, Typical Equipment Noise Generation Level** shows the typical range of noise generation as a function of equipment used in landfill operations.

Earth moving equipment is usually the largest source of noise with noise levels ranging up to about 90 dB(A) at 50 feet from the source. Measurements have shown; however, that the noise levels in **Figure 4.5-1, Typical Equipment Noise Generation Level** tend to be more associated with periodic events under full load rather than chronic (hourly or longer) noise exposure. Short term noise generation thus tends to be on the higher end of the ranges shown in **Figure 4.5-1, Typical Equipment Noise Generation Level**, while longer term exposure is at the quieter end of the noise spectrum.

Point sources of noise are atmospherically attenuated by a factor of 6 dB per doubling of distance (due to the spreading of sound waves), or about 20 dB in 500 feet of propagation. The loudest earth-moving noise sources will therefore sometimes be temporarily detectable above the local background beyond 1,000 feet from any individual operations area. An extensive noise impact envelope requires a clear line of sight from source to receiver. Landfills have irregular terrain that changes over the life of the project. Terrain screening of heavy equipment reduces noise impacts to any nearby sensitive-source receivers. The project site is intermittently shielded from line-of-sight to existing homes to the north and east by intervening terrain. Where there is a clear line-of-sight relationship, the applicant proposes to develop a mitigation berm for noise impact reduction as shown in **Figure 3-5, Typical Landfill Construction** in Section 3.0 of this EIR. Although off-site noise impacts will be less than significant without the berm as noted below, the added attenuation from the berm will further increase the margin of safety.

Based upon earthmoving equipment noise measurements conducted at large construction sites and at the Cedar Hills Landfill in Kings County, Washington, the measured reference noise level around large construction projects involving multiple pieces of equipment with varying duty cycles is around 80 dB Leq at 50 feet from the center most location of the noise generation activity. If this Leq measurement is converted to a CNEL measurement, it also results in 80 dB CNEL. This is based upon the following assumption. The City of Palmdale exterior noise standard for recreational uses is 65 dB CNEL. At 50 feet from the center of activity, for 1.5 hours of nocturnal equipment operations and 12 hours of daytime noise generation (plus nominal evening activity), the weighted 24-hour CNEL is 81 dB (the nocturnal “penalty” in the CNEL calculation from operations from 5:30 a.m. to 7:00 a.m. is balanced by 12 hours of no operations).

Under direct line-of-sight assumptions, geometrical spreading over irregular ground and atmospheric absorption will reduce the 81 dB CNEL reference level as follows:

Distance (feet)	Level (dB CNEL)	Standard (General Plan)
220	65	Residential exterior standard*
550	55	Residential interior standard with open windows

\*Also meets residential interior standard with closed windows.

Because of the greater nocturnal noise sensitivity for residences, a more stringent noise standard than a 24-hour average should be applied for sleep protection. The suggested one-hour noise standard is 55 dB

Leq instead of the 65 dB Leq allowed by the General Plan Noise Element for an industrial/residential interface (see **Table 4.5-1**). This most stringent standard is met 890 feet from the source for maximum continuous one hour activity with no terrain or berm shielding. **Figure 4.5-2** shows the distances to existing and proposed residential uses from the future landfill operations. Based upon the distances shown in **Figure 4.5-2** (i.e., residential is beyond 1,000 feet), there would be no operational impacts associated with the distance requirement for the most stringent one-hour Leq noise standard.

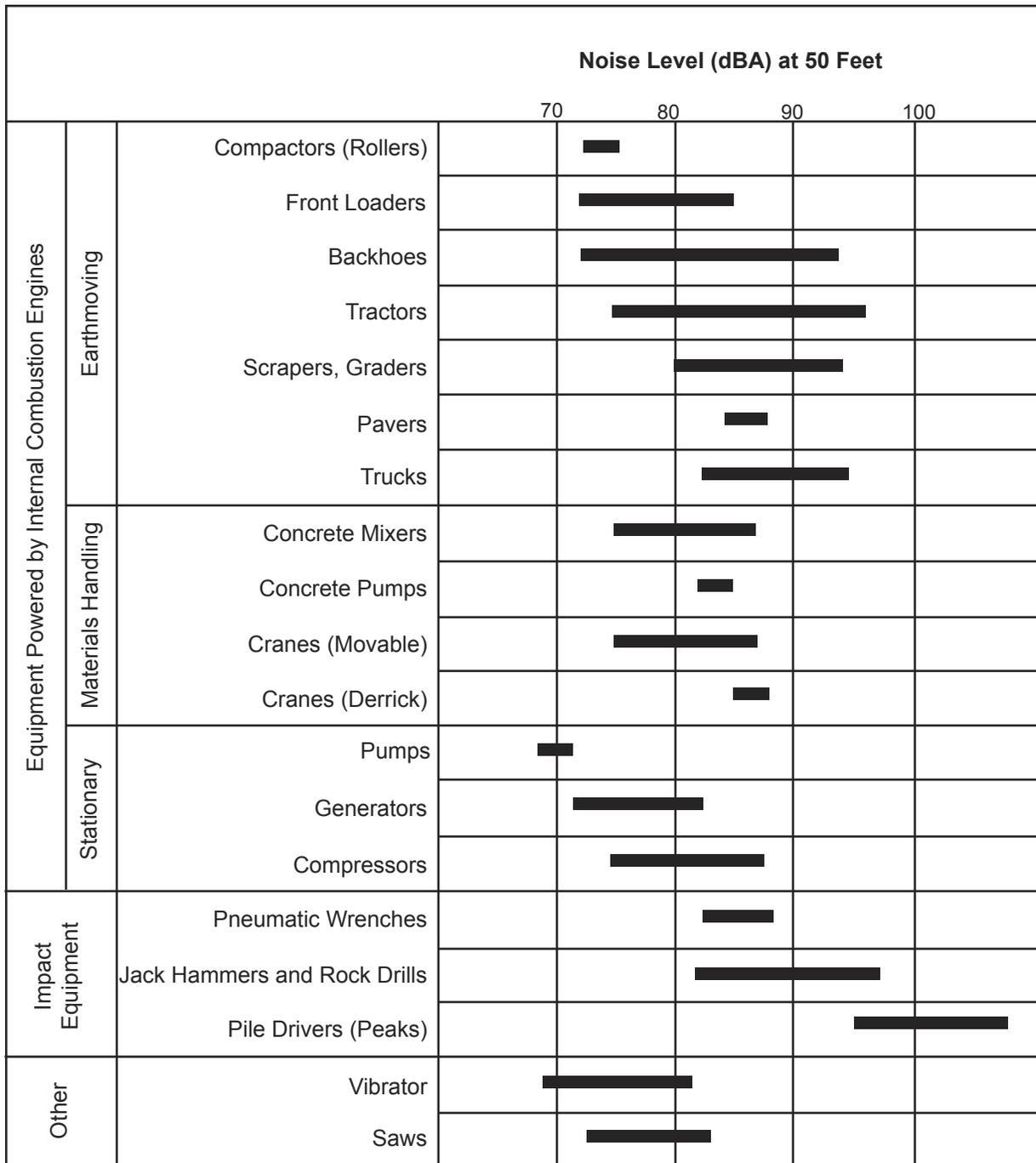
Based upon the locations of existing and future noise sensitive receptors (i.e., residential uses are well over 500 feet from the Landfill operations), all noise standards will be met within the landfill boundary even under assumed direct line-of-sight conditions. With irregular terrain normally interrupting line-of-sight relationships, the margin of safety will be even greater.

Landfill equipment operates intermittently while excavating or hauling dirt, or while compacting refuse and cover soil. Equipment operates at full power for much less than 30 minutes per hour. The landfill is currently authorized to receive waste from 6:00 a.m. to 5:00 p.m. Heavy equipment operations may begin slightly before 6:00 a.m. to prepare the working face, and end after 5:00 p.m. to place final cover.

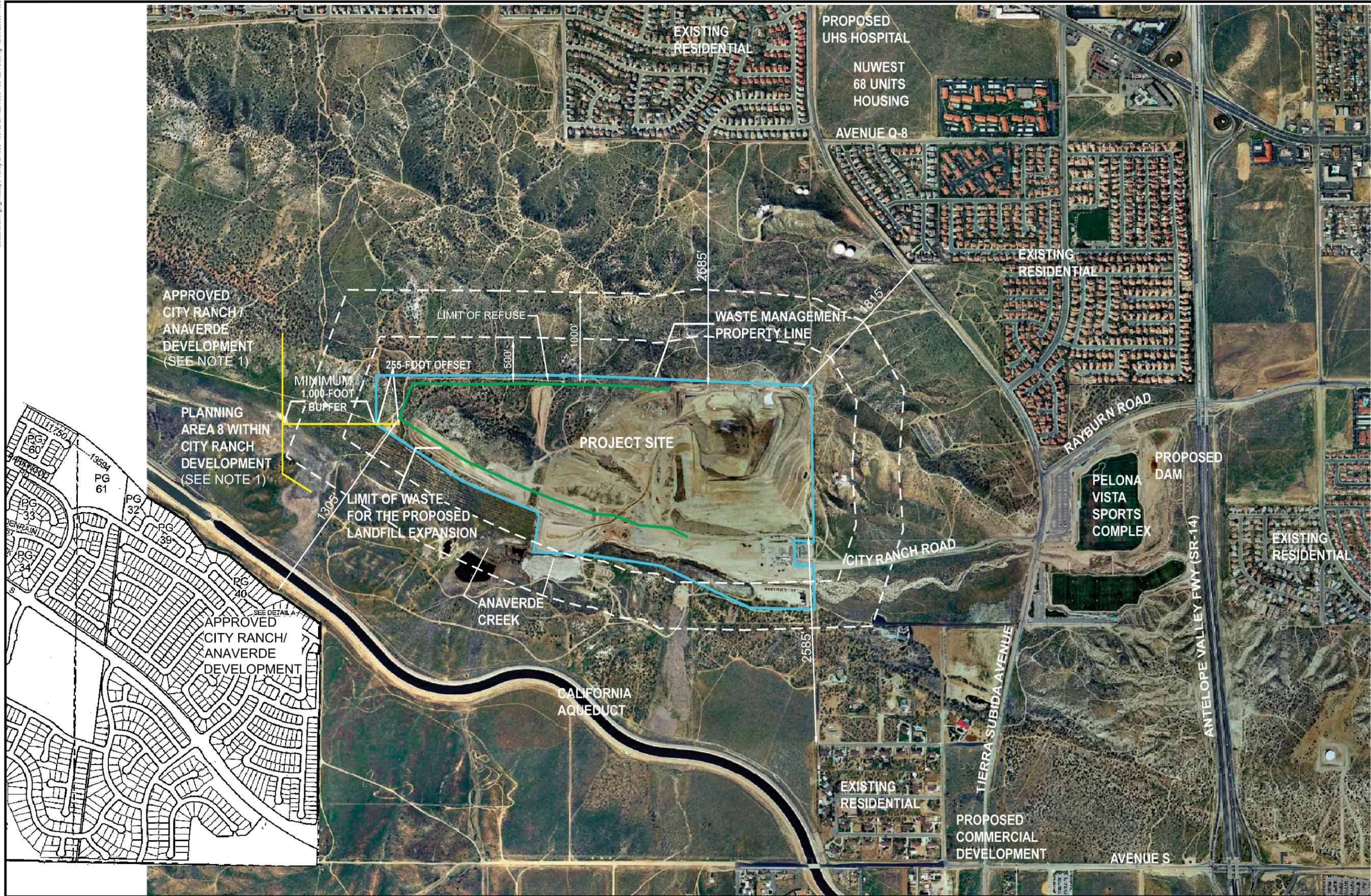
Although the hours for the “receipt of refuse” are proposed to be expanded from 5:00 p.m. to 8:00 p.m. as part of this project, there are no changes proposed for the “landfill operational hours.” Please refer to **Table 3-3** in Section 3.0 of this EIR. As outlined below, noise associated with the expanded receipt of refuse hours from 6:00 p.m. to 8:00 p.m. (i.e., traffic noise from delivery of refuse to scales) would fall well below the City of Palmdale Noise Standards, above.

Placement of cover for any material received near closing may require two pieces of equipment operating for an additional 30 minutes after the landfill gate closes. While heavy equipment is required to cease operations at 8:00 p.m. on construction projects, landfilling is not considered “construction.” The additional 30 minutes of noise generation after 8:00 p.m. creates a one-hour 55 dB Leq(1) contour distance of 630 feet for worst-case propagation assumptions. There will be no post 8:00 p.m. equipment operations within 630 feet of any existing or future homes. As shown in **Figure 4.5-2** all existing or proposed residential uses are located beyond this distance. Therefore, no significant noise impacts associated with the increased receipt of refuse hours are anticipated.

If any noise nuisance were to be experienced at any existing or future residential uses, it would be more from single event noise rather than from hourly or daily average. Two single event noise sources that occur on landfills that have engendered complaints at some locations are equipment back-up alarms and bird repellent noise generators. No noise complaints have been registered for existing operations because of distance buffers and intervening barriers. An analysis of the potential noise impacts from these single noise events on existing and future residential uses is provided below.



Source: EPA PB 206717, Environmental Protection Agency, December 31, 1971, "Noise from Construction Equipment and Operations."



**NOTE**

- 1. PARCEL INFORMATION FOR PLANNED DEVELOPMENT IS NOT AVAILABLE.

**Figure 4.5-2**  
**Distances to Residential Uses**  
**from Landfill Activities**

Peak noise level from percussive or explosive devices to frighten away scavenger birds are 125 dB (Rid-S supplier brochure). Noise attenuates from spherical spreading losses as it propagates outward. Any terrain screening will also reduce off-site levels. The City of Palmdale has no numerical standards for short-term noise levels. The Los Angeles County Noise Ordinance has a daytime “Lmax” standard of 70 dB for residential properties (90 dB for industrial zoning). The noise levels as a function of distance from the source are as follows:

Standard	Distance to Meet “L Max” Standard		
	Line-of-Sight	Partial Screening	Full Screening
Industrial (90 dB)	75’	<50’	<50’
Residential (70 dB)	750’	230’	75’

Residential standards will not be exceeded if there is a 750-foot separation between the noise source and the nearest residence even under line-of-sight conditions (worst-case) (see **Figure 4.5-2**). Maintaining this minimum setback, and not beginning bird control operations until 7:00 a.m. (required by **Mitigation Measure 4.5-2**) will maintain a less than significant impact.

Back-up alarms generate noise levels of up to 95 dB directly behind the alarm. Under spherical spreading losses, the level at 50 feet would be 75 dB, and 55 dB at 500 feet. The suggested 70 dB Lmax standard is met at 90 feet from the source and based upon distances to existing and future sensitive receptors (see **Figure 4.5-2**) no significant noise impacts are anticipated.

Noise associated with the expanded receipt of refuse hours from 5:00 p.m. to 8:00 p.m. (i.e., traffic noise from delivery of refuse to scales) would fall well below the City of Palmdale Noise Standards, above. Therefore, no significant noise impacts associated with the increased receipt of refuse hours are anticipated. The proposed project operations would not exceed the City of Palmdale Noise Standards for anticipated site uses. However, because single-event noise may be intrusive even if standards are not exceeded, **Mitigation Measure 4.5-2** is proposed to ensure noise levels remain at less than significant level.

**4.5.5 CUMULATIVE IMPACTS**

In analyzing the cumulative off-site traffic noise impacts, the 2007 traffic forecasts contained in the Kunzman Associates Traffic Study (which incorporated the 6% annual growth factor) were utilized. Additionally, the operational activities of the landfill in conjunction with the construction impacts of the proposed ancillary facilities, including the realignment of City Ranch Road (R-5 access) and the new frontage road and the construction of other future projects listed in Section 3.5.2 were also taken into account in the analysis of cumulative noise impacts.

**Impact 4.5-4** Potential for cumulative noise impacts as a result of expanded landfill truck traffic and future cumulative growth in Year 2007.

**Impact 4.5-5** Potential for cumulative noise impacts as a result of the construction activities for the landfill ancillary facilities and the realignment of City Ranch Road (R-5 access and the new frontage road) in conjunction with the landfill expansion operational activities and construction of projects in the surrounding area.

The project would not individually create a significant traffic noise impact, nor would it substantially contribute to the cumulative traffic noise impact. The maximum cumulative increase in traffic noise compared to existing conditions is +1.8 dB along Rayburn Road east of the landfill entrance. This increase is due to a combination of expanded landfill truck traffic and cumulative growth in traffic on the surrounding roadways. The cumulative increase of +1.8 dB does not exceed the defined significance threshold; therefore, the cumulative noise impacts are considered less than significant. Additionally, the project's construction activities in conjunction with its operational activities and construction of projects in the surrounding area would not create a cumulatively significant noise impact with regulation compliance and mitigation. As would the proposed project, other cumulative development projects would be individually required to reduce construction noise impacts below City noise standards and demonstrate adherence to the City of Palmdale requirements.

#### **4.5.6 MITIGATION MEASURES**

Many of the project impacts are reduced by the project's required compliance with landfill design and operating regulations, city/agency standards and regulations related to construction/development projects and/or by the incorporation of project design measures. Only the proposed project mitigation measures have been numbered to facilitate the distinction between mitigation measures, regulation compliance, and design measures.

#### **CONSTRUCTION NOISE**

Construction activity for the realignment of City Ranch Road (R-5 access and the new frontage road) shall be limited between the hours of 6:30 a.m. and 8:00 p.m., Monday through Saturday only and excluding legal holidays in compliance with the City's noise standards within the Municipal Code.

**4.5-1** In conjunction with grading permit issuance for the realignment of City Ranch Road (R-5 access and the new frontage road) and during grading and construction operations, the following mitigation measures shall be implemented for the project:

- a. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the City's Public Works or Building Inspector.
- b. During construction of the new landfill access road, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the extent practical, to the satisfaction of the City's Public Works or Building Inspector.
- c. During construction of the new landfill access road and to the satisfaction of the City's Public Works Inspector or Building Inspector, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities.

#### **OPERATIONAL NOISE**

The proposed project would not exceed the City of Palmdale Noise Element or Municipal Code for anticipated site uses. However, because single-event operational noise may be intrusive even if standards are not exceeded, noise protection is recommended as follow.

**4.5-2** Operational activities before 6:00 a.m. or after 8:00 p.m. shall be restricted as follows:

- a. No receipt of refuse or unloading activities shall be conducted during those hours.
- b. No heavy equipment operation within 1,000 feet of any residence under clear line-of-sight conditions shall take place during those hours.
- c. No bird repellent activity using sound generators shall occur before 7:00 a.m. or after 8:00 p.m.

#### **4.5.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION AND REGULATION COMPLIANCE AND/OR PROJECT DESIGN MEASURES**

The project has the potential to create an audible impact to existing residences as a result of landfill ancillary facility construction activities and the realignment of City Ranch Road (new frontage road and R-5 access). Several construction activities are associated with the proposed project; however, the project site is located well away from the nearest residences. The realignment of the landfill access (new frontage road and R-5 access) would occur closer to existing residential development; however, the closest point of grading to the existing residences will be approximately 250 feet away, and the peak construction noise will be 6 to 10 dB lower than from existing roadway traffic. Compliance with the municipal code and implementation of **Mitigation Measure 4.5-1** will further reduce potential construction noise impacts to less than significant levels.

No project-specific or cumulative significant noise impacts from on-road hauling activities have been identified. The highest increase of 1.8 dB does not exceed the defined 3dB significance threshold. Although there is a potential for cumulative noise impacts due to expanded truck traffic and cumulative growth, the increase does not exceed the defined 3dB significance threshold. The impact is considered less than significant.

There is a potential for operational noise impacts to existing and future residences as a result of the expanded landfill hours for receipt of refuse and the on-site heavy equipment used in earthmoving activities and the compaction processes. However, the nearest noise-sensitive land uses are well beyond 1,000 feet from the landfill (see **Figure 4.5-2**). The proposed project operations would not exceed the City of Palmdale Noise Standards for anticipated site uses. However, **Mitigation Measure 4.5-2** is proposed to address single-event noise that may be intrusive even if standards are not exceeded.

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## 4.6 AESTHETICS/LIGHT & GLARE

### 4.6.1 INTRODUCTION

This section of the EIR analyzes how the proposed expansion/reconfiguration project may impact the visual character of the area, and how visually compatible it would be with the surrounding development and the existing on-site uses on the landfill. The project is located directly west of the Antelope Valley Freeway (SR-14) within the City of Palmdale adjacent to the City Ranch Road in an area known as the Anaverde Valley. Aesthetics issues related to Landfill II were discussed under the topic of visual qualities in the previous 1992 certified EIR for Landfill II.

### 4.6.2 EXISTING CONDITIONS

#### SCENIC RESOURCES/VISUAL QUALITIES

The site lies at the existing terminus of City Ranch Road, west of Tierra Subida Avenue. The existing project site is comprised of Landfill I, Landfill II, and ancillary uses for a total of approximately 180 acres. Existing ancillary facilities/uses are located to the south of Landfill I (see **Figures 1-4**, Site Plan and **1-5**, Ancillary Facilities Layout Plan in Section 1.0). Additionally, a new alignment has been proposed for the entry drive, which passes from the intersection of Tierra Subida and Rayburn Road through the existing terminal ridgeline to the present entry roadway, then follows a straightened alignment immediately north of the existing row of power poles to the landfill truck scales.

The two scenic resources in the vicinity of the proposed project are Antelope Valley Freeway (SR-14) and Elizabeth Lake Road which are both defined by the County of Los Angeles as First Priority Scenic highways. A scenic highway is a road which, in addition to its role as a transportation corridor, provides opportunities for enjoyment of natural and man-made scenic resources where aesthetic values are protected and enhanced. The project is not visible from Elizabeth Lake Road looking east, but it is visible from SR-14.

According to the City of Palmdale General Plan, Environmental Resources section, Policy ER1.2.2 designated Tierra Subida Avenue, Elizabeth Lake Road, and Antelope Valley Freeway, south of Rayburn Road as City scenic highways. Special design standards shall be applied for projects adjacent to these highways in order to protect their scenic qualities (*General Plan Amendment 98-3, adopted by City Council June 10, 1998*). The City of Palmdale General Plan does not identify any other surrounding resources as "Scenic Vistas or Views."

Additionally, General Plan Policy ER 3.1.5, regarding the visual quality of the hillsides within the City is applicable to the project. This policy encourages retaining and maintaining the integrity of the natural ridgelines of Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains.

City of Palmdale General Plan Policy ER 3.1.2, regarding topography and natural terrain, is applicable to the proposed project. According to this policy, any project within the City should adopt grading standards that respect the natural terrain, minimize earth moving activity, minimize visual effects of large cut and fill slopes, and provide for the preservation of unique and significant natural landforms where feasible.

### Visual Simulation Study

A visual simulation study which includes the figures contain in this section was conducted by Golder Associates. The visual modifications as a result of the proposed expansion/reconfiguration project have been analyzed through visual simulations which depict the proposed expansion/reconfiguration and height increase in a realistic setting utilizing a series of photographs from nine (9) locations anticipated to be most impacted by the project. The nine (9) locations were determined through conversations/coordination with the City of Palmdale Planning Department.

**Figure 1-2**, Local Vicinity and **Figure 3-1**, Surrounding Land Uses in Sections 1.0 and 3.0 of this EIR, show the current surrounding land uses. **Figure 4.6-1**, Visual Simulation Photo Key Map is a photo key map which shows the locations where the existing photographs were taken. **Figures 4.6-2 through 4.6-10** are nine visual simulations for nine different locations in the vicinity of the project site. Each one of the simulations depicts three (3) different conditions: Condition #1 includes an existing view (described below). The figures also include Condition #2, a simulation of permitted Landfills I and II at build-out, and Condition #3, a simulation of the proposed expansion/reconfiguration project, which depicts Landfills I, II, and the expansion/reconfiguration area, at build-out.

**Figure 4.6-2**, Visual Simulation Location 1 is a view from the northwest corner of Avenue O and 10<sup>th</sup> Street West looking south toward the landfill. The existing view depicts an undeveloped area in the foreground, beyond which is the existing residential development (to the north of the landfill). The view shows the existing landfill site in the background.

**Figure 4.6-3**, Visual Simulation Location 2 is a view from approximately 350' east of the end of Summerland Drive near Amargosa Creek looking south toward the landfill. The existing view shows an undeveloped area immediately north of the existing residential development (to the north of the landfill). The view depicts the existing landfill in the background. The existing power poles divide the existing residential area from the vacant land along Summerland Drive.

**Figure 4.6-4**, Visual Simulation Location 3 is a view from the west side of the Antelope Valley Freeway at the top of the Rancho Vista on-ramp looking southwest toward the landfill site. The existing view depicts the existing residential development to the north and northeast of the landfill. Landfill I and the northeast corner of the site are visible in this view. The existing view also shows an undeveloped site in the foreground.

**Figure 4.6-5**, Visual Simulation Location 4 is a view from the southwest corner of Carriage Way and Auto Center Drive looking southwest toward the landfill site. The existing view depicts the northeast corner of the proposed project site in the background. The existing residential area to the north of the landfill is visible on the right side of the photo. The view depicts the existing commercial and business uses northeast of the project site. Undeveloped land is in the foreground of this view.

**Figure 4.6-6**, Visual Simulation Location 5 is a view from the north side of Rayburn Road at the Antelope Valley Freeway looking west toward the eastern boundary of the site. Left of Rayburn Road is the Pelona Vista Park and right of the Rayburn Road is the existing residential area. The existing view depicts the existing residential to the northeast of the site.

**Figure 4.6-7,** Visual Simulation Location 6 is a view from Sierra Highway near Avenue R-8 east of Metro Rail Tracks looking west toward the landfill. The existing view depicts the southeast end of the proposed project site. Beyond the metro rail tracks, the photo does not depict any existing uses.

**Figure 4.6-8,** Visual Simulation Location 7 is a view from the southwest side of Palmdale Boulevard midway between Trade Center Drive and the Antelope Valley Freeway looking southwest toward the landfill. The existing view depicts the northeast corner of the proposed project site through the existing residential and commercial uses.

**Figure 4.6-9,** Visual Simulation Location 8 is a view from near the intersection of Tierra Subida Avenue and Lakeview Drive looking north toward the landfill site. The existing view depicts the south side of the proposed project site.

**Figure 4.6-10,** View Simulation Location 9 is a view from the southwest of the existing landfill in the Anaverde housing development which is currently under construction, looking northeast toward the landfill. The photo depicts the southwestern edge of the existing landfill.

## LITTER

The Antelope Valley is frequented by high winds. During high wind conditions, lighter waste materials such as leaves, paper, and thin plastic bags can migrate from the working face of the landfill. This litter/debris is retained within the landfill boundaries by plastic mesh litter fences located along the perimeter of the landfill. Any stray litter can then be hand picked from this fence near the active face area. Primary litter at the working face is controlled by immediate placement of a clean earth cover. Litter removal and vehicle tarping programs are discussed in the Project Description, 3.0 of this EIR.

## LIGHT AND GLARE

The proposed project site is currently being used for the existing landfill. Light and glare from the existing site are currently generated by the streetlights, vehicular lights, existing ancillary use lighting (i.e., maintenance building) and portable flood lights associated with the on-site landfill roadways and working face areas on-site.

### 4.6.3 THRESHOLD OF SIGNIFICANCE

Appendix G of the CEQA Guidelines, Environmental Checklist Form, is used to determine if the proposed project would result in potentially significant adverse impacts. According to the Environmental Checklist, a significant adverse environmental impact would occur if the project results in any of the following:

- 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; or
- Create a new source of substantial shade or shadow that would adversely affect daytime views in the area.

The State CEQA Guidelines also indicate that a significant impact would occur if implementation of the proposed project would result in substantial obstruction of any scenic vista or public open space view. Additionally, a project would adversely impact the surrounding area if it would create an aesthetically offensive site open to view by the public.

#### 4.6.4 PROJECT IMPACTS

##### SCENIC RESOURCES/VISUAL QUALITIES

**Impact 4.6-1** Potential impacts to scenic resources related to the proposed 11-acre wedge expansion/reconfiguration, 60-foot height increase, and new frontage road.

The 1992 certified EIR for Landfill II indicated that the Antelope Valley Freeway (SR-14) and Elizabeth Lake Road were defined by the County of Los Angeles as First Priority scenic highways; however, no guidelines existed for development adjacent to those types of highways, and no adverse impacts to scenic resources were identified.

The proposed project has the potential to alter the on-site topography and change the visual character of the project site; however, the proposed expansion/reconfiguration project would not have a project specific adverse effect on a scenic highway, vista, or other identified scenic resources of the City and/or County General Plans, as the highways identified within the project area do not experience a significant visual change, as shown by the difference between Condition #2 and #3 within **Figures 4.6-2 through 4.6-10**.

When examining these simulations, it is important to note that the “project specific” impact or change is “the difference” shown between Condition #2 and Condition #3 on **Figures 4.6-2 through 4.6-10**. Since Condition #2 depicts a simulation of the already permitted Landfill II build-out, the project impacts (i.e., 11-acre wedge expansion and 60-foot height increase) are the visual changes between the two build-out/bottom conditions shown in the visual simulations. On the other hand, the “cumulative aesthetic impacts” (discussed in Section 4.6-5) are the visual modifications that would result from the existing Landfill I, combined with permitted Landfill II and the proposed project or the difference shown between Condition #1 and Condition #3 on **Figures 4.6-2 through 4.6-10**.

The visual simulations were used to provide a realistic analysis of the potential aesthetic impacts of the project. The existing views of the landfill site, described above, were utilized to build the computer generated visual simulation for the permitted Landfills I and II condition as well as the proposed expansion/reconfiguration condition. A digital topographic map of the landfill area, expansion site, and surroundings were digitally combined with photos taken at different locations to create realistic imagery of the build-out conditions of Landfills I and II and the proposed expansion/reconfiguration project.

It is evident from the visual simulations for permitted Landfill I and II and the proposed expansion/reconfiguration (**Figures 4.6-2 through 4.6-10**) that the difference between Conditions #2 and #3 (permitted Landfills I and II and the proposed expansion/reconfiguration) is minimal and hardly discernable through the simulations viewed from the north and east at view locations 1 through 5 (**Figures 4.6-2 through 4.6-6**). Partial views of the landfill can be seen at the closer northerly location 7. The landfill is visible above the existing ridgeline under the permitted and proposed project scenarios (**Figure 4.6-8**). Although it is difficult to see a difference between the “permitted” and “proposed” landfill conditions, it may be viewed to create a significant visual impact.

The “full view” of Landfills I and II and the “11-acre wedge” expansion area (only visible from the south, looking north, northeast, and northwest at view locations 6, 8, and 9) may be viewed to create a significant visual impact (**Figures 4.6-8 through 4.6-10**). However, it should be noted that the majority of Landfill I is already constructed and visible from the south and Landfill II is not constructed but permitted and environmentally analyzed in the previous 1992 certified EIR for Landfill II. (Therefore, Landfills I and II will exist regardless of the proposed expansion/reconfiguration. This section of the EIR document analyzes the “project specific” aesthetic impacts emanating from the expansion/reconfiguration, which proposes to fill the 400-foot gap that would exist between the two landfills at build-out and the increase in permitted height of Landfill II by 60-foot.)

The proposed 11-acre increase in the landfill footprint would eliminate the valley between Landfills I and II once they are both filled. Thus, a more natural transition between the two landfills would result, and this would create a more contiguous visual form consistent with the existing ridgeline. The project also proposes a height increase to the landfill overall. The currently permitted Landfills I and II have a maximum height of El 3,205 and El 3,140, respectively. The proposed project would result in a maximum height of El 3,200. The visual simulations reveal that this height increase is not visible or difficult to see from the eight (8) of the nine (9) view points analyzed. The height increase is visible in **Figure 4.6-10** as less of the existing ridgeline is visible from the south in Condition #3 (proposed project with height increase) as compared to Condition #2 (existing and permitted landfill).

**Mitigation Measure 4.6-1** is proposed to reduce the project-specific aesthetic impacts from the south at view locations 6, 8, and 9 (**Figures 4.6-8 through 4.6-10**). As required by **Mitigation Measure 4.6-1**, interim vegetative cover will be applied as land filling proceeds to help offset visual impacts. The application of interim vegetation is not required under existing permits for Landfill I and Landfill II development. This interim measure requires extra effort and expense for preparation of slopes for seeding, provisions for irrigation and continuous maintenance, which would otherwise not be experienced until site closure and application of final cover/vegetation. Although duplicative and more costly, this interim measure will help to mitigate the visual impact associated with development of the already permitted Landfills I and II as well as the proposed landfill expansion project.

Interim vegetation activities will be coordinated with proposed cell development and project phasing over time which will allow the outer slopes of the fill to receive vegetative cover material consistent with native species of the surrounding terrain. Daily cells, as shown in **Figure 3-5** (“Typical Landfill Construction”), will be constructed from east to west and north to south, terminating in an outer slope facing southerly as the filling operation generally progresses to the west. **Figures 3-11, 3-12 and 3-13** depict three general fill plans, or phases, in plan view, which are also presented as visual simulations in **Figure 4.6-10A**. The visual simulations of **Figure 4.6-10A** depict all three phases (A, B & C) with interim vegetation application on the outer slopes as the fill plans/phases are constructed. Although development timeframes for these fill plan phases may range generally from three (3) years to five (5) years, the outer southerly facing slopes will receive interim vegetation as they reach design grades at least every two (2) to four (4) years during the life of the landfill. Variables that determine these time frame ranges for fill plan phases and corresponding interim vegetation application include the rate at which refuse is brought to the landfill for disposal, type of material disposed and compaction density achieved for any particular period of time.

Upon landfill closure, all the exposed final fill grade surfaces will be fine graded for drainage and revegetated with native plant species to assist in returning the appearance to its pre-landfill condition;

thereby helping it blend in with the adjacent topography. This closure requirement has been repeated within **Mitigation Measure 4.6-1**.

Based upon the above discussions/analysis, supported by the visual simulations, and mitigation provided, the “project specific” visual impacts would be reduced to less than significant levels.

With respect to General Plan policy 3.1.5, mentioned under the existing conditions, the project will generally conform to this policy through project design and mitigation requirements. The proposed landfill expansion and access road project will respect the integrity of the natural ridgelines and seek to preserve the aesthetic character of the Antelope Valley.

However, in regard with Policy ER 3.1.2, it is not technically feasible for the project to comply with this policy due to Title 27 slope requirements. Additionally, the City’s adopted hillside grading standards are intended for new residential development occurring in the existing hillsides and ridgelines. The existing Landfill I, permitted Landfill II, and proposed “wedge expansion” are all to be constructed in front of, or adjacent to, the existing ridgeline rather than within or on top of the existing ridgeline. Therefore, the proposed expansion project in conjunction with the existing and permitted landfills will create a hillside versus actually grading an existing hillside. This “new hillside” created by the proposed project is intended to fill in the 400-foot gap between the existing Landfill I hillside and permitted Landfill II hillside. Refer to **Figure 4.6-9** and **4.6-10** which depict the landfill construction in front (i.e., foreground) of the existing ridgeline. The proposed “wedge expansion” project would be creating a series of slopes and hills that are intended to blend into the existing ridgelines.

On the other hand, the proposed landfill access road will need to comply with this policy as it will impact an existing hillside adjacent to Tierra Subida (**Figure 3-3** in Section 3.0 shows the existing hillside, and **Figure 4.7-13** in Section 4.7 shows the location of this proposed access and where it cuts into the hillside).

The project’s potential impacts in light of the General Plan policy, will be mitigated through **Mitigation Measure 4.6-1** interim revegetation of the outer slopes every two to four years, which intends to create a more natural setting and blend the newly constructed outer landfill slopes with the native species of the surrounding terrain. Additionally, with implementation of Mitigation Measure 4.6-2 (which requires a final roadway design consistent with this policy), the project’s potential impact related to the access road will be reduced to a level less than significant.

## LITTER

**Impact 4.6-2** Potential significant aesthetic impacts related to litter.

The litter removal crew averages four personnel who pick up stray debris on a daily basis. The four-person crew is augmented as necessary, in the case of high winds, to an average of fifteen to twenty personnel. The crew provides daily pick-up service around the perimeter of the landfill (including the area along the access roadway) as well as on the landfill property. Additionally, site personnel have installed plastic and steel mesh fences that surround the landfill in order to control litter that inadvertently escapes the working face of the site. Primary litter control at the working face is controlled by the immediate placement of clean earth cover over the refuse. Normally any stray litter is stopped by the plastic mesh fence surrounding the landfill and can be hand-picked from this fence near the active face area. Additionally, some incidental dumping has occurred in the past along the landfill access roadway.

The increase in the landfill's hours of operation may assist in reducing the amount of incidental dumping along the access road. **Mitigation Measures 4.6-3** and **4.6-4** are also proposed to reduce project-specific impacts associated with litter resulting from strong winds and/or illegal dumping along the landfill access roadway.

### LIGHT AND GLARE

**Impact 4.6-3** Potential increase in light and glare associated with the new ancillary uses.

As indicated in Section 3.0, the project includes the following new ancillary uses (truck scale, debris basins, relocated power poles, revised site entry, erosion protection for Anaverde Creek and a recycling drop off/transfer center). Based upon the nature of these new proposed uses (i.e., not major lighting generators), the proposed project would not create a significant new source of light or glare that would adversely impact day or nighttime views in the area. Additionally, the landfill currently utilizes portable lighting as necessary at the working face. While the proposed project will not increase the amount of portable lighting needed at the working face, the proposed change in hours of operation (i.e., 6:00 a.m. to 8:00 p.m.) could result in this lighting being utilized for an additional two hours under "worst case" non-daylight savings time conditions. Section 4.4, Biological Resources includes **Mitigation Measure 4.4-5** which requires the landfill utilize shielded downward, directed exterior light fixtures and sodium vapor or similar low-intensity bulbs. It further requires that all portable lighting be directed onto the target working face areas. With implementation of this mitigation, project light and glare impacts would be reduced to less than significant levels.

### 4.6.5 CUMULATIVE IMPACTS

The scope of analysis for cumulative impacts for aesthetics/light and glare is defined as the list of cumulative projects, as outlined in Section 3.5.2.

**Impact 4.6-4** Potential for cumulative aesthetic impacts, in conjunction with other cumulative developments in the area.

As discussed in Section 4.6.2 above, the impacts of the various physical components of the 11-acre footprint expansion/reconfiguration project (including the 60-foot height increase, the proposed landfill access road and power pole relocation and the increased size (+11 acres) and reconfiguration of the landfill itself), in conjunction with the existing and currently permitted landfill, would have a significant impact to the existing visual character of the area and the views south of the landfill. The project would also add to a cumulative effect that is in process caused by several projects in this semi-rural area (see Section 3.5-2). Together, these projects are altering the character of this area by introducing new tract residential and commercial uses that are out of character with the adjacent semi-rural residential and open space land uses. The cumulative effect of the proposed 11-acre wedge expansion and height increase, the existing Landfill I, the permitted Landfill II, and the access roadway upon the existing visual character and the views south of the landfill are considered significant and unavoidable. The mitigation measures proposed will help reduce some of the cumulative impact; however, the impact still remains significant and unmitigable.

**Impact 4.6.5** Potential for cumulative light and glare impacts, in conjunction with other cumulative developments in the area.

Cumulative impacts to light and glare are addressed in the General Plan EIR, and are best mitigated on an individual project basis through compliance with applicable building siting, massing, and design and lighting requirements. **Mitigation Measure 4.4-5** included within the Biological Resources section of this document will reduce the proposed project's incremental contribution to cumulative light and glare impacts to a less than significant level.

#### 4.6.6 MITIGATION MEASURES

- 4.6-1** Interim vegetative cover shall be established as land filling proceeds to help offset visual impacts prior to application of final cover and vegetation at landfill closure. This interim measure provides that the outer southerly facing slopes shall receive cover material consistent with native species of the surrounding terrain as the phased development continues with application at appropriate intervals but at a minimum of every two to four year. Interim vegetation plant densities/seed mix shall be completed consistent with the baseline study to be conducted prior to the beginning of land filling operations in the expansion area.
- 4.6-2** Final design of the access roadway shall comply with Policy ER 3.1.2, to the extent feasible, to reduce the visual impact to the existing ridgeline as viewed from Tierra Subida and Rayburn Road.
- 4.6-3** During conditions of severe wind, operating hours shall be limited, size of the working face shall be reduced, and completed cells shall be promptly covered.
- 4.6-4** During landfill operations and after construction activities, personnel ~~members~~ shall conduct periodic litter cleanup along, 1) the access roadway (R-5 access) and adjacent land from the scales to Tierra Subida and 2) ~~adjacent properties~~ adjacent to the landfill. The goal is to ensure that stray litter (including litter that is illegally dumped along the landfill access road) is immediately removed when strong winds occur.

#### 4.6.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the implementation of the above **Mitigation Measures 4.6-1** through **4.6-4**, project-specific impacts related to aesthetics and litter, are reduced to less than significant levels. However, on a cumulative basis, the effect of the proposed 11-acre wedge expansion and height increase combined with the existing Landfill I, permitted Landfill II, and the new access roadway upon the existing visual character and the views south of the landfill will be significant and unavoidable. On a cumulative level, the project in conjunction with the existing and permitted landfills contributes significantly to a change in the visual character of the area, which cannot be mitigated. Therefore, the City of Palmdale Planning Commission must adopt a statement of overriding consideration for project's contribution to the cumulative aesthetic impacts. With the implementation of **Mitigation Measure 4.4-5** within the Biological Resources section of this EIR, project specific and cumulative light and glare impacts will be reduced to less than significant levels.





CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II



CONDITION 3 - PROPOSED PROJECT

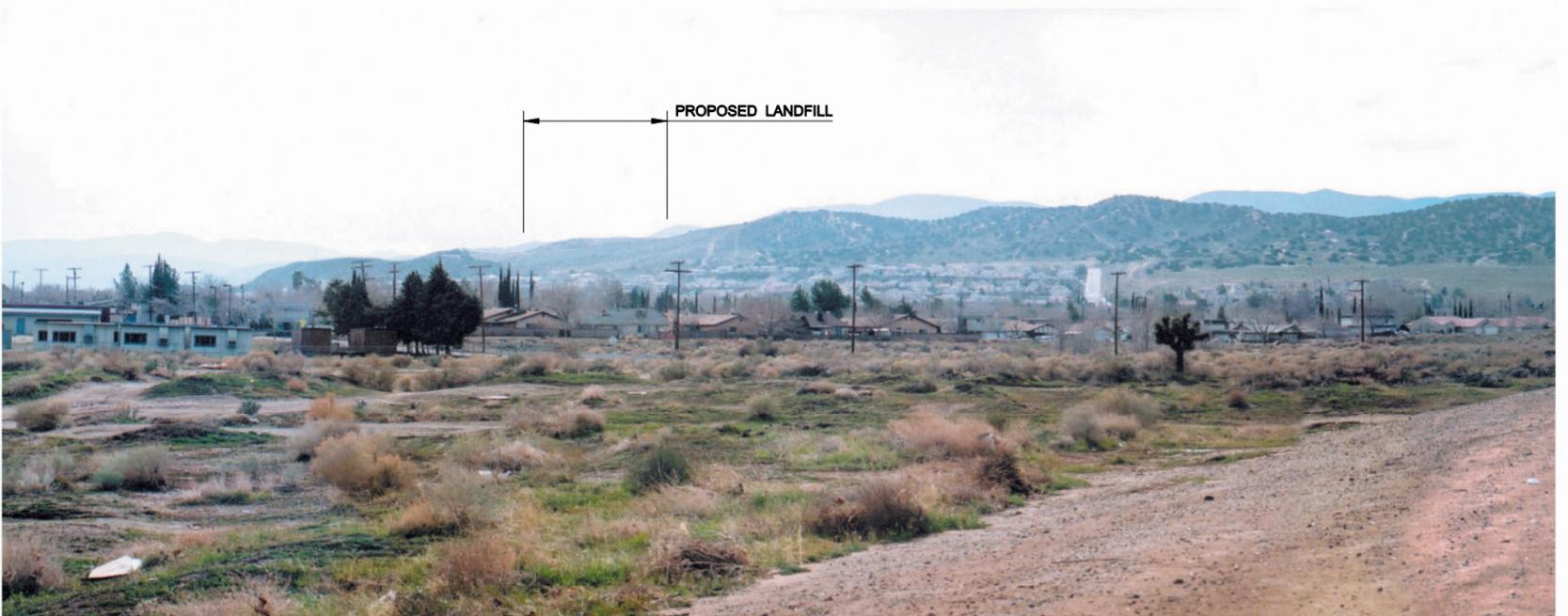
NORTHWEST CORNER OF AVENUE O AND 10TH STREET WEST  
LOOKING SOUTH TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II



CONDITION 3 - PROPOSED PROJECT

APPROXIMATELY 350' EAST OF THE END OF SUMMERLAND DRIVE  
NEAR AMARGOSA CREEK LOOKING SOUTH TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II



CONDITION 3 - PROPOSED PROJECT

WEST SIDE OF THE ANTELOPE VALLEY FREEWAY AT THE TOP OF THE RANCHO VISTA ON-RAMP  
LOOKING SOUTH WEST TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II

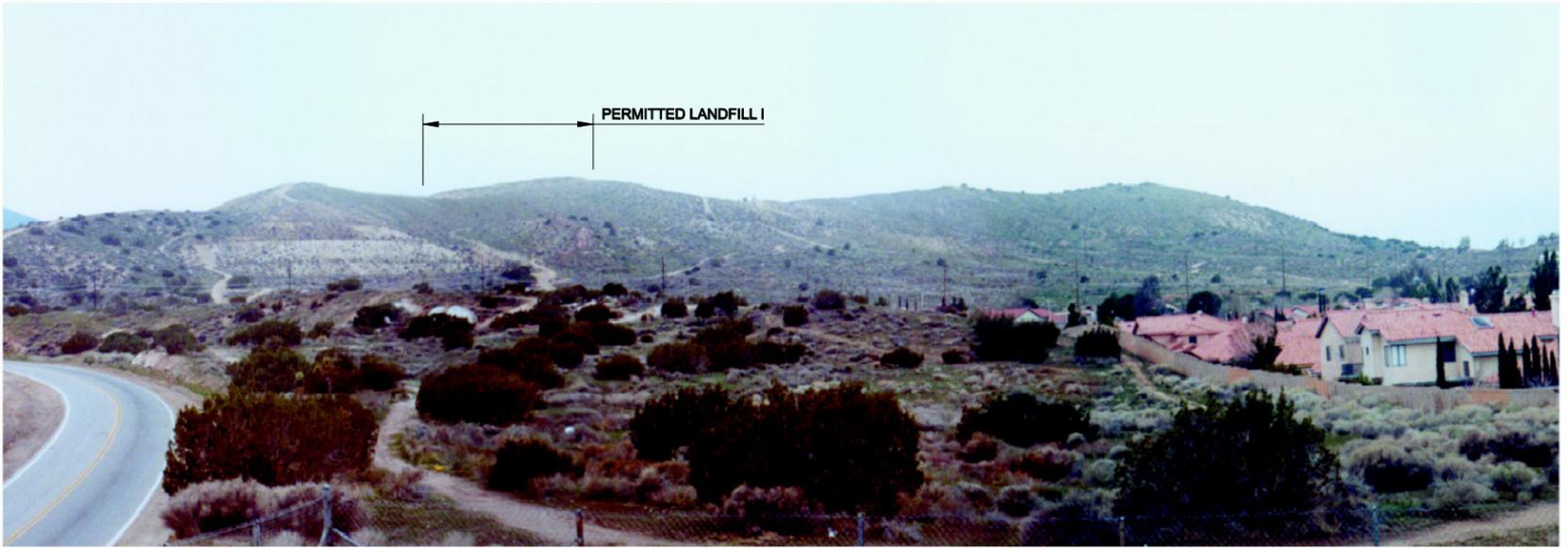


CONDITION 3 - PROPOSED PROJECT

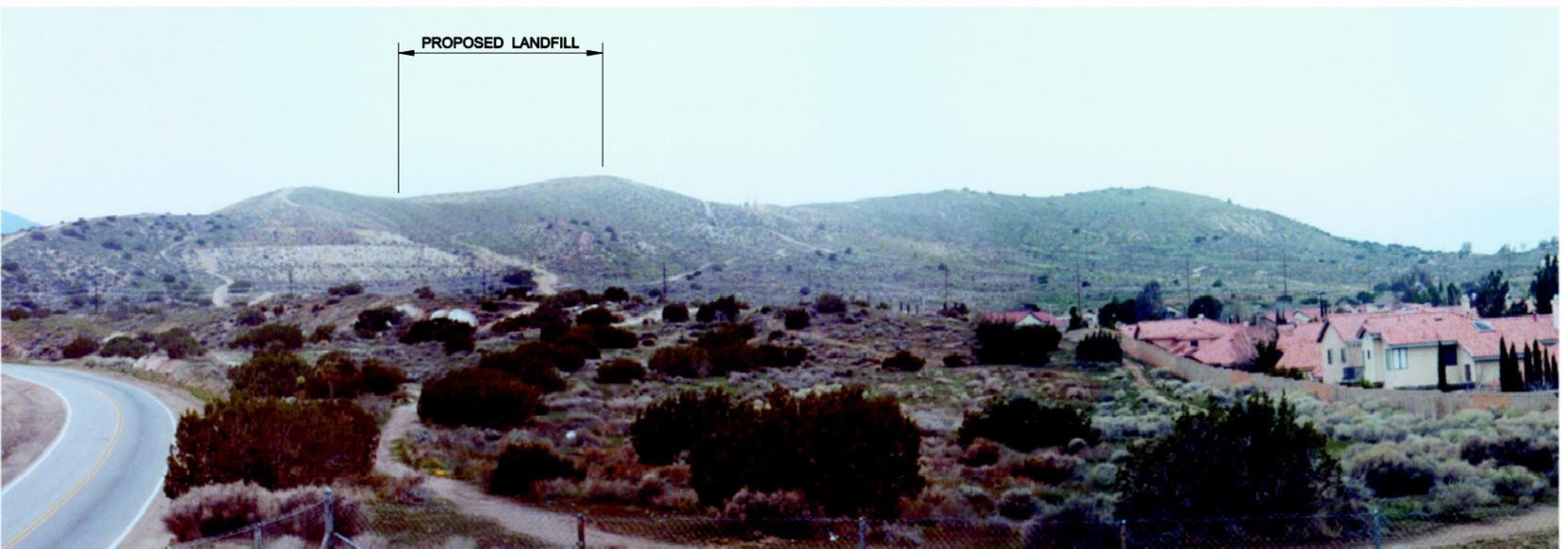
SOUTHWEST CORNER OF CARRIAGE WAY AND AUTO CENTER DRIVE  
LOOKING SOUTH WEST TOWARDS THE LANDFILL



CONDITION 1 - EXISTING VIEW

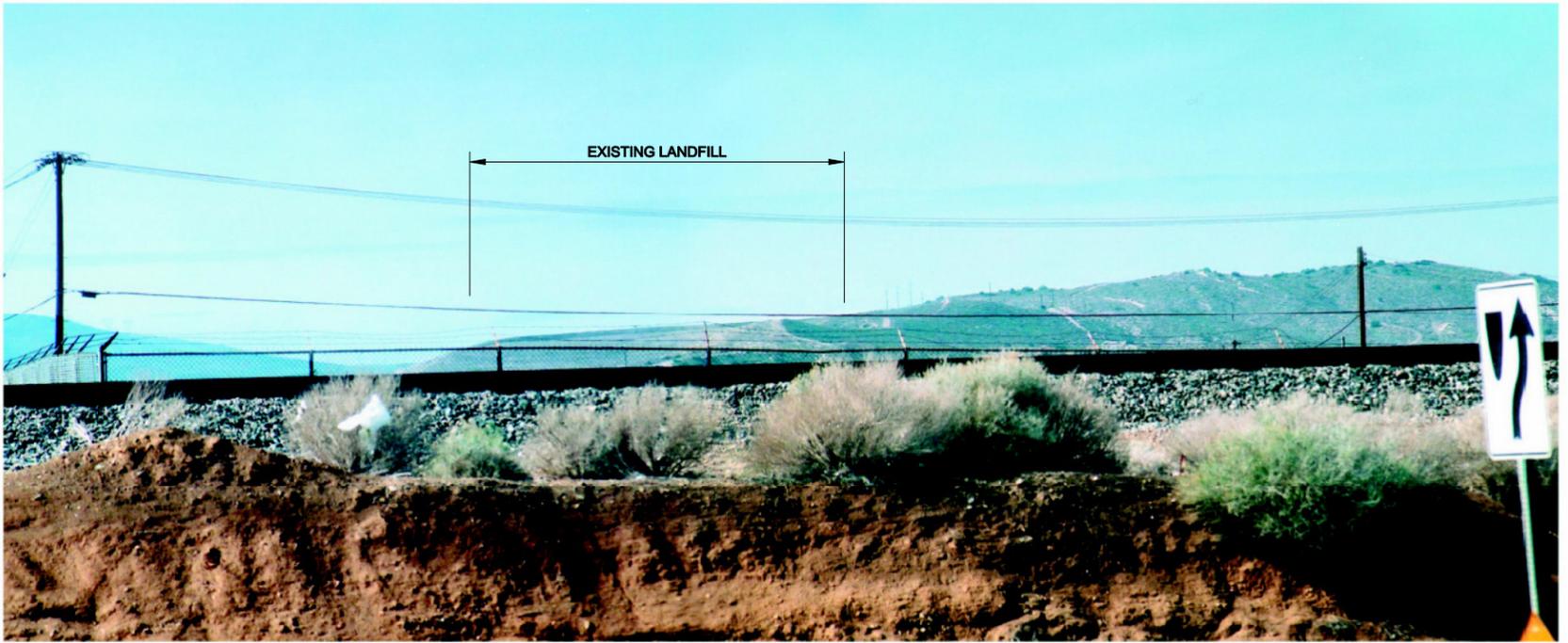


CONDITION 2 - PERMITTED LANDFILL I & II

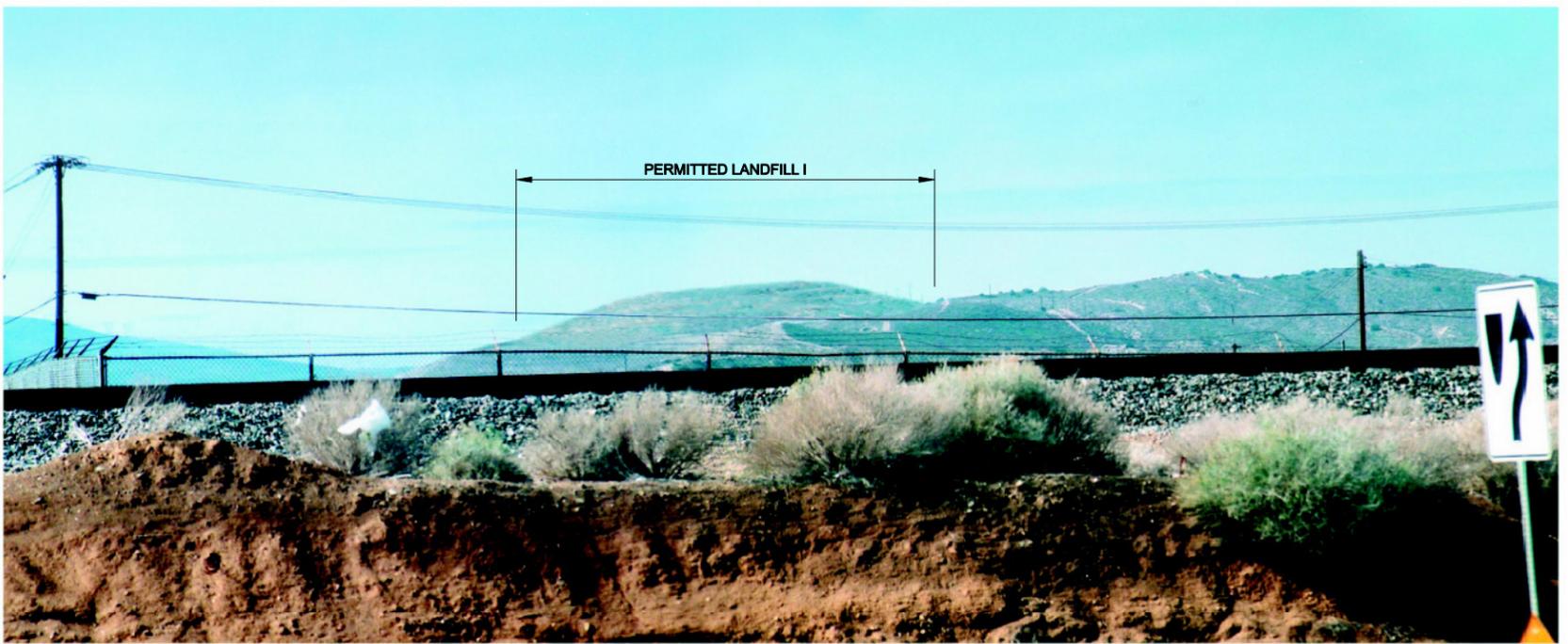


CONDITION 3 - PROPOSED PROJECT

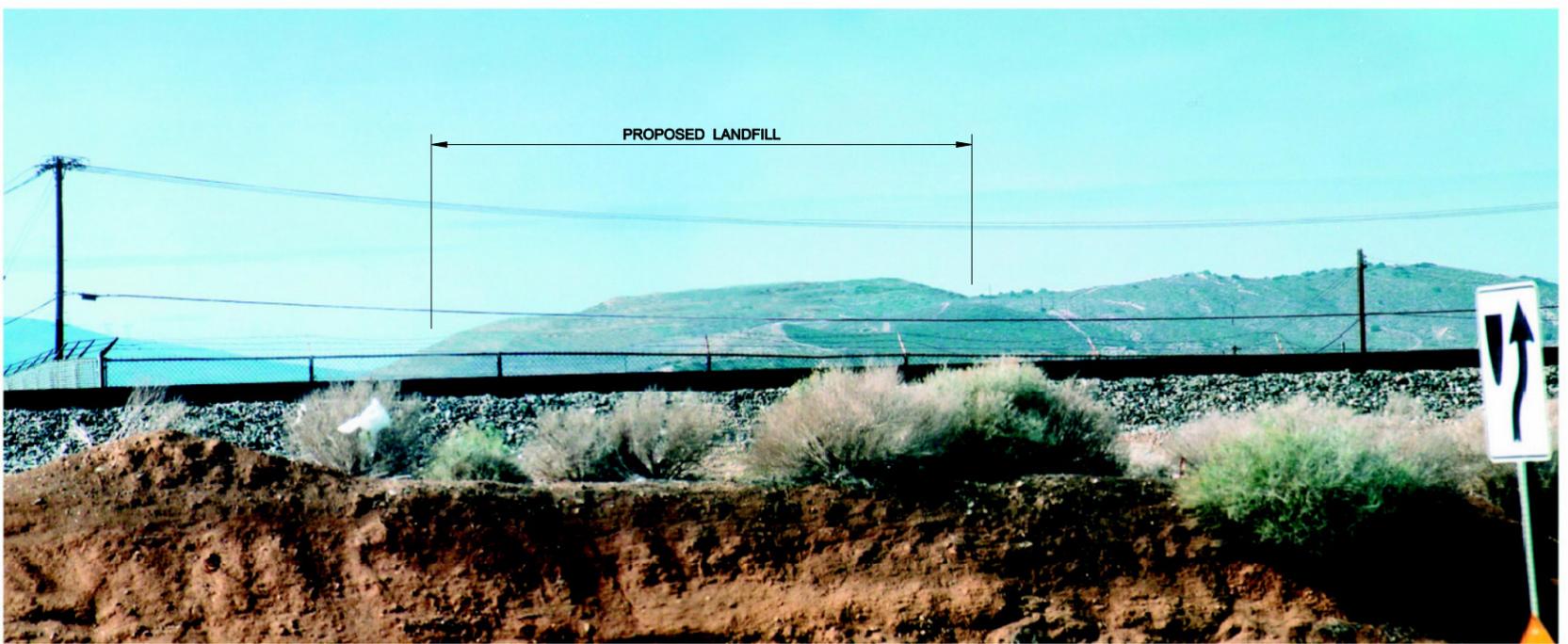
NORTH SIDE OF RAYBURN ROAD AT THE ANTA LOPE VALLEY FREEWAY  
LOOKING WEST TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II



CONDITION 3 - PROPOSED PROJECT

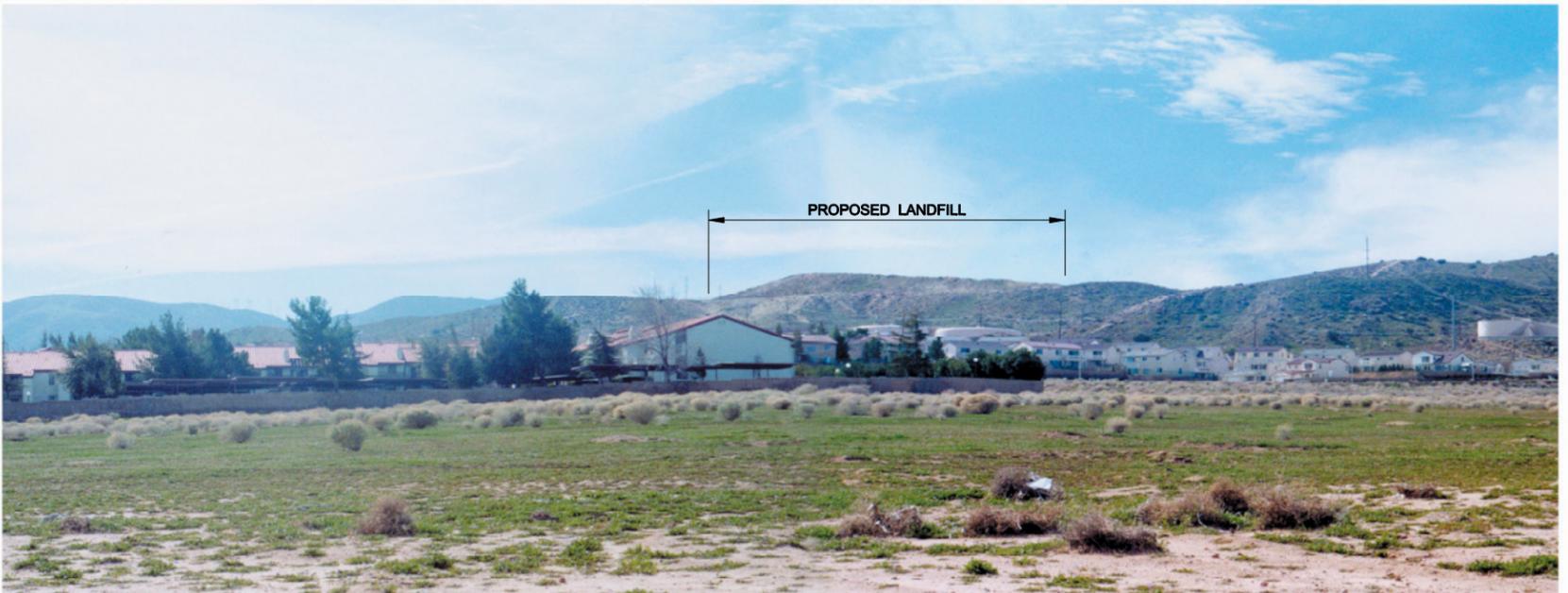
SIERRA HIGHWAY NEAR AVENUE R-8 EAST OF METRO RAIL TRACKS  
LOOKING WEST TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II

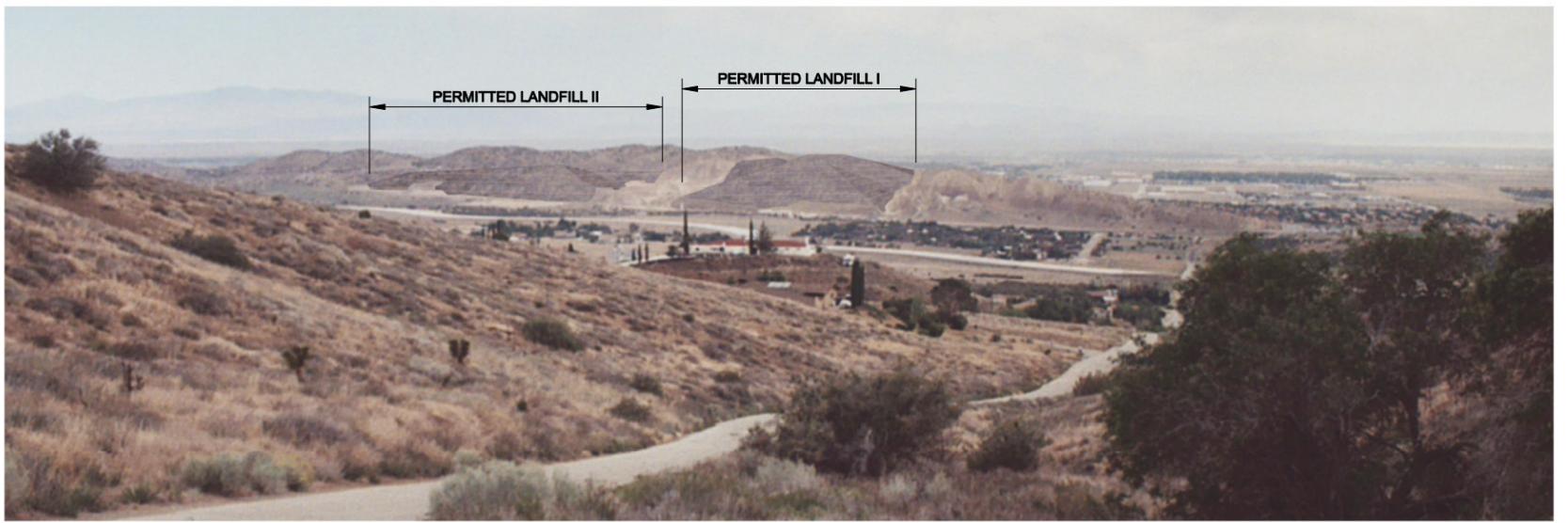


CONDITION 3 - PROPOSED PROJECT

SOUTHWEST SIDE OF PALMDALE BOULEVARD MIDWAY BETWEEN TRADE CENTER DRIVE AND THE ANTELOPE VALLEY FREEWAY LOOKING SOUTHWEST TOWARDS THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II

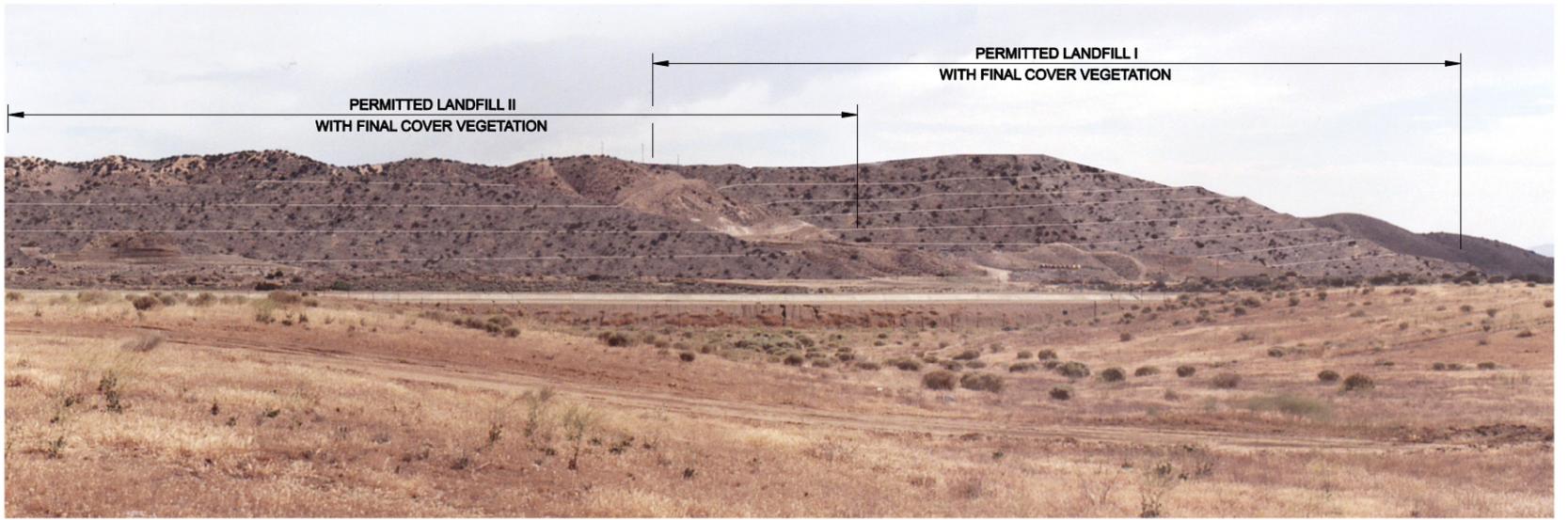


CONDITION 3 - PROPOSED PROJECT

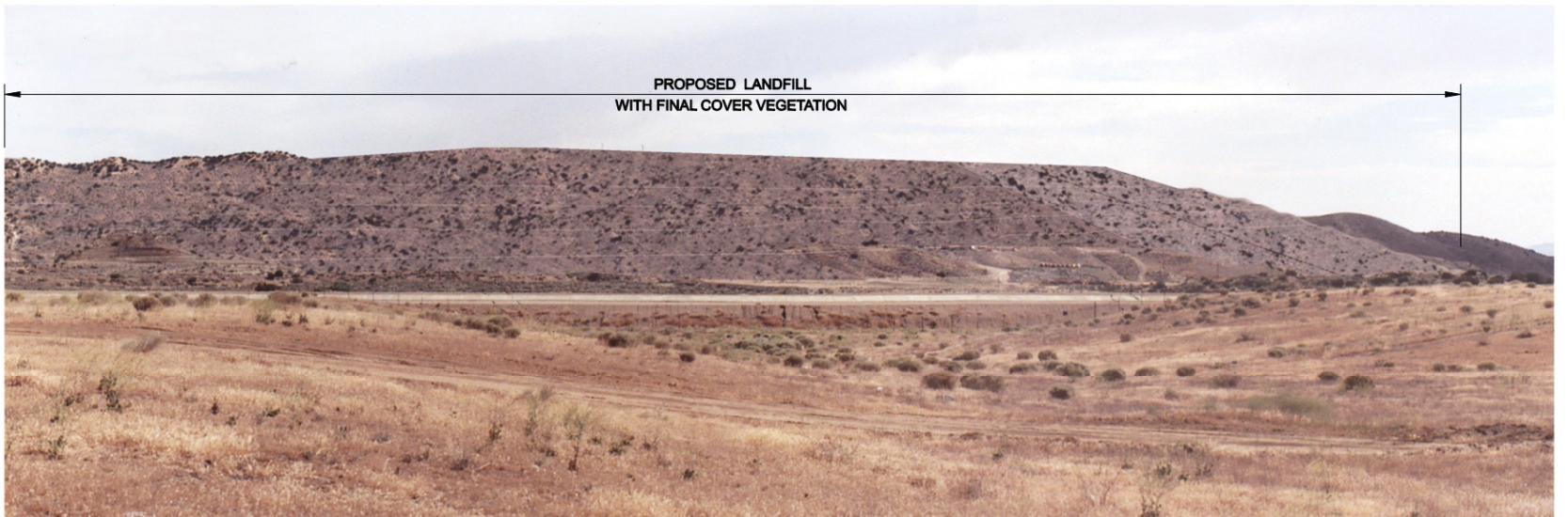
NEAR INTERSECTION OF TIERRA SUBIDA AVENUE AND LAKEVIEW DRIVE  
LOOKING NORTH/NORTHWEST TOWARD THE LANDFILL



CONDITION 1 - EXISTING VIEW



CONDITION 2 - PERMITTED LANDFILL I & II

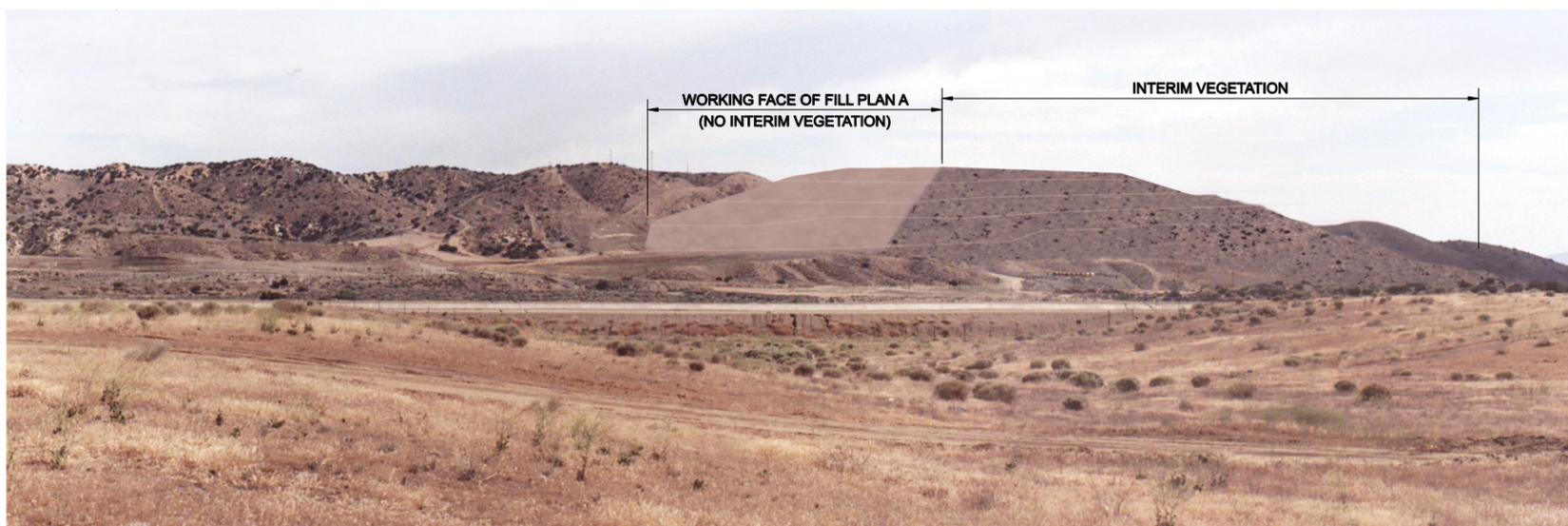


CONDITION 3 - PROPOSED PROJECT

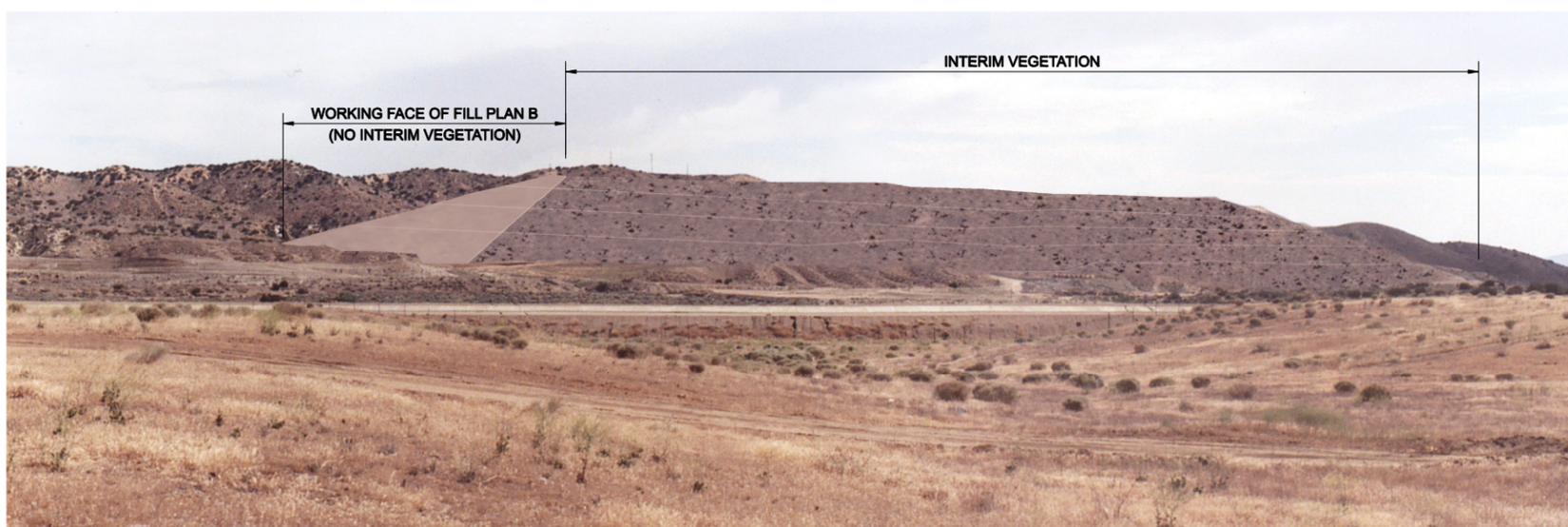
SOUTHWEST OF LANDFILL IN ANAVERDE HOUSING DEVELOPMENT  
(UNDER CONSTRUCTION) LOOKING NORTH EAST TOWARD THE LANDFILL



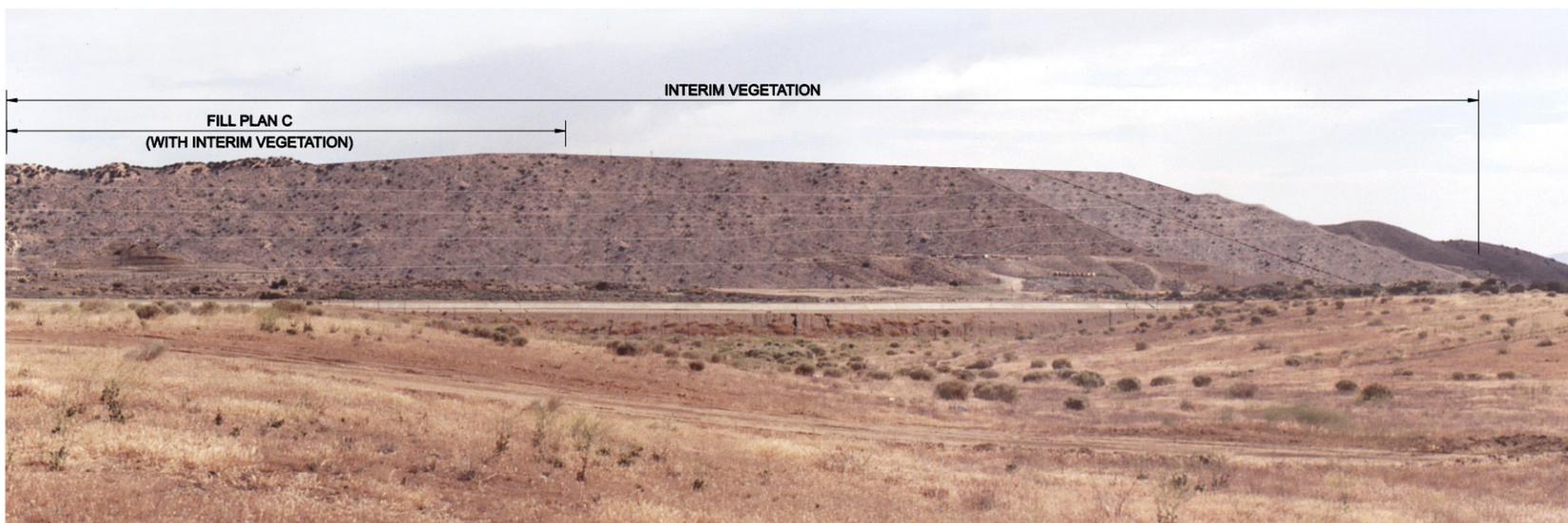
EXISTING VIEW



UPON COMPLETION OF PROPOSED FILL PLAN A



UPON COMPLETION OF PROPOSED FILL PLAN B



UPON COMPLETION OF PROPOSED FILL PLAN C

TYPICAL VIEWS OF INTERIM VEGETATIVE COVER UPON COMPLETION OF PHASE DEVELOPMENT. INTERIM VEGETATION TO BE ESTABLISHED WITH IN 2 - 4 YEARS AFTER REACHING DESIGN GRADES (OUTER SLOPES).

## 4.7 TRAFFIC AND CIRCULATION

### 4.7.1 INTRODUCTION AND SUMMARY

Although the applicant is requesting an increase in the permitted daily tonnage to be disposed of in the landfill (i.e., 3,600 tpd), the traffic analysis must consider maximum tonnage figure which includes refuse to be disposed of as well as recyclables and/or materials for alternative daily cover or beneficial use. The discussion below summarizes the various revisions to traffic studies which concluded with the September 2005 study.

Concurrent with the 1998 City CUP modification application, a traffic study was prepared that updated truck tonnage capacity figures and background projections from the April 1993 study and September 1993 supplemental data prepared by Kunzman Associates for the County approved CUP and MND. The April 1993 study and September 1993 supplemental data analyzed a “peak maximum” intake of 3,564 tpd which includes landfilled refuse and recyclables. The 1998 updated analysis assumed that the landfill operation would increase to 3,600 tpd of total waste including recyclables.

Additionally, the 1998 study was further updated to incorporate current traffic counts as part of this proposed CUP and EIR process. The updated traffic study (August 2003) included updated truck tonnage capacity figures and background projections from the April 1993 study. The updated analysis (August 2003) assumed that the existing landfill operation would increase to 3,613 tpd of total materials. The August 2003 study was further revised in September 2004 in response to NOP comments and to allow for an average total daily limit of 3,613 tpd and a maximum peak of 5,548 tpd, when large quantities of concrete for recycling and/or materials for alternative daily cover or beneficial use are received at the landfill. The revised study also addresses the modified receipt of refuse hours as part of the proposed CUP (refer to **Table 3-2**, in Section 3.0 of this EIR).

Several studies were completed by Kunzman Associates in 2002 and 2003 to analyze different landfill access alternatives for reaching Tierra Subida Road. The final May 2004 access alternative study concludes that rerouting a portion of R-5 to coincide with Rayburn Road is the preferred ultimate access route into the facility and therefore this alignment has been incorporated as a component of the proposed project. However, subsequent to the preparation of this Draft EIR in December of 2005, the City of Palmdale has proposed to widen Tierra Subida Avenue between City Ranch Road and Cactus Drive (City Project Number 482). Since the City Project Number 482 would affect the proposed project site's existing access at the intersection of City Ranch Road and Tierra Subida Avenue, a sight distances evaluation was conducted (JT Engineering, 2010) (see **Appendix G-1**). Based on the sight distance evaluation, the project engineer recommended to close off City Ranch Road at Tierra Subida and to construct a new frontage road as the future access to the project site. This new frontage road would connect with City Ranch Road and intersect Tierra Subida at Rayburn Road, creating a 4-way signalized intersection.

The findings of the September 2005 report are summarized in **Table 4.7-1A**, below and in this section. The report in its entirety is contained in **Appendix G** of this EIR.

**TABLE 4.7-1A  
EXISTING / PROJECT DAILY TRAFFIC GENERATION SUMMARY**

<b>Descriptor</b>	<b>Tons Per Truck</b>	<b>Truck Loads In</b>	<b>Cars In</b>	<b>Trucks and Cars In</b>	<b>Total Trips (In + Out)</b>
Average Existing Conditions (1,372 T/D)	6.596	208	105	313	626
Proposed Average Condition (3,613 T/D)	8.363	432	230	662	1,324
<b>Traffic Increase</b>		<b>224</b>	<b>125</b>	<b>349</b>	<b>698</b>
Average Existing Conditions (1,372 T/D)	6.596	208	105	313	626
Proposed Peak Condition (5,548 T/D)	9.785	567	230	797	1,594
<b>Traffic Increase</b>		<b>359</b>	<b>125</b>	<b>484</b>	<b>968</b>
<i>Traffic Local in Palmdale (approx. 85%)</i>		288	125	413	826
<i>Traffic From Outside of Palmdale (approx. 15%)</i>		71	0	71	142
Peak Permitted Condition (3,564 T/D)	6.480	550	180	730	1,460
Proposed Peak Condition (5,548 T/D)	9.785	567	230	797	1,594
<b>Traffic Increase</b>		<b>17</b>	<b>50</b>	<b>67</b>	<b>134</b>

Notes:

1. Details concerning the types of material hauled and the types of truck are contained in **Table 4.7-4**.
2. Details concerning the time of day the traffic occurs, including peak hours, are contained in **Table 4.7-5**.
3. A trip occurs when something is taken from point A to point B. When a vehicle enters the facility, deposits material, and leaves, that results in a "trip in" and a "trip out" (totaling 2 trips).
4. Per **Figure 4.7-5**, Landfill Trip Distribution, 15 percent of the project traffic is assumed to come to Palmdale via the State Route 14 Freeway.
5. The anticipated number of transfer trucks coming to the facility from State Route 14 Freeway is 71 loads per day. Per **Table 4.7-4**, this is an increase over the existing average of 16 loads per day for both the average and peak conditions. The 71 loads is 142 in plus out trips (i.e., total trips). The 142 trips is approximately 15 percent of the peak total traffic.

Source: Kunzman Associates

**4.7.2 EXISTING CONDITIONS**

**SURROUNDING STREET SYSTEM**

The traffic conditions as they exist today are discussed below.

Roadways that will be utilized by the project expansion/reconfiguration include Palmdale Boulevard, Rayburn Road, City Ranch Road, Avenue S, Tierra Subida Avenue, and 5<sup>th</sup> Street West. The following conditions exist in the vicinity of the project site:

**Palmdale Boulevard.** This east-west four lane divided to six lane divided roadway is classified as a Regional Arterial (six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 12,400 to 19,900 vehicles per day in the study area.

**Rayburn Road.** This east-west two lane undivided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 5,100 vehicles per day in the study area.

**City Ranch Road.** This east-west two lane undivided roadway is classified as a Secondary Arterial (84 foot right-of-way; four lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 700 vehicles per day in the study area.

**Avenue S.** This east-west two lane undivided to four lane divided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) on the City of Palmdale General Plan Circulation Element. It currently carries approximately 1,100 to 24,000 vehicles per day in the study area.

**Tierra Subida Avenue.** This north-south two lane undivided to six lane divided roadway is classified as a Regional Arterial north of Palmdale Boulevard, Major Arterial (114 foot right-of-way; six lane divided) between Palmdale Boulevard and Avenue S, and a Secondary Arterial (84 foot right-of-way; four lane divided) south of Avenue S on the City of Palmdale General Plan Circulation Element. It currently carries approximately 1,700 to 14,100 vehicles per day in the study area.

**5<sup>th</sup> Street West.** This north-south four lane divided roadway is classified as a Major Arterial (114 foot right-of-way; six lane divided) north of Palmdale Boulevard and as a Secondary Arterial (84 foot right-of-way; four lane divided) south of Palmdale Boulevard on the City of Palmdale General Plan Circulation Element. It currently carries approximately 2,900 to 4,100 vehicles per day in the study area.

#### **EXISTING TRAVEL LANES AND INTERSECTION CONTROLS**

**Figure 4.7-1**, Existing Through Travel Lanes and Intersection Controls shows the existing roadway conditions for arterials near the site. The number of through lanes for existing roadways and the existing intersection controls are also identified on this figure.

#### **EXISTING AVERAGE DAILY TRAFFIC (ADT) VOLUMES**

Traffic volumes were obtained from the 2001 Traffic Volumes on California State Highways by Caltrans and factored from peak hour intersection turning movement counts obtained by Kunzman Associates (see Appendix B of the Traffic Study contained in **Appendix G** of the EIR). **Figure 4.7-2**, Existing Average Daily Traffic (ADT) Volumes depicts the existing ADT volumes.

#### **EXISTING VOLUME TO CAPACITY RATIOS FOR ROADWAYS**

Roadway capacity is generally defined as the number of vehicles that can be reasonably expected to pass over a given section of road in a given time period. Congestion, high accident rates, the quality of traffic flow (Level of Service), and environmental acceptability all come into play in defining a particular roadway's effective capacity. It is possible to identify maximum desirable volumes for typical roadway types based on the number of roadway travel lanes. These daily volumes reflect estimates of the amount

of daily traffic that will result in peak hour traffic volumes equal to the maximum desirable capacity of each roadway type.

**Table 4.7.1** contains City of Palmdale daily capacities by roadway type. By dividing existing ADT volumes by the daily roadway capacities listed in **Table 4.7-1**, existing daily volume to capacity ratios have been calculated and are shown in **Figure 4.7-3**, Existing Volume to Capacity Ratios. The roadway links in the vicinity of the site currently operate within acceptable Level of Service (LOS).

**TABLE 4.7-1  
DAILY ROADWAY CAPACITIES**

Facility Type	Design Capacity
Two lane undivided	12,000 vehicles per day
Four lane divided	36,000 vehicles per day
Six lane divided	54,000 vehicles per day

*Source: Kunzman Associates*

**EXISTING INTERSECTION CAPACITY UTILIZATION (ICU)**

The technique used to assess the operation of an intersection is known as Intersection Capacity Utilization (ICU). To calculate an ICU value the volume of traffic using the intersection is compared with the capacity of the intersection. An ICU value is usually expressed as a percent. The percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The ICU's for the existing traffic conditions have been calculated and are shown in **Table 4.7-2**. Existing ICU values are based upon manual morning and evening peak hour turning movement counts obtained by Kunzman Associates in November 2002 (**Appendix G**). The intersections in the vicinity of the site currently operate at LOS B or better during the peak hours (**Table 4.7-2**).

Comparison of daily volume to capacity ratios and corresponding Level of Service, and peak hour Intersection Capacity Utilization and corresponding Level of Service reveals significant differences. The differences between daily link volume to capacity ratios and peak hour ICU values are particularly pronounced when cross traffic is light. Daily volume to capacity ratios assume that all cross streets require 50 percent of the time to satisfy their demand, and assume that the subject street has 50 percent of the time available to it. The daily link volume to capacity ratios are a generalized indicator while peak hour ICU actually represents what can be expected in the peak hour at intersections. Of the two indicators, the peak hour ICU value and corresponding LOS is by far the best measure of roadway performance.

**TABLE 4.7-2  
EXISTING INTERSECTION CAPACITY UTILIZATION (ICU) AND  
LEVEL OF SERVICE (LOS)**

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lanes <sup>1</sup>												Peak Hour ICU-LOS <sup>2</sup>	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Tierra Subida Ave. (NS) at:															
Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	52.0-A	66.9-B
5 <sup>th</sup> Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	39.9-A	48.9-A
Rayburn Rd. (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	51.3-A	63.4-B
City Ranch Rd. (EW)	CSS	1	1	0	1	1	1	0	1	1	0	1	1	27.1-A	42.7-A
Avenue S (EW)	AWS	0	1	0	0	1	0	0	1	0	0	1	0	40.5-A	55.9-A
5 <sup>th</sup> Street West (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	30.0-A	51.7-A
SR-14 Freeway SB Ramps (NS) at: Palmdale Blvd. (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	36.6-A	67.3-B
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	46.1-A	48.9-A
SR-14 Freeway NB Ramps (NS) at: Palmdale Blvd. (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	26.9-A	44.0-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	30.0-A	41.4-A

Source: Kunzman Associates

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn

<sup>2</sup> ICU-LOS = Intersection Capacity Utilization – Level of Service

<sup>3</sup> TS = Traffic Signal

CSS = Cross Street Stop

AWS = All Way Stop

**EXISTING CITY OF PALMDALE GENERAL PLAN CIRCULATION ELEMENT**

**Figure 4.7-4**, City of Palmdale General Plan Circulation Element shows the City of Palmdale General Plan Circulation Element. Both existing and future roadways are included in the Circulation Element of the General Plan. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the City’s General Plan.

**EXISTING TRAFFIC SIGNAL WARRANTS**

Based upon the analysis conducted by Kunzman Associates (see Appendix D contained in **Appendix G** of the EIR), traffic signals appear to currently be warranted at the following study area intersections:

- Tierra Subida Avenue (NS) at:
  - 5<sup>th</sup> Street West (EW)
  - Rayburn Road (EW)

Avenue S (EW) (installation will be in 2005)

**EXISTING LANDFILL TRAFFIC**

The current operations at Landfill I is permitted to receive up to a peak of 434 truckloads that correspond to roughly 1,400 tpd of refuse for disposal. However, it is estimated that on average approximately 1,372 tpd of refuse and recyclable material are currently received that corresponds to 208 truckloads or 416 truck trips. The existing landfill accepts concrete for recycling and/or materials used for daily cover or beneficial use, and when a major inflow of these materials occurs, then the daily peak tonnage today increases to as much as 3,800 tpd. This peak inflow of concrete or daily cover material is sporadic and lasts for a few days.

**Table 4.7-3** shows actual existing count data on tons per loads and tons per day as well as truck loads in and total trips. **Appendix G** contains count data for total tonnage and truckloads collected on an hourly basis as well as peak hour and daily in and out volumes.

Today, there are an average 208 loads per day and 1,372 tpd of deposited material. These 208 loads consist of 142 municipal solid waste loads, pick ups, roll ups, packers, 16 transfer trailer loads, 17 petroleum contaminated soil loads, 23 greenwaste loads, and 10 beneficial use loads. WMI trucks currently average 4.05 tons each for municipal solid waste, 21 tons each for transfer trailers, 25 tons each for petroleum contaminated soil, 0.7 tons each for greenwaste, and average of 8 tons each for others.

**TABLE 4.7-3  
EXISTING TRUCK TRAFFIC**

Type	Tons/Load	Tons/Day	Truck Loads In	Total Trips In & Out
Municipal Solid Waste (Com., Res., Ind.)	4	574	142	284
Transfer Trailers	21	328	16	32
Recycle (Com., Res., Ind.)	4	0	0	0
Recycle – Concrete	4.5	23	5	10
Cover Soil	26	8	1	2
Petroleum Contaminated Soil	25	420	17	34
Greenwaste	0.7 <sup>1</sup>	16	23	46
Other Recycling	0.5	2	4	8
<b>Total</b>		<b>1,372</b>	<b>208</b>	<b>416</b>

Source: Kunzman Associates

<sup>1</sup> The “existing” tons/load figure is less than the “proposed” tons/load figure shown in **Table 4.7-4**.

As shown in **Tables 4.7-1A** and **4.7-3** above and in **Table 4.7-5** in the following section, the existing landfill is currently generating an average of 416 truck trips per day, 39 and 24 of which occur during the morning and evening peak hours, respectively. Additionally, the site is currently generating 210 car trips per day, of which 14 and 36 occur during the morning and evening peak hours, respectively.

### EXISTING LANDFILL TRAFFIC DISTRIBUTION

Traffic distribution is the determination of the directional orientation of traffic. It is based on the geographical location of employment centers, commercial centers, recreational areas, or residential area concentrations.

Traffic assignment is the determination of which specific route development traffic will use, once the generalized traffic distribution is determined. The basic factors affecting route selection are minimum time path and minimum distance path.

**Figure 4.7-5**, Existing Landfill Trip Distribution contains an estimate of the directional distribution and assignment of the existing traffic from the landfill. This estimate is based on information in the previous traffic studies for the landfill and field observations. Per **Figure 4.7-5**, Landfill Trip Distribution, 15 percent of the project traffic is assumed to come to Palmdale via the State Route 14 Freeway and 85 percent of the traffic is assumed utilize local roadways within the City of Palmdale. Traffic from the landfill expansion is expected to have a distribution that is similar to the exiting landfill traffic.

#### 4.7.3 THRESHOLD OF SIGNIFICANCE

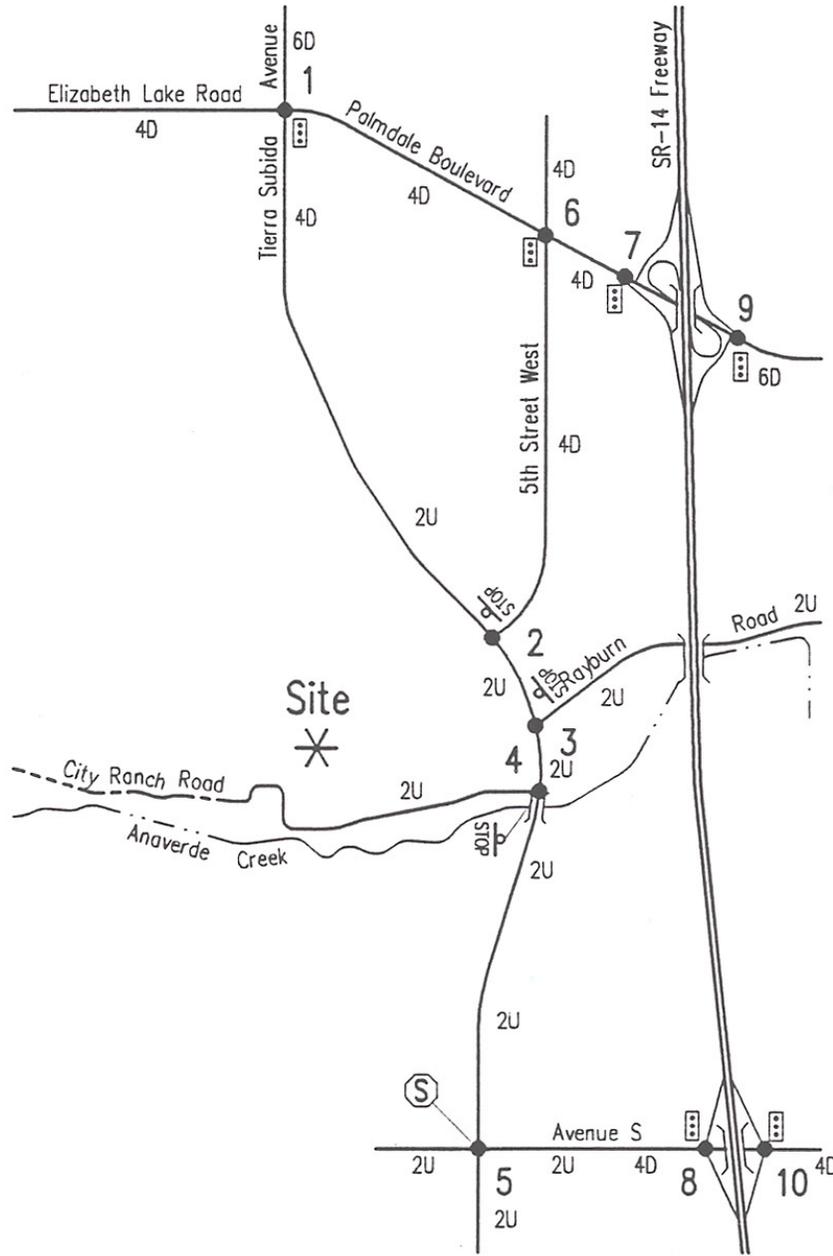
Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a preliminary analysis of a proposed project to assess whether a Negative Declaration or an Environmental Impact Report should be prepared. The Environmental Checklist is used to determine if the proposed project would result in potentially significant adverse impacts. According to the Environmental Checklist, a project may be deemed to have a significant transportation/circulation effect if it will:

- a. Cause 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 intersection).
- b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highway.
- c. Result in inadequate emergency access.
- d. Result in inadequate parking capacity.

Additionally, based on the County of Los Angeles Congestion Management Program criteria, a project has a significant traffic impact if any of the following occurs:

- Project increases ICU by more than 1.0 percent and ICU is more than 90 percent after the project traffic is added.
- Project increases ICU by more than 2.0 percent and ICU is more than 80 percent after the project traffic is added.
- Project increases ICU by more than 4.0 percent and ICU is more than 70 percent after the project traffic is added.

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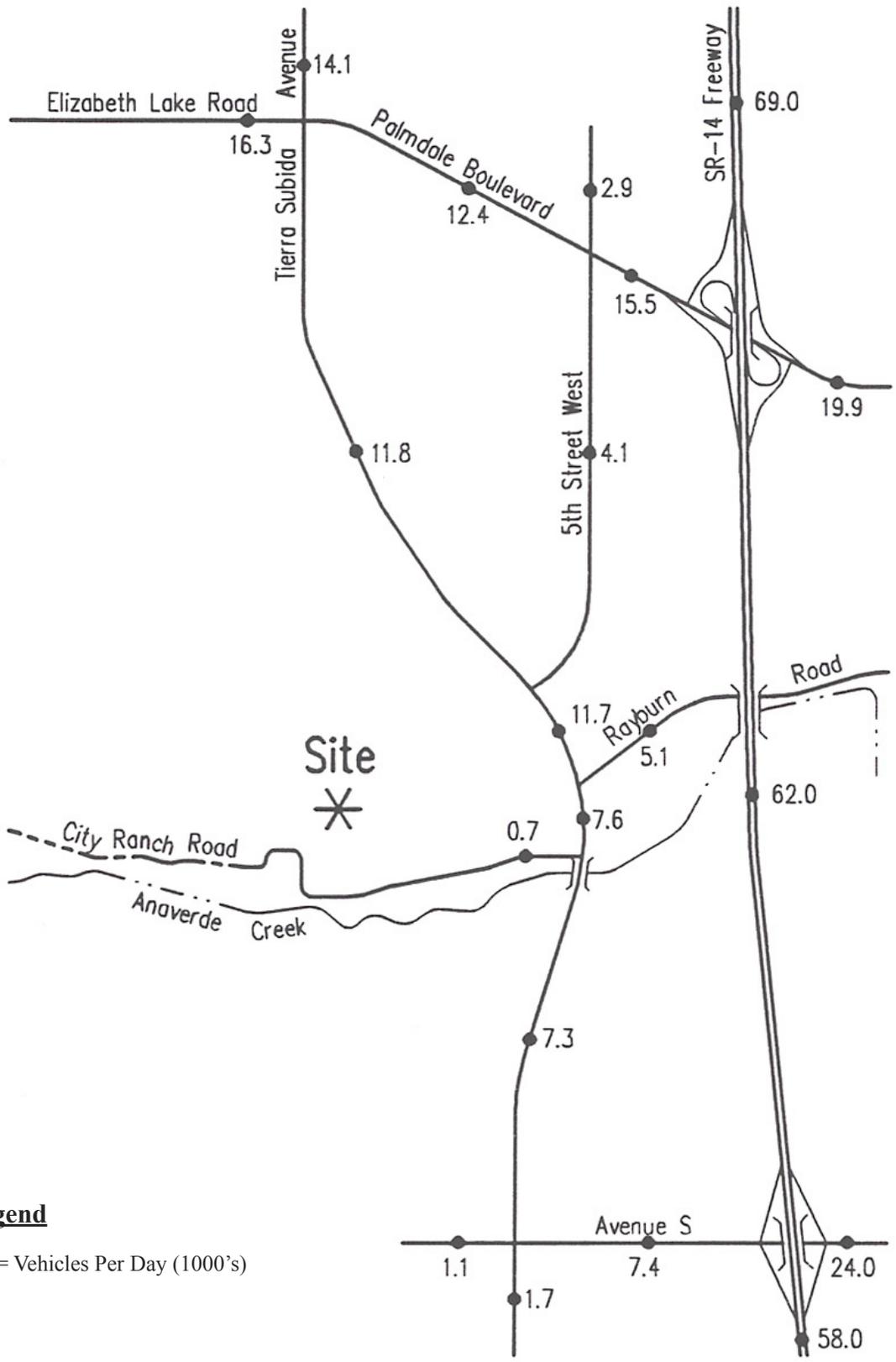
**Legend**

- = Traffic Signal
- = All Way Stop
- = Stop Sign
- 4 = Through Travel Lanes
- D = Divided
- U = Undivided
- >> = Free Right Turn

Note: Intersection reference numbers are in upper left corner of turning movement boxes.

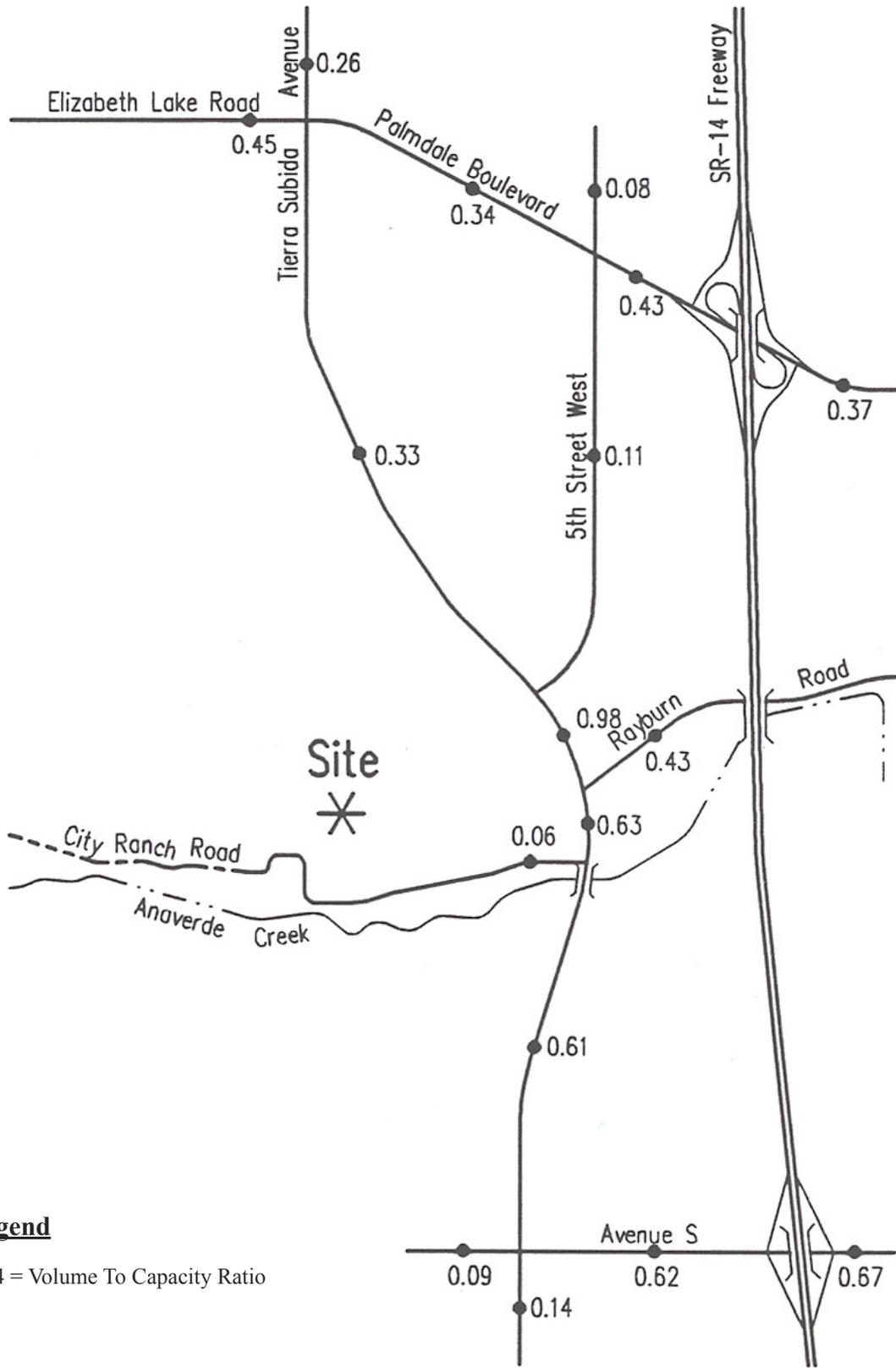
**Figure 4.7-1**

**Existing Through Travel Lanes and Intersection Controls**



**Legend**

1.5 = Vehicles Per Day (1000's)



**Legend**

0.14 = Volume To Capacity Ratio

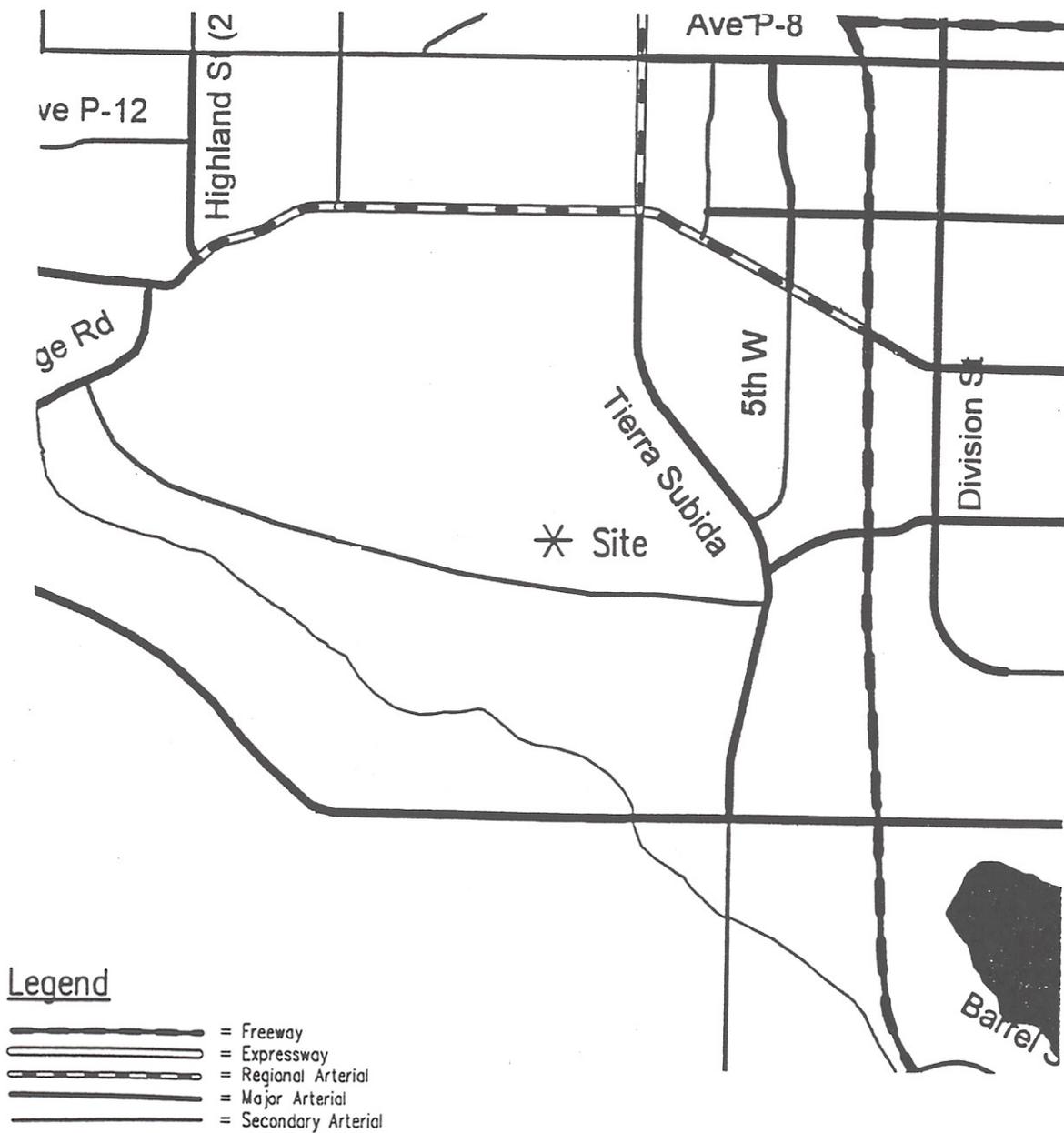
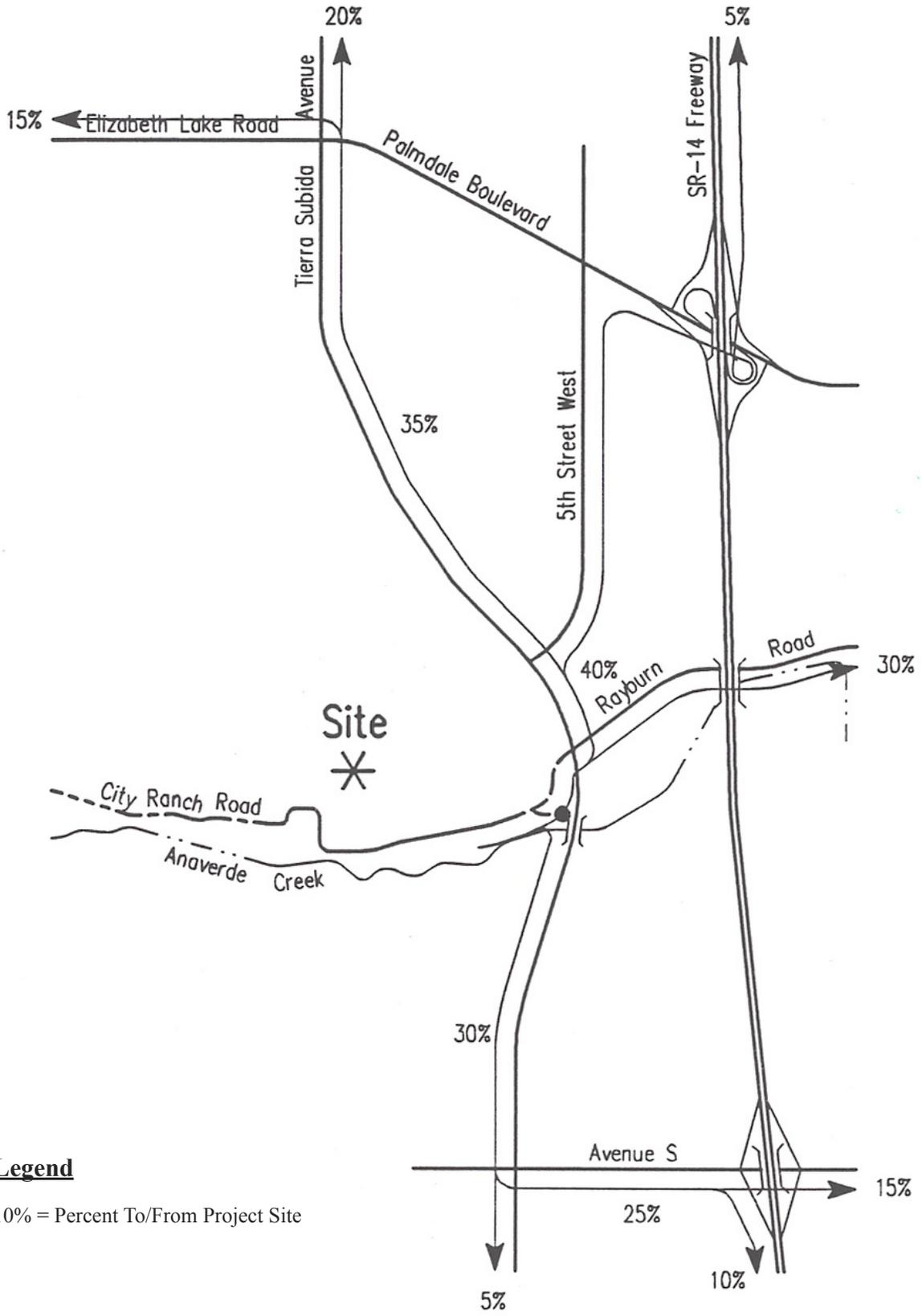


Figure 4.7-4  
 City of Palmdale General Plan  
 Circulation Element  
 December 2005



**Legend**

10% = Percent To/From Project Site

#### 4.7.4 PROJECT IMPACTS

The existing landfill is currently accepting an average of 1,372 tons of refuse and other materials per day. For purposes of this analysis, it was assumed that the project site will increase operations to an average 3,613 tpd and a peak of 5,548 tpd.

#### TRAFFIC GENERATION/PROJECT-RELATED TRAFFIC

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. Proposed project trip generation is shown in **Tables 4.7-4** and **4.7-5**. **Table 4.7-4** shows actual projected data for future truck loads and tonnages as well as the expected change in the existing and future operation.

##### Transfer Trucks

It should be noted that the change or increase in transfer trucks is 71 loads per day, or 142 in plus out trips. These trucks will all use the State Route 14 Freeway. They represent approximately 15 percent of the increase in traffic by the proposed landfill expansion.

**Table 4.7-5** exhibits the traffic generation rates, project peak hour volumes, and project daily traffic volumes.

The proposed project is projected to generate in the future on “the average” a total of approximately 1,324 trips per day (662 in and 662 out), 105 and 85 of which occur during the morning and evening peak hours, respectively. A total of 864 of the 1,324 are truck trips. When compared to existing, the landfill expansion/reconfiguration is projected to generate on the average approximately “698 new” daily vehicle trips, 52 new vehicles per hour will occur during the morning peak hour, and 25 new vehicles per hour will occur during the evening peak hour (**Table 4.7-5**).

The project site is projected to generate in the future for “peak inflow” conditions a total of approximately 1,594 trips per day (797 in and 797 out), 124 and 96 of which occur during the morning and evening peak hours, respectively (**Table 4.7-6**). A total of 1,134 of the 1,594 are truck trips.

When compared to the existing average traffic, the landfill expansion/reconfiguration is projected to generate for peak inflow conditions approximately “968 new” daily vehicle trips, 71 new vehicles per hour will occur during the morning peak hour, and 25 new vehicles per hour will occur during the evening peak hour (**Table 4.7-5**).

The resulting analysis of these above “new” trip scenarios should be viewed as a “worst case” and overstatement of impacts. Because LFII is permitted by County CUP #93041 to receive a “peak” total intake of 3,564 tpd which corresponds to a total truck traffic figure of 1,100 (refer to the September 7, 1993 correspondence and supplemental traffic analysis contained in Appendix E of the traffic study which is **Appendix G** of this EIR), a “permitted peak” to “proposed peak” comparison has been provided.

When compared to the “CUP permitted peak traffic,” the landfill expansion/reconfiguration is projected to generate approximately “134 new” daily vehicle trips.

Based on the identified traffic generation and distribution, project related ADT volumes are shown on **Figure 4.7-6**, Project Average Daily Traffic (ADT) Volumes. The project related morning and evening peak hour intersection turning movement volumes are contained in **Appendix G**.

The trip lengths outlined below were developed in conjunction with the City’s traffic engineer. The project traffic is expected to have an average one-way trip length of 5.5 miles for trips originating in the City and 15 miles for trips originating outside of the City. It is approximately 15 miles to Lancaster going north on the State Route 14 Freeway, and approximately 15 miles to the Antelope Valley Air Pollution Control District boundary going south on the State Route 14 Freeway.

**TABLE 4.7-4  
PROPOSED PROJECT TRUCK TRAFFIC**

<b>Average Inflow of Material Future Truck (3,613 tpd)</b>				
<b>Type</b>	<b>Tons/Load</b>	<b>Tons/Day</b>	<b>Truck Loads In</b>	<b>Total Trips In and Out</b>
Municipal Solid Waste (Com., Res., Ind.)	4.05	1,174	290	580
Transfer Trailers	21.00	1,826	87	174
Recycle (Com., Res., Ind.)	4.20	20	5	10
Recycle – Concrete	4.48	20	5	10
Cover Soil	25.00	7	1	2
Contaminated Soil	25.00	500	20	40
Greenwaste	3.00 <sup>1</sup>	64	21	42
Other Recycling	0.53	2	4	8
<b>Total</b>		<b>3,613</b>	<b>432</b>	<b>866</b>

<sup>1</sup> This “proposed” tons/load figure for green waste is larger than what is shown for existing conditions in **Table 4.7-1**.

<b>Difference Over Existing for Truck Traffic for Average Inflow of Material</b>				
<b>Type</b>	<b>Tons/Load</b>	<b>Tons/Day</b>	<b>Truck Loads In</b>	<b>Total Trip In and Out</b>
Municipal Solid Waste (Com., Res., Ind.)	4.05	600	148	296
Transfer Trailers	21.00	1,498	71	142
Recycle (Com., Res., Ind.)	4.20	20	5	10
Recycle – Concrete	4.48	-3	0	0
Cover Soil	25.00	-1	0	0
Contaminated Soil	25.00	80	3	6
Greenwaste	3.00	48	-2	-4
Other Recycling	0.53	0	0	0
<b>Total</b>		<b>2,241</b>	<b>224</b>	<b>448</b>

**TABLE 4.7-4 (CONT'D)  
PROPOSED PROJECT TRUCK TRAFFIC**

<b>Peak Inflow of Material Future Truck Traffic (5,548 tpd)</b>				
<b>Type</b>	<b>Tons/Load</b>	<b>Tons/Day</b>	<b>Truck Loads In</b>	<b>Total Trips In and Out</b>
Municipal Solid Waste (Com., Res., Ind.)	4.05	1,174	290	580
Transfer Trailers	21.00	1,826	87	174
Recycle (Com., Res., Ind.)	4.20	20	5	10
Recycle – Concrete	4.48	337	75	150
Cover Soil	25.00	250	10	20
Contaminated Soil	25.00	1,875	75	150
Greenwaste	3.00	64	21	42
Other Recycling	0.53	2	4	8
<b>Total</b>		<b>5,548</b>	<b>567</b>	<b>1,134</b>

<b>Difference Over Existing for Peak Inflow of Material Truck Traffic</b>				
<b>Type</b>	<b>Tons/Load</b>	<b>Tons/Day</b>	<b>Truck Loads In</b>	<b>Total Trips In and Out</b>
Municipal Solid Waste (Com., Res., Ind.)	4.05	600	148	296
Transfer Trailers	21.00	1,498	71	142
Recycle (Com., Res., Ind.)	4.20	20	5	10
Recycle – Concrete	4.48	314	70	140
Cover Soil	25.00	242	9	18
Contaminated Soil	25.00	1,455	58	116
Greenwaste	3.00	48	-2	-4
Other Recycling	0.53	0	0	0
<b>Total</b>		<b>4,176</b>	<b>359</b>	<b>718</b>

Source: Kunzman Associates

**Notes:**

- Existing Measured January 1, 2003 to February 28, 2003 (51 working days).
- Future assumes additional 400 tpd Municipal Solid Waste from Lancaster.
- Future assumes 20 tpd of Greenwaste transferred from Lancaster.
- Future assumes 30 tpd from proposed Palmdale Greenwaste.
- The columns labeled “Tons” and “Loads” are for 51 working days.
- Because of rounding, some totals may differ by 1 compared to the sum of the components.

**TABLE 4.7-5  
PROJECT TRAFFIC GENERATION<sup>1</sup>**

Average Inflow of Material (3,613 tpd)							
Time Period	Existing Average Volume (1,372 tons/day)			Future Average Volume (3,613 tons/day)			New Trips
	Trucks	Cars	Total	Trucks	Cars	Total	Difference
<b>Morning Peak Hour (8:00 AM – 9:00 AM)</b>							
Inbound	18	7	25	43	7	50	25
Outbound	21	7	28	48	7	55	27
<b>Total</b>	<b>39</b>	<b>14</b>	<b>53</b>	<b>91</b>	<b>14</b>	<b>105</b>	<b>52</b>
<b>Evening Peak Hour (5:00 PM – 6:00 PM)</b>							
Inbound	21	7	28	27	4	31	3
Outbound	3	29	32	11	43	54	22
<b>Total</b>	<b>24</b>	<b>36</b>	<b>60</b>	<b>38</b>	<b>47</b>	<b>85</b>	<b>25</b>
<b>Daily</b>	<b>416</b>	<b>210</b>	<b>626</b>	<b>864</b>	<b>460</b>	<b>1,324</b>	<b>698</b>

Peak Inflow of Material (5,548 tpd)							
Time Period	Existing Average Volume (1,372 tons/day)			Future Peak Volume (5,448 tons/day)			New Trips
	Trucks	Cars	Total	Trucks	Cars	Total	Difference
<b>Morning Peak Hour (8:00 AM – 9:00 AM)</b>							
Inbound	18	7	25	53	7	60	35
Outbound	21	7	28	57	7	64	36
<b>Total</b>	<b>39</b>	<b>14</b>	<b>53</b>	<b>110</b>	<b>14</b>	<b>124</b>	<b>71</b>
<b>Evening Peak Hour (5:00 PM – 6:00 PM)</b>							
Inbound	21	7	28	33	4	37	9
Outbound	3	29	32	16	43	59	27
<b>Total</b>	<b>24</b>	<b>36</b>	<b>60</b>	<b>49</b>	<b>47</b>	<b>96</b>	<b>36</b>
<b>Daily</b>	<b>416</b>	<b>210</b>	<b>626</b>	<b>1,134</b>	<b>460</b>	<b>1,594</b>	<b>968</b>

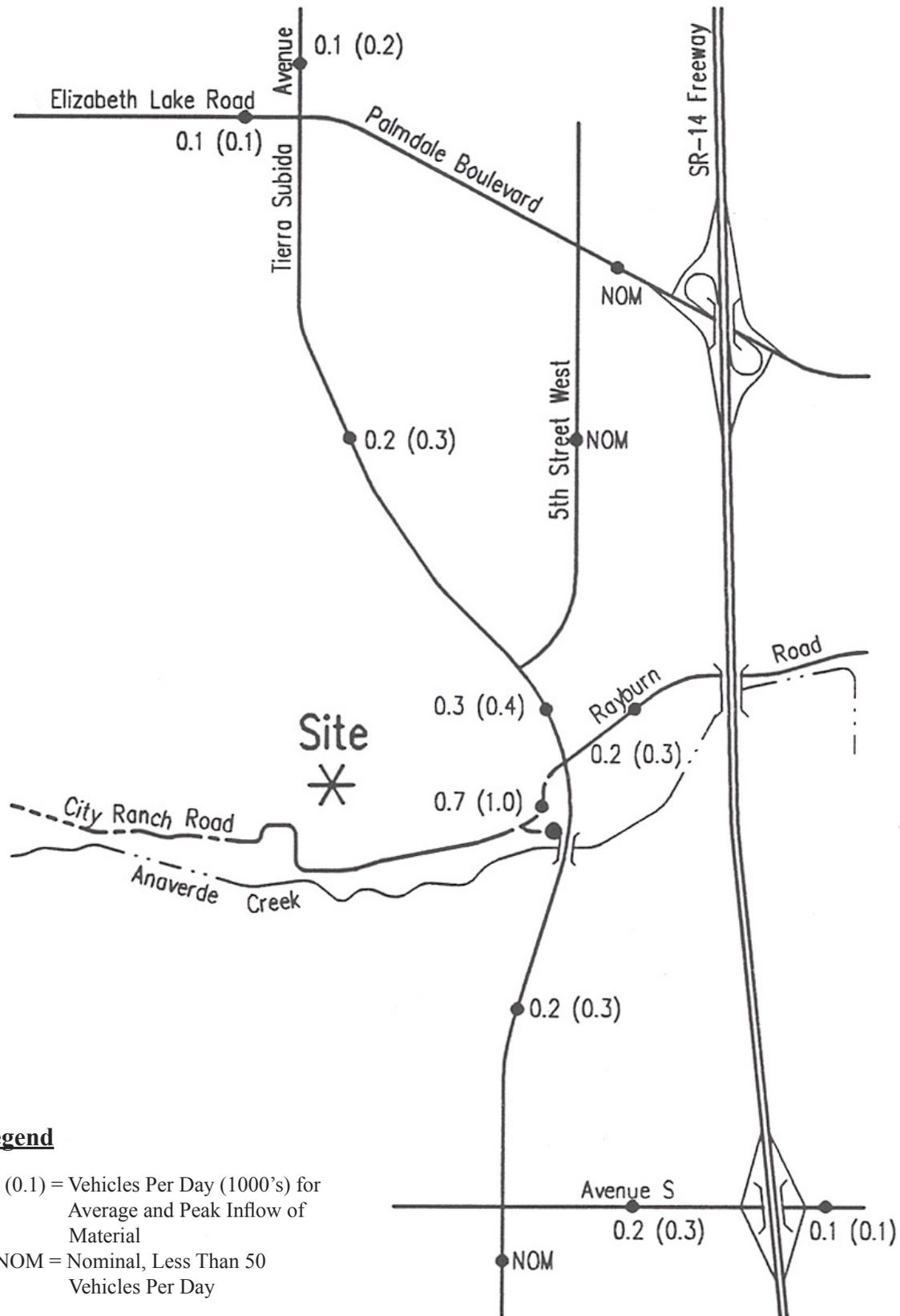
Source: Kunzman Associates

<sup>1</sup>The truck daily volume is known from the scale log. The car daily volume and total daily volumes were estimated and assume 18 percent of the total daily traffic is in the peak hours.

Note: Because of rounding, the totals may be off by 1.

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS**

Once the project related traffic is assigned to the existing street network and added to existing volumes, the traffic impact can be assessed. With the landfill expansion/reconfiguration, the existing plus project ADT volumes are as shown on **Figure 4.7-7**, Existing Plus Project Average Daily Traffic (ADT).



**Legend**

0.1 (0.1) = Vehicles Per Day (1000's) for Average and Peak Inflow of Material  
 NOM = Nominal, Less Than 50 Vehicles Per Day

**Existing Plus Project Volume to Capacity Ratios**

**Impact 4.7-1** Potential impact to LOS on roadway links in the vicinity of the site.

For existing plus project traffic conditions, daily volume to capacity ratios have been calculated and are shown on **Figure 4.7-8**, Existing Plus Project Volume to Capacity Ratio. Daily volume to capacity ratios are based on City of Palmdale roadway capacities. For existing plus project traffic conditions, the roadway links in the vicinity of the site are projected to continue to operate within acceptable LOS. No significant project traffic impacts are anticipated.

**Existing Plus Project Intersection Capacity Utilization (ICU)**

**Impact 4.7-2** Potential impact to LOS at intersections in the vicinity of the site.

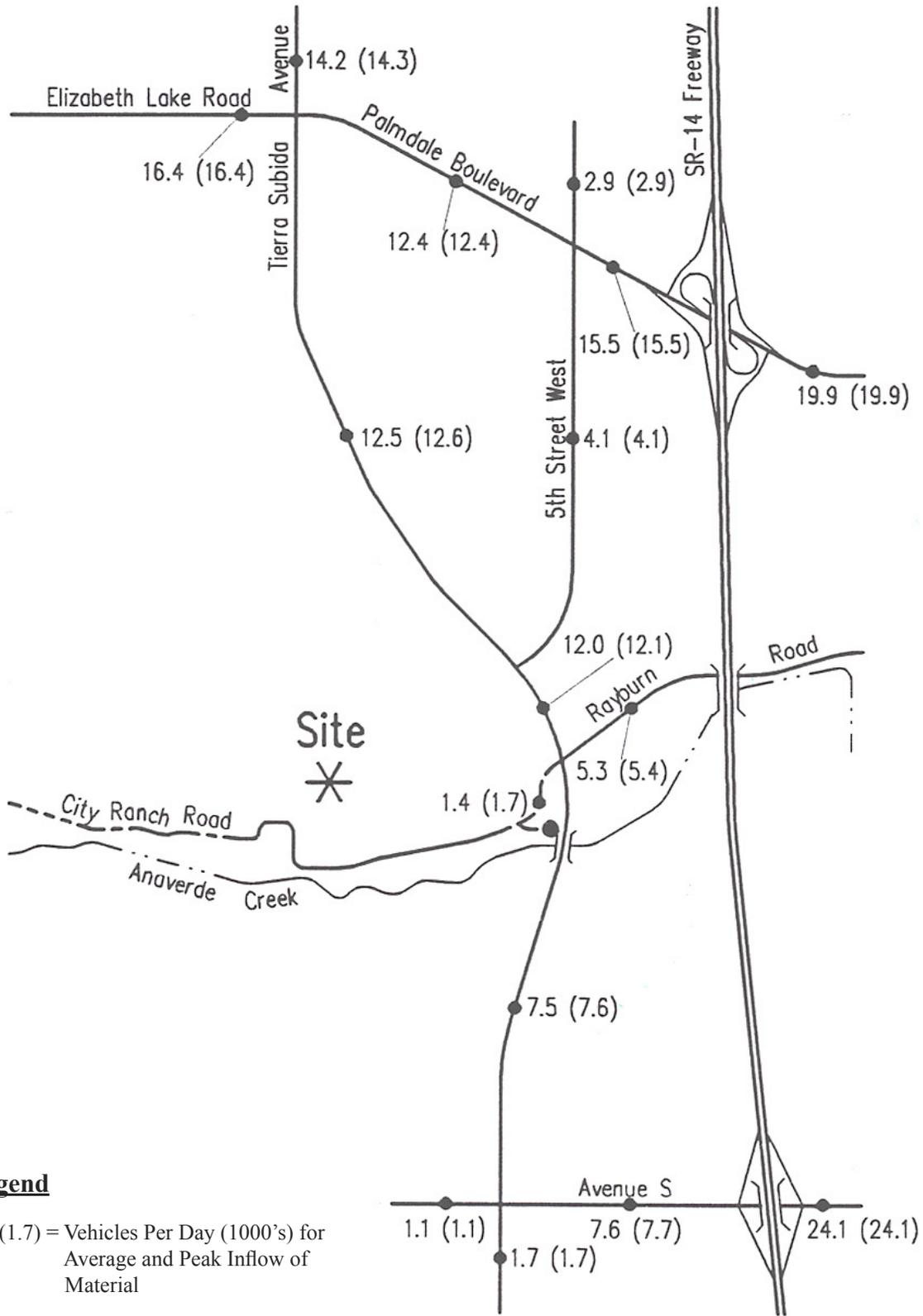
The technique used to assess the operation of an intersection is known as Intersection Capacity Utilization (ICU). The ICU for the existing plus project traffic conditions have been calculated and are shown in **Table 4.7-6**. Existing plus project morning and evening peak hour turning movement volumes are shown on Figures 20 and 21 of the Traffic Study (**Appendix G**).

For existing plus project traffic conditions, the intersections in the vicinity of the site are projected to continue to operate at LOS B or better during the peak hours. No significant project traffic impacts are anticipated.

**TABLE 4.7-6  
EXISTING PLUS PROJECT INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Average Inflow of Material (3,613 tpd)															
Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lanes <sup>1</sup>												Peak Hour ICU-LOS <sup>2</sup>	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Tierra Subida Ave. (NS) at: Palmdale Blvd. (EW) 5 <sup>th</sup> Street West (EW) Rayburn Rd. (EW) City Ranch Rd. (EW) Avenue S (EW)	TS CSS TS CSS TS	1	2	0	1	2	1	1	2	1	1	2	1	52.2-A	67.1-B
5 <sup>th</sup> Street West (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	30.0-A	51.7-A
SR-14 Freeway SB Ramps (NS) at: Palmdale Blvd. (EW) Avenue S (EW)	TS TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	36.6-A	67.3-B
		0	0	0	2	0	1	0	2	1>>	1	2	0	46.2-A	49.0-A

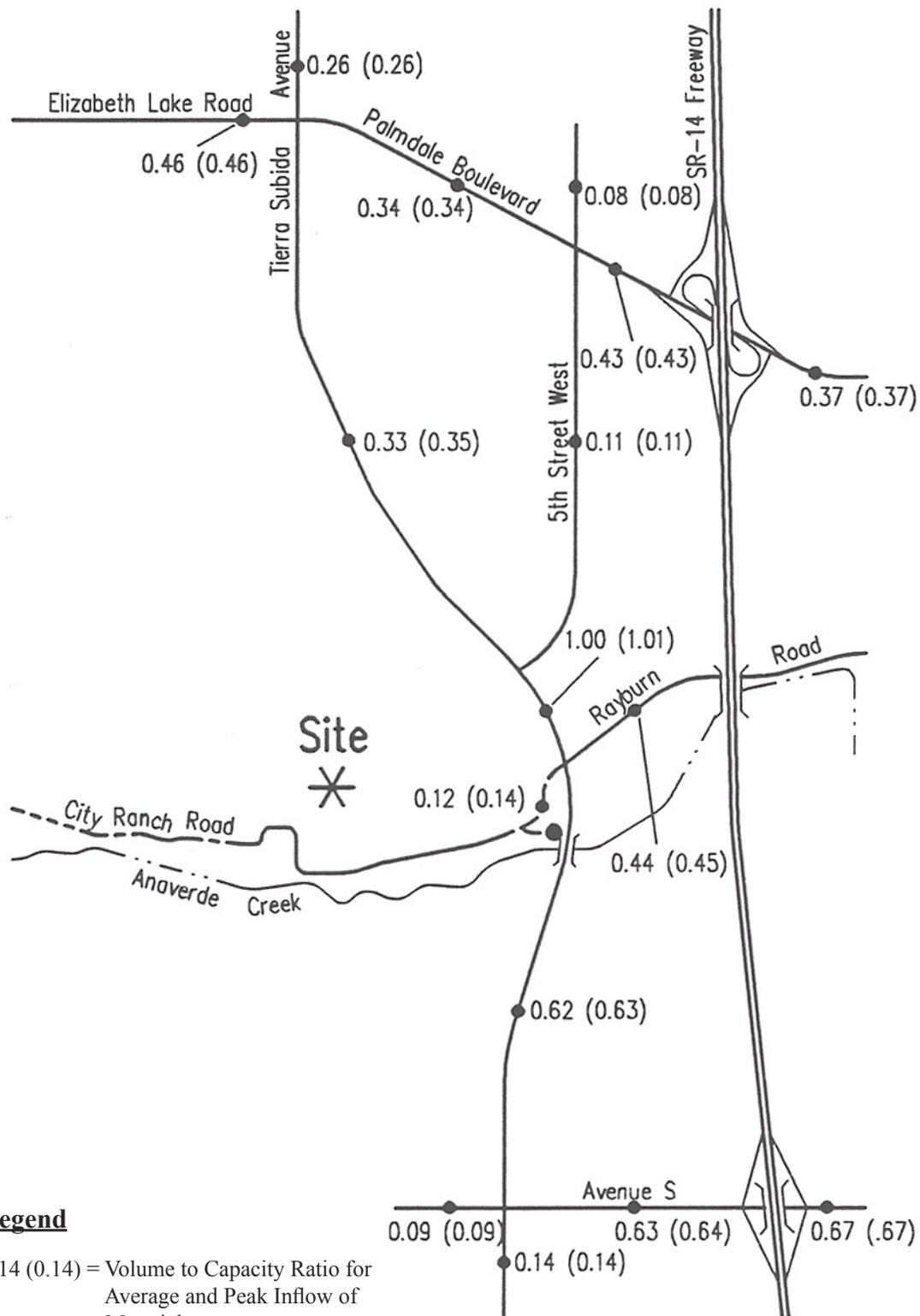




**Legend**

1.7 (1.7) = Vehicles Per Day (1000's) for Average and Peak Inflow of Material

**Figure 4.7-7**  
**Existing Plus Project**  
**Average Daily Traffic (ADT)**  
 December 2005



**Figure 4.7-8**  
**Existing Plus Project**  
**Volume to Capacity Ratio**  
 December 2005

**FUTURE SIGHT DISTANCE/ACCESS AT TIERRA SUBIDA/CITY RANCH ROAD**

**Impact 4.7-3** Potential for restricted sight distance for southbound vehicles on Tierra Subida Avenue approaching City Ranch Road.

Although no significant traffic intersection impacts would occur with the implementation of the project, the sight distance issue at Tierra Subida and City Ranch Road would become inadequate in the future with no implementation of improvements/mitigation (February 2003 and February 2010 Studies conducted by JSA Civil Engineers on file with the City of Palmdale Planning Department).

Mitigation is recommended at the intersection of Tierra Subida Avenue/City Ranch Road. Because of restricted sight distance for southbound vehicles on Tierra Subida Avenue approaching City Ranch Road, there is an operational problem when a disposal truck is making a left turn out of City Ranch Road. Eventually, the sight distance needs to be increased at the discretion of the Department of Public Works. The final May 2004 study concludes that rerouting a portion of R-5 to coincide with Rayburn Road is the preferred ultimate access route into the facility. This new landfill access solution will eliminate the site distance issue. However, subsequent to the preparation of this Draft EIR in December of 2005, the City of Palmdale has proposed to widen Tierra Subida Avenue between City Ranch Road and Cactus Drive (City Project Number 482). Since the City Project Number 482 would affect the proposed project site's existing access at the intersection of City Ranch Road and Tierra Subida Avenue, a sight distances evaluation was conducted (JT Engineering 2010) (see **Appendix G-1**). Based on the sight distance evaluation, the project engineer recommended to close off City Ranch Road at Tierra Subida and to construct Avenue R-5 from the Waste Management property line and a frontage road as the future access to the project site. This new frontage road would intersect Tierra Subida at Rayburn Road, creating a 4-way signalized intersection.

In addition to the "selected R-5 access road", several different alternative access route alignments and the signalization of Tierra Subida at the existing access (i.e., City Ranch Road) were explored through a series of analyses done in 2004 and again in 2010. The different alternatives in 2004 included various alignments generally along R-8 with extensions to the north at different points to connect in with the existing landfill access road. Another alignment was proposed off of Avenue S and extended north to connect with the existing landfill access. The alternatives in 2010 included measures to minimize impact on existing street improvements; and to avoid impacting the existing water mains and force sewer line in the street. These alternatives analyzed were discounted due to various considerations and/or constraints. The reasons for rejecting these alternatives included but were not limited to the following:

1. Inadequate signal spacing between existing/future signals and the existing/proposed access route locations;
2. Proposed access alignments would impact Anaverde Creek with one or more bridge crossings and would therefore entail permit processing with Fish and Game and Army Corps of Engineers;
3. Proposed access alignments did not have existing dedicated right-of-way(s); and
4. Proposed access alignment off of Avenue S would impact existing residential use on Avenue S.

Additionally, it should be noted that the City is processing an amendment to the General Plan Circulation Element to re-align City Ranch Road to the alignment of Avenue R-8. This Circulation Element GPA is not part of the currently proposed CUP project.

With the implementation of the new landfill access which is described in detail under Section 4.7.6, and **Mitigation Measure 4.7-1** potential impacts would be reduced to less than significant levels.

**Impact 4.7-4** Potential impact to State Route (SR)-14 from project and cumulative growth, south of Avenue S.

The State Route 14 Freeway, south of Avenue S, receives a maximum of 10 percent of the project's traffic (see **Figure 4.7-5** and **Table 4.7-1A**). This includes 70 vehicles per day for average inflow conditions and 97 vehicles per day for peak inflow condition. The SR 14 south of Avenue S has 70,000 vehicles per day per the latest available Caltrans counts, and the added project vehicles represents about a 0.14 percent increase which is insignificant. Per the Los Angeles Congestion Management Program (LACMP) section D.4, 150 added vehicles in the peak hour is considered a significant impact and would trigger future traffic impact analysis. As stated above, the proposed project would add far less than 150 vehicles for the entire day and the project peak hour trips on SR-14 would be even less than the daily figure.

The SR 14 currently has 6,000 vehicles in the peak hour. It has 55.9 percent in the peak hour peak direction, or 3,354 vehicles in one direction. One way capacity is 4,000 vehicles per hour per LACMP Appendix A, and it is operating at a volume to capacity ratio of 0.84. The operating speeds in the peak hour peak direction are above 45 miles per hour, which is a LOS C per Exhibit 5-1 contained in the LACMP.

#### 4.7.5 CUMULATIVE IMPACTS

##### YEAR 2007 TRAFFIC CONDITIONS

In Los Angeles County and the City of Palmdale, future traffic volumes are determined using growth rates that are applied to existing traffic volumes. The growth rates differ from one area of the County to another. According to the CMP, the expected growth rate for North County is 0.9 percent per year. Although a 0.9 percent per year growth rate is recommended by the CMP, based on discussions with the City traffic engineer, a "conservative" growth rate of 6.0 percent per year is used to account for areawide growth on roadways. Year 2007 traffic volumes have been calculated based on a 6.0 percent annual growth rate of existing traffic volumes over a 5 year period. The Los Angeles County Congestion Management Plan calls for an annual growth rate of 0.6 percent for North County, which is the area encompassing the Lancaster/Palmdale and is northeast of the San Fernando Valley. For this study, 6.0 percent was assumed.

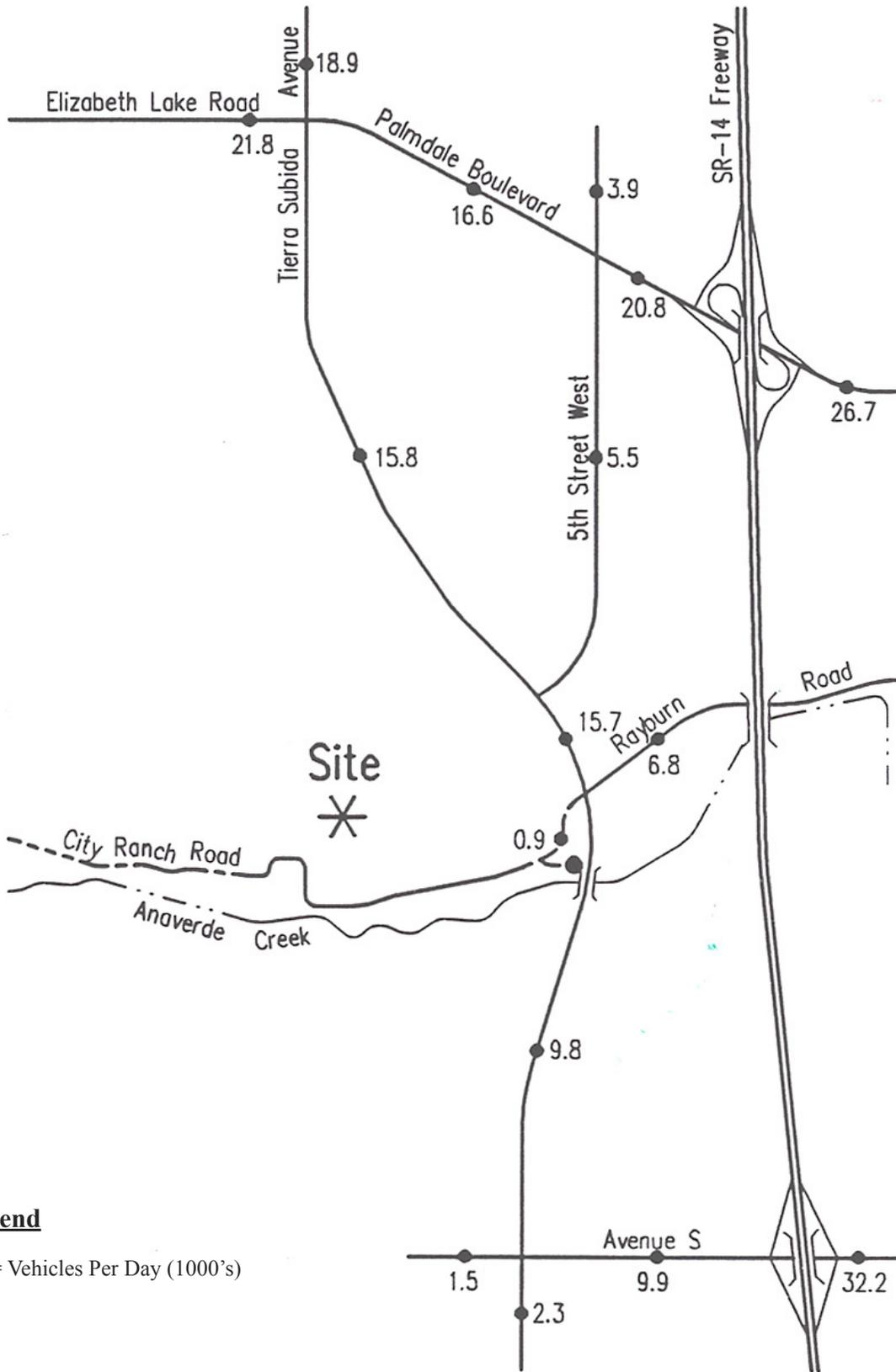
Areawide growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the project.

Year 2007 without project ADT volumes are depicted on **Figure 4.7-9**, Year 2007 Without Project Average Daily Traffic (ADT) Volumes and the Year 2007 with project ADT volumes are illustrated on **Figure 4.7-10**, Year 2007 With Project Average Daily Traffic (ADT) Volumes.

##### Year 2007 Volumes to Capacity Ratios

**Impact 4.7-5** Potential cumulative impact to LOS for Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road for Year 2007 without project and with project traffic conditions.

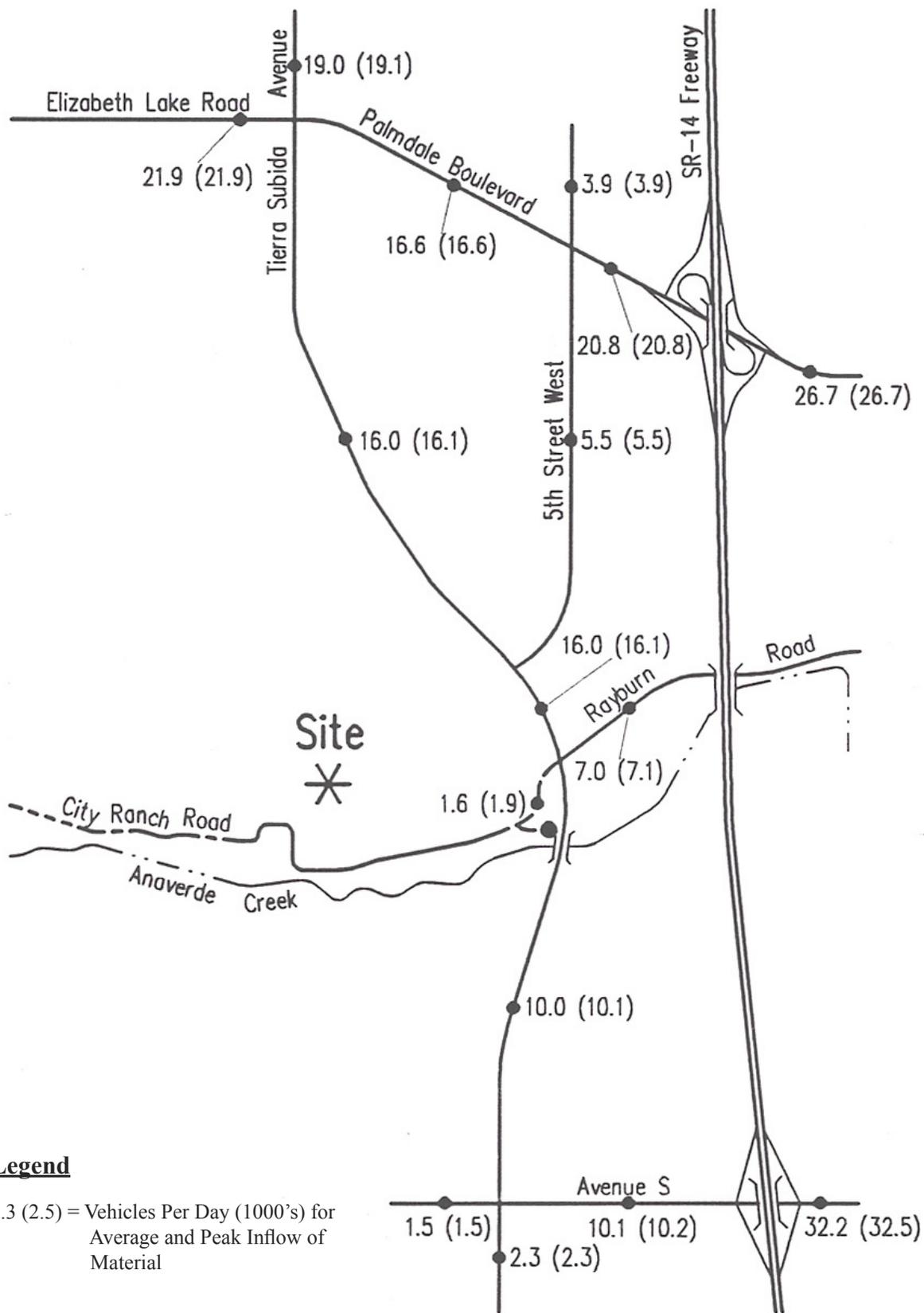
For Year 2007 without and with project traffic conditions, daily volume to capacity ratios are shown on **Figures 4.7-11**, Year 2007 Without Project Volumes to Capacity Ratio and **4.7-12**, Year 2007 With Project Volume to Capacity Ratio. Daily volume to capacity ratios are based on City of Palmdale roadway capacities depicted in **Table 4.7-2**. For Year 2007 without project and with project traffic



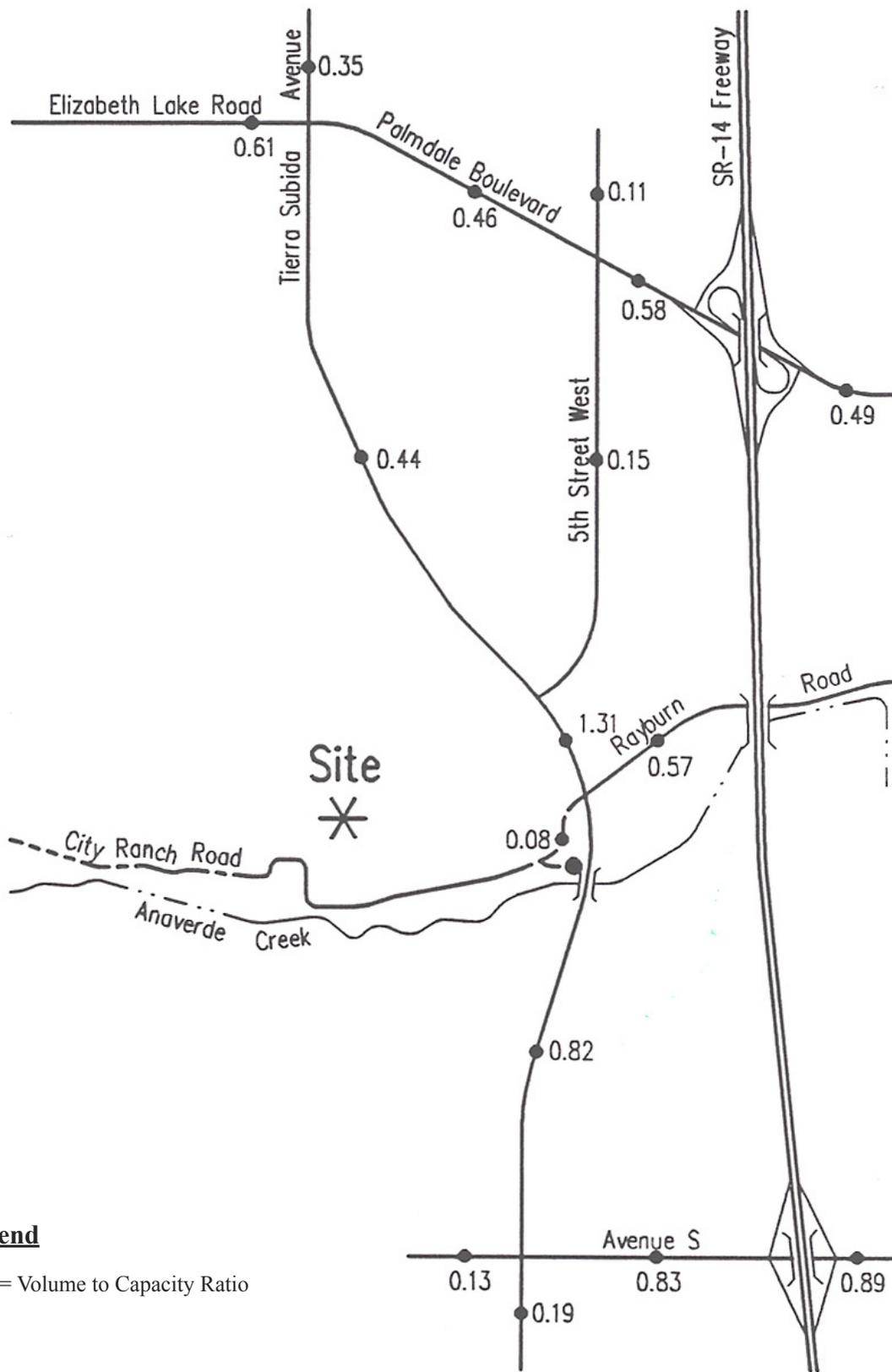
**Legend**

2.3 = Vehicles Per Day (1000's)

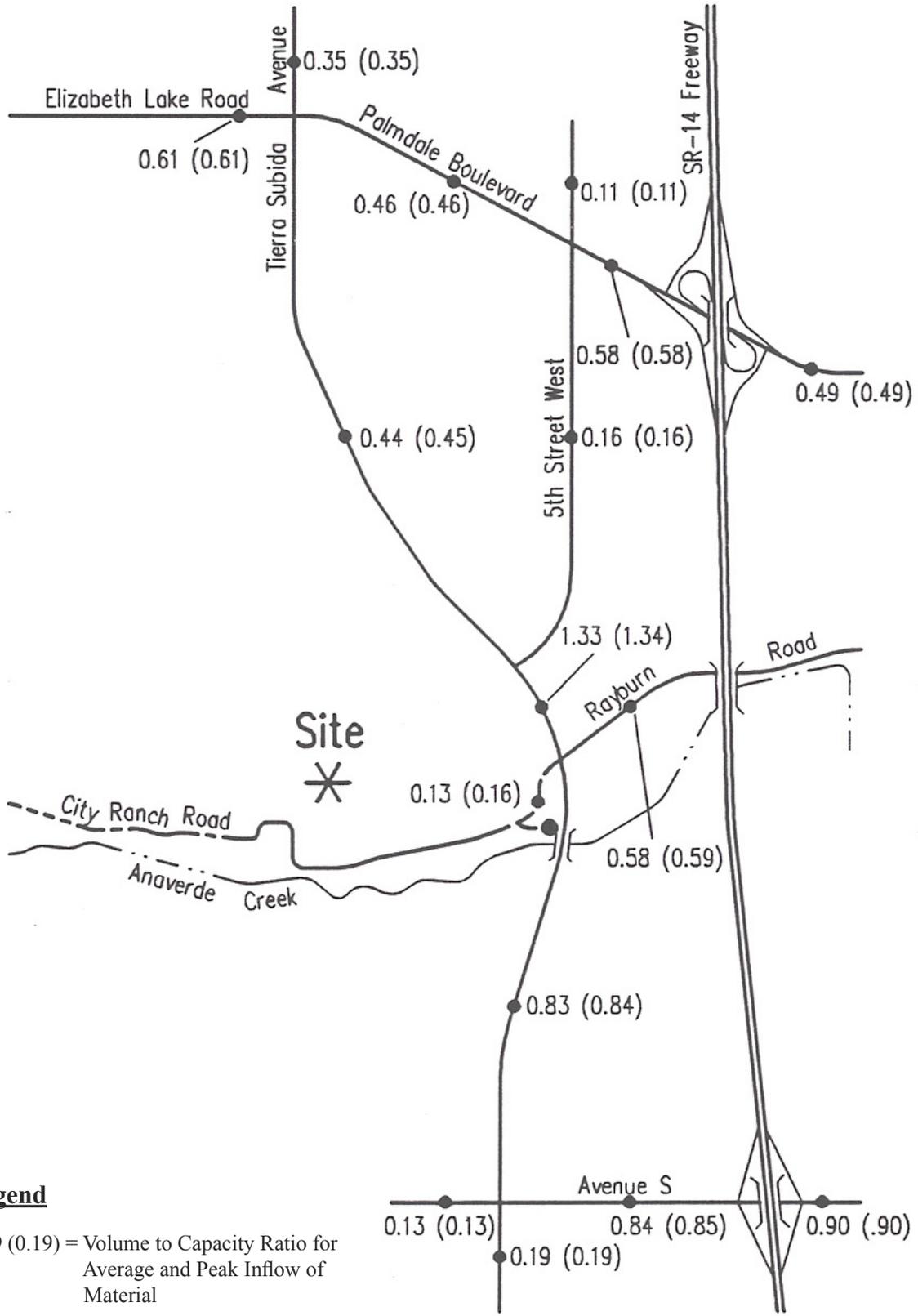
**Figure 4.7-9**  
 Year 2007 without Project  
 Average Daily Traffic (ADT) Volumes  
 December 2005



**Figure 4.7-10**  
 Year 2007 with Project  
 Average Daily Traffic (ADT) Volumes  
 December 2005



**Figure 4.7-11**  
**Year 2007 without Project**  
**Volumes to Capacity Ratio**  
 December 2005



**Legend**

0.19 (0.19) = Volume to Capacity Ratio for Average and Peak Inflow of Material

**Figure 4.7-12**  
**Year 2007 with Project**  
**Volume to Capacity Ratio**  
 December 2005

conditions, most of the roadway links in the vicinity of the site are projected to operate within acceptable LOS, except for Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road. This would be considered a significant cumulative impact. This condition will remain until Tierra Subida is widened to its ultimate General Plan designation. The project's contribution to this impact would be mitigated by **Mitigation Measures 4.7-1** through **4.7-4** that require construction/implementation of the new landfill access at R-5, Tierra Subida improvements, and payment of traffic impact fees in accordance with the City Traffic Impact Fee Ordinance.

#### **Year 2007 Intersection Capacity Utilization (ICU)**

**Impact 4.7-6** Potential cumulative impact to LOS for intersections in the vicinity of the site during peak hours for the Year 2007 without project traffic conditions. Potential cumulative impact to LOS for intersections for the Year 2007 with project traffic conditions, during the peak hours for average and peak inflow of material traffic conditions.

The technique that assesses the operation of an intersection is known as the Intersection Capacity Utilization (ICU). The ICU's for the Year 2007 without project traffic conditions are shown in **Table 4.7-7**. Year 2007 without project morning and evening peak hour turning movement volumes are shown on Figures 26 and 27 of the Traffic Study (**Appendix G**), respectively.

For Year 2007 without project traffic conditions, the intersections in the vicinity of the site are projected to operate at LOS D or better during the peak hours. The ICU's for the Year 2007 with project traffic conditions have been calculated and are shown in **Table 4.7-8**. Year 2007 with project morning and evening peak hour turning movement volumes are shown on Figures 28 and 29 of the Traffic Study (**Appendix G**), respectively.

For Year 2007 with project traffic conditions, the intersections in the vicinity of the site are projected to operate at Level of Service D or better during the peak hours for average and peak inflow of material traffic conditions (**Table 4.7-9**). Therefore, no significant cumulative impacts to intersection LOS are anticipated.

Because the project does not have a significant impact when the project is added to existing traffic conditions, nor when it is added to 2007 traffic conditions, it will also not have a significant impact at any other future point in time such as Year 2025. This is because the project will never increase the ICUs by more than the amount shown (**Table 4.7-9**).

**TABLE 4.7-7  
YEAR 2007 WITHOUT PROJECT INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lanes <sup>1</sup>												Peak Hour ICU-LOS <sup>2</sup>	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Tierra Subida Ave. (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	66.2-B	86.3-D
5 <sup>th</sup> Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	50.1-A	62.1-B
Rayburn Rd. (EW)	TS	<u>1</u>	1	1	1	1	<u>1</u>	<u>1</u>	0	1	<u>1</u>	0	65.2-B	81.7-D	
City Ranch Rd. (EW)	CSS	0	1	0	1	1	0	0	0	1	0	1	33.0-A	53.8-A	
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	50.8-A	71.5-C
5 <sup>th</sup> Street West (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	36.7-A	65.9-B
SR-14 Freeway SB Ramps (NS) at: Palmdale Blvd. (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	45.6-A	86.9-D
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	58.2-A	62.1-B
SR-14 Freeway NB Ramps (NS) at: Palmdale Blvd. (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	32.6-A	55.7-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	36.8-A	52.1-A

Source: Kunzman Associates

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; 1 = Improvement

<sup>2</sup> ICU-LOS = Intersection Capacity Utilization – Level of Service

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS = All Way Stop

**TABLE 4.7-8  
YEAR 2007 WITH PROJECT INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Average Inflow of Material (3,613 tpd)															
Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lanes <sup>1</sup>												Peak Hour ICU-LOS <sup>2</sup>	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Tierra Subida Ave. (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	66.5-B	86.5-D
5 <sup>th</sup> Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	50.8-A	62.6-B
Rayburn Rd. (EW)	TS	1	1	1	1	1	1	1	1	0	1	1	0	66.4-B	82.3-D
City Ranch Rd. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	33.5-A	53.8-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	51.7-A	72.0-C
5 <sup>th</sup> Street West (NS) at: Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	36.8-A	65.9-B
SR-14 Freeway SB Ramps (NS) at: Palmdale Blvd. (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	45.6-A	86.9-D
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	58.4-A	62.2-B
SR-14 Freeway NB Ramps (NS) at: Palmdale Blvd. (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	32.6-A	55.7-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	37.1-A	52.2-A

**TABLE 4.7-8 (CONT'D)  
YEAR 2007 WITH PROJECT INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Peak Inflow of Material (5,448 tpd)															
Intersection	Traffic Control <sup>3</sup>	Intersection Approach Lanes <sup>1</sup>												Peak Hour ICU-LOS <sup>2</sup>	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Tierra Subida Ave. (NS) at:															
Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	66.5-B	86.6-D
5 <sup>th</sup> Street West (EW)	CSS	0	1	1	1	1	0	0	0	0	1	0	1	51.0-A	62.7-B
Rayburn Rd. (EW)	TS	<u>1</u>	1	1	1	1	<u>1</u>	<u>1</u>	<u>1</u>	0	1	<u>1</u>	0	68.8-B	82.5-D
City Ranch Rd. (EW)	CSS	0	1	0	1	1	0	0	0	0	1	0	1	33.7-A	54.0-A
Avenue S (EW)	TS	0	1	0	0	1	0	0	1	0	0	1	0	52.0-A	72.1-C
5 <sup>th</sup> Street West (NS) at:															
Palmdale Blvd. (EW)	TS	1	2	0	1	2	1	1	2	1	1	2	1	36.9-A	65.9-B
SR-14 Freeway SB Ramps (NS) at:															
Palmdale Blvd. (EW)	TS	0	0	0	1	0	1>>	0	2	1>>	0	2	1>>	45.6-A	86.9-D
Avenue S (EW)	TS	0	0	0	2	0	1	0	2	1>>	1	2	0	58.4-A	62.3-B
SR-14 Freeway NB Ramps (NS) at:															
Palmdale Blvd. (EW)	TS	1	0	1>>	0	0	0	0	3	1>>	0	3	1>>	32.6-A	55.7-A
Avenue S (EW)	TS	1	0	1>>	0	0	0	1	2	0	0	2	1>>	37.2-A	52.3-A

Source: Kunzman Associates

<sup>1</sup> When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; >> = Free Right Turn; 1 = Improvement

<sup>2</sup> ICU-LOS = Intersection Capacity Utilization – Level of Service

<sup>3</sup> TS = Traffic Signal  
 CSS = Cross Street Stop  
 AWS – All Way Stop

**TABLE 4.7-9  
YEAR 2007 SUMMARY OF INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Intersection	Scenario	Average Inflow of Material (3,613)		Peak Inflow of Material (5,448)		Significant Impact <sup>2</sup>	
		ICU-LOS <sup>1</sup>		ICU-LOS <sup>1</sup>		Average Inflow	Average Inflow
		Morning	Evening	Morning	Evening		
Tierra Subida Avenue (NS) at: Palmdale Boulevard (EW)	Existing	52.0-A	66.9-B	52.0-A	66.9-B	No	No
	Existing Plus Project	52.2-A	67.1-B	52.3-A	67.2-B		
	Difference	+0.2	+0.2	+0.3	+0.3		
	Year 2007 Without Project	66.2-B	86.3-D	66.2-B	86.3-D		
Tierra Subida Avenue (NS) at: 5 <sup>th</sup> Street West (EW)	Existing	39.9-A	48.9-A	39.9-A	48.9-A	No	No
	Existing Plus Project	40.6-A	49.4-A	40.9-A	49.4-A		
	Difference	+0.7	+0.5	+1.0	+0.5		
	Year 2007 Without Project	50.1-A	62.1-B	50.1-A	62.1-B		
Tierra Subida Avenue (NS) at: Rayburn Road (EW)	Existing	51.3-A	63.4-B	51.3-A	63.4-B	No	No
	Existing Plus Project	52.5-A	64.1-B	52.8-A	64.3-B		
	Difference	+1.2	+0.7	+1.5	+0.9		
	Year 2007 Without Project	65.2-B	81.7-D	65.2-B	81.7-D		
Tierra Subida Avenue (NS) at: City Ranch Road (EW)	Existing	27.1-A	42.7-A	27.1-A	42.7-A	No	No
	Existing Plus Project	27.6-A	42.7-A	27.8-A	43.8-A		
	Difference	+0.5	+0.0	+0.7	+1.1		
	Year 2007 Without Project	33.0-A	53.8-A	33.0-A	53.8-A		
Tierra Subida Avenue (NS) at: Avenue S (EW)	Existing	40.5-A	55.9-A	40.5-A	55.9-A	No	No
	Existing Plus Project	41.3-A	56.4-A	41.7-A	56.5-A		
	Difference	+0.8	+0.5	+1.2	+0.6		
	Year 2007 Without Project	33.5-A	53.8-A	33.7-A	54.0-A		
Tierra Subida Avenue (NS) at: City Ranch Road (EW)	Existing	66.4-B	82.3-D	66.8-B	82.5-D	No	No
	Existing Plus Project	66.5-B	86.5-D	66.5-B	86.6-B		
	Difference	+0.3	+0.2	+0.3	+0.3		
	Year 2007 Without Project	50.8-A	62.6-B	51.0-A	62.7-B		

**TABLE 4.7-9 (CONT'D)  
YEAR 2007 SUMMARY OF INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Intersection	Scenario	Average Inflow of Material (3,613)		Peak Inflow of Material (5,448)		Significant Impact <sup>2</sup>	
		ICU-LOS <sup>1</sup>		ICU-LOS <sup>1</sup>		Average Inflow	Average Inflow
		Morning	Evening	Morning	Evening		
Tierra Subida Avenue (NS) at: Avenue S (EW)	Year 2007 Without Project	50.8-A	71.5-C	50.8-A	71.5-C	No	No
	Year 2007 With Project	51.7-A	72.0-C	52.0-A	72.1-C		
	Difference	+0.9	+0.5	+1.2	+0.6		
5 <sup>th</sup> Street West (NS) at: Palmdale Boulevard (EW)	Existing	30.0-A	51.7-A	30.0-A	51.7-A	No	No
	Existing Plus Project	30.0-A	51.7-A	30.2-A	51.7-A		
	Difference	+0.0	+0.0	+0.2	+0.0		
	Year 2007 Without Project	36.7-A	65.9-B	36.7-A	65.9-B		
	Year 2007 With Project	36.8-A	65.9-B	36.9-A	65.9-B		
	Difference	+0.1	+0.0	+0.2	+0.0		
SR-14 Freeway SB Ramps (NS) at: Palmdale Boulevard (EW)	Existing	36.6-A	67.3-B	36.6-A	67.3-B	No	No
	Existing Plus Project	36.6-A	67.3-B	36.6-A	67.3-B		
	Difference	+0.0	+0.0	+0.0	+0.0		
	Year 2007 Without Project	45.6-A	86.9-D	45.6-A	86.9-D		
	Year 2007 With Project	45.6-A	86.9-D	45.6-A	86.9-D		
	Difference	+0.0	+0.0	+0.0	+0.0		
SR-14 Freeway SB Ramps (NS) at: Avenue S (EW)	Existing	46.1-A	48.9-A	46.1-A	48.9-A	No	No
	Existing Plus Project	46.2-A	49.0-A	46.3-A	49.1-A		
	Difference	+0.1	+0.1	+0.2	+0.2		
	Year 2007 Without Project	58.2-A	62.1-B	58.2-A	62.1-B		
	Year 2007 With Project	58.4-A	62.2-B	58.4-A	62.3-B		
	Difference	+0.2	+0.1	+0.2	+0.2		
SR-14 Freeway NB Ramps (NS) at: Palmdale Boulevard (EW)	Existing	26.9-A	44.0-A	26.9-A	44.0-A	No	No
	Existing Plus Project	26.9-A	44.0-A	26.9-A	44.0-A		
	Difference	+0.0	+0.0	+0.0	+0.0		
	Year 2007 Without Project	32.6-A	55.7-A	32.6-A	55.7-A		
	Year 2007 With Project	32.6-A	55.7-A	32.6-A	55.7-A		
	Difference	+0.0	+0.0	+0.0	+0.0		

**TABLE 4.7-9 (CONT'D)  
YEAR 2007 SUMMARY OF INTERSECTION CAPACITY UTILIZATION (ICU)  
AND LEVEL OF SERVICE (LOS)**

Intersection	Scenario	Average Inflow of Material (3,613)		Peak Inflow of Material (5,448)		Significant Impact <sup>2</sup>	
		ICU-LOS <sup>1</sup>		ICU-LOS <sup>1</sup>		Average Inflow	Average Inflow
		Morning	Evening	Morning	Evening		
SR-14 Freeway NB Ramps (NS) at: Avenue S (EW)	Existing	30.0-A	41.4-A	30.0-A	41.4-A	No	No
	Existing Plus Project	30.4-A	41.5-A	30.4-A	41.6-A		
	Difference	+0.4	+0.1	+0.4	+0.2		
	Year 2007 Without Project	36.8-A	52.1-A	36.8-A	52.1-A		
	Year 2007 With Project	37.1-A	52.2-A	37.2-A	52.3-A		
	Difference	+0.3	+0.1	+0.4	+0.2		

Source: Kunzman Associates

<sup>1</sup> ICU-LOS – Intersection Capacity Utilization – Level of Service

<sup>2</sup> In the County of Los Angeles, the change in the ICU value is considered insignificant if the change in the ICU is less than 1 percent regardless of the ICU value, or if the change in the ICU value is less than 2 percent and the ICU with the project is less than 90 percent.

**4.7.6 MITIGATION MEASURES**

**4.7-1** The City of Palmdale shall approve the final roadway design for the new landfill access and periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

The future landfill access road alignment shall be along R-5 as a two lane roadway (60-foot right-of-way). R-5 shall intersect a new frontage road. The R-5 access road shall be constructed as a two lane roadway (60-foot right-of-way). The future landfill access road alignment shall also be along the new frontage road that would connect with City Ranch Road and intersect Tierra Subida at Rayburn Road, and create a 4-way signalized intersection (**Figures 4.7-13, Proposed Realignment of City Ranch Road to be Opposite Rayburn Road at Tierra Subida Avenue and 4.7-14, Proposed City Ranch Road Roadway Cross-Section**).

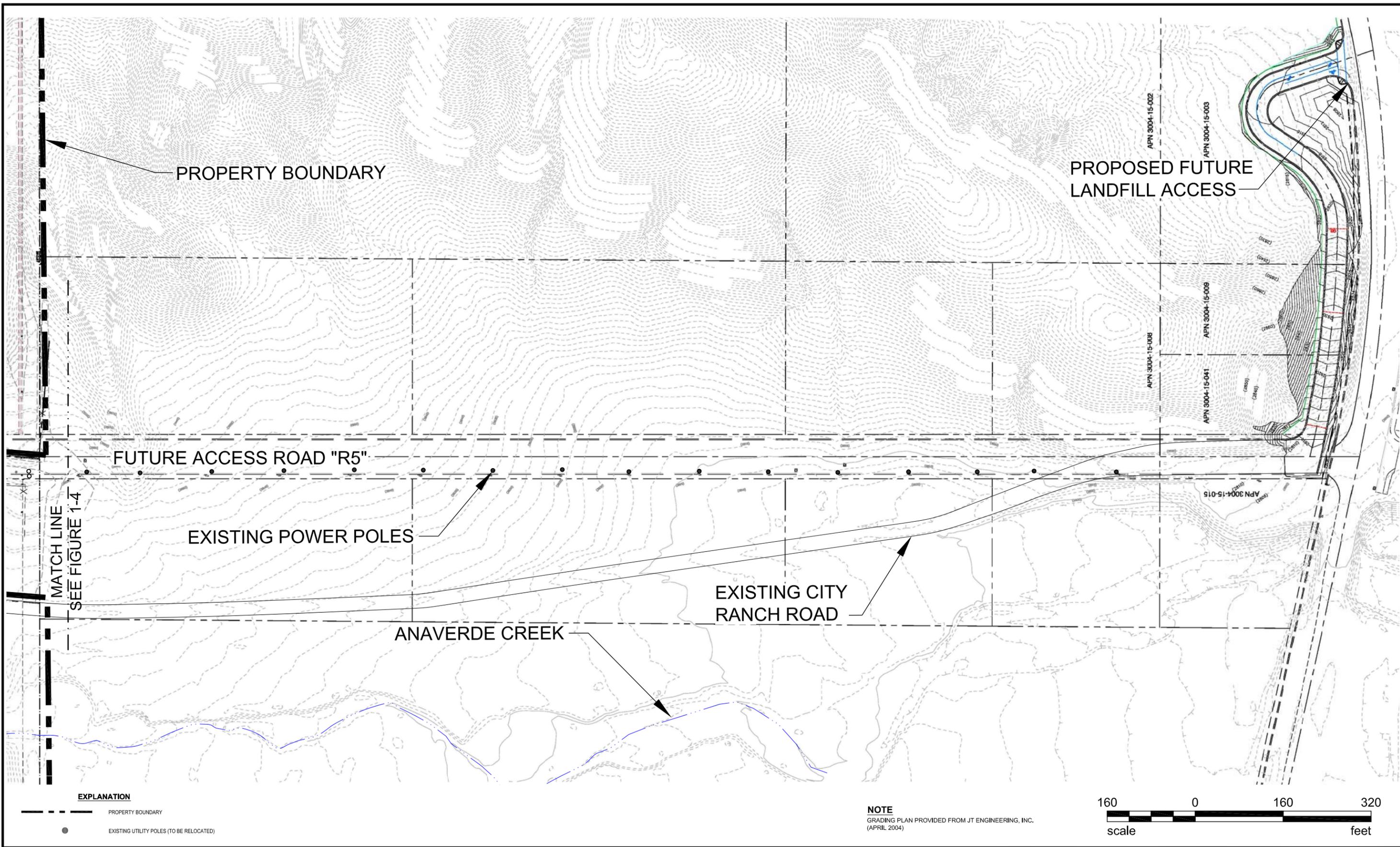
Preliminary design of the frontage road calls for a 40-foot roadway measured from curb to curb, with an 8-foot sidewalk adjacent to the west curb and a 10-foot-minimum buffer between the east curb and the ultimate location of the west sidewalk of Tierra Subida proper. The new realignment of the landfill access (new frontage road) shall accomplish the following:

- Improve sight distance and related operational safety.
- Improve horizontal and vertical alignment.
- Wider lanes will result at the Tierra Subida Avenue/Rayburn Road intersection than at the existing City Ranch Road intersection.
- Improve traffic signal spacing along Tierra Subida Avenue.

- 4.7-2** The applicant shall construct right-of-way and traffic signal improvements at the intersection of the landfill access road at Rayburn Road (see **Figure 4.7-13**) in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.
- 4.7-3** During landfill operations, worker-rideshare and transit plans shall be encouraged by the landfill operator consistent with the goals of the Air Quality Management Plan.
- 4.7-4** The applicant shall pay traffic impact fees in accordance with the City Traffic Impact Fee Ordinance. Credits shall be applied consistent with the Ordinance for the improvements (see **Mitigation Measure 4.7-2**) installed by the applicant.

#### **4.7.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

No significant impacts would occur to studied intersections under the existing plus project scenarios. With the implementation of **Mitigation Measure 4.7-1**, potential future impacts to sight distance would be eliminated. The project's traffic increase on SR-14 is not considered significant per the LACMP Guidelines. Under the year 2007 cumulative impacts, no significant impacts would occur with the exception of the LOS for the roadway link of Tierra Subida Avenue between 5<sup>th</sup> Street and Rayburn Road. Implementation of **Mitigation Measures 4.7-1** through **4.7-4** will reduce the project contribution to this cumulative impact to a less than significant level. This significant cumulative impact will remain until such time that Tierra Subida is widened to its ultimate General Plan designation.



**Figure 4.7-13**  
**Proposed Realignment of City Ranch Road**  
**to be Opposite Rayburn Road**  
**at Tierra Subida Avenue**  
 FEBRUARY 2010

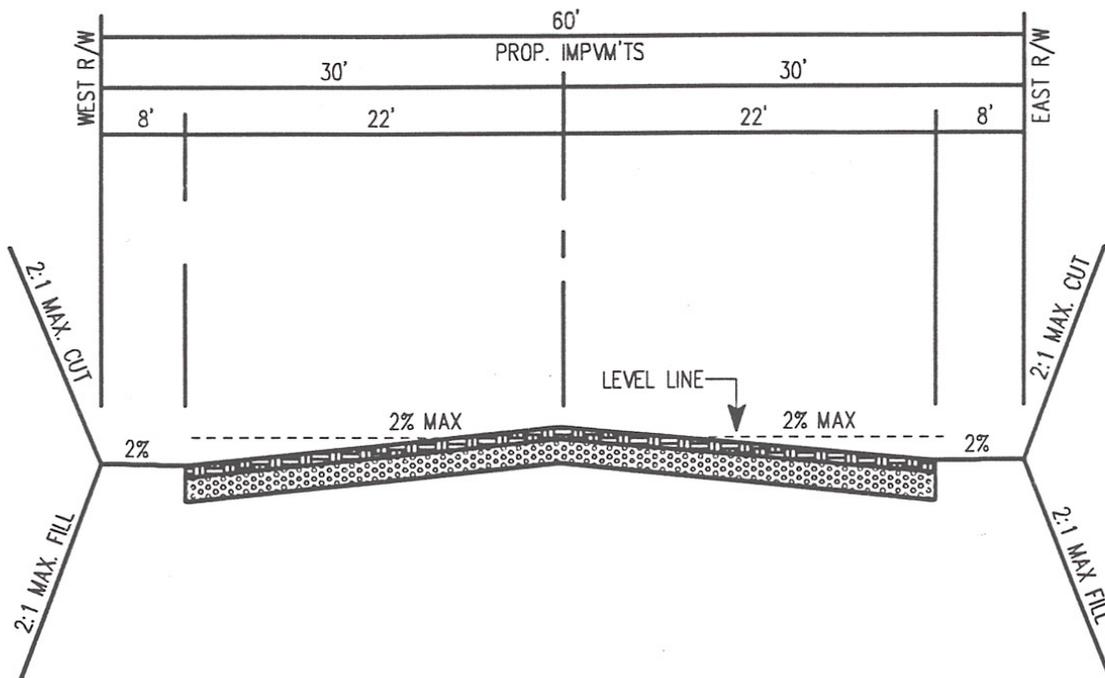


Figure 4.7-14  
 Proposed City Ranch Road  
 Roadway Cross-Section  
 December 2005

## 4.8 RISK OF UPSET/HUMAN HEALTH

### 4.8.1 INTRODUCTION

This section discusses issues associated with environmental safety such as hazardous waste. Other issues such as groundwater contamination and flooding are addressed in the hydrology and water quality section of this EIR. Impacts related to methane gas emissions and DPMs are discussed under the air quality section.

### 4.8.2 EXISTING CONDITIONS

Disposal of hazardous waste is not permitted at the Antelope Valley Public Landfill as it is a Class III facility. Under the terms of the Solid Waste Facility Permit issued by the CIWMB, the site is prohibited from accepting liquids, hazardous and medical waste, as well as dead animals. This is also in accordance with the waste discharge requirements (WDR) issued by the RWQCB.

However, some household hazardous materials may occasionally be in the waste material that is brought to the landfill. This occurs when refuse is received from households which may include small amounts of materials such as paint and paint thinner, used motor oil, pesticides and herbicide containers, lye, bleach, ammonia, etc. If hazardous wastes in the incoming refuse are discovered by the landfill operators, the hauler is prohibited from dumping the load.

Although these household hazardous materials are known to occasionally be within municipal waste, the relatively small quantities of these materials and the absorption that occurs when they are combined with the larger quantities of non-hazardous wastes minimizes the potential for the creation of a hazardous condition.

Los Angeles County and local municipalities have been working to prevent household hazardous materials from disposal in landfills. Educational programs and literature have been successful in teaching the public of the hazards of this material and alternate methods of disposal. Household hazardous waste “roundup” days and permanent collection centers have been implemented within the County. These operations accept unlimited amounts of hazardous waste from residential sources. The educational programs and collection operations have been successful in removing hundreds of tons of material per year from disposal in landfills.

Studies by the Los Angeles County Sanitation District estimated the quantities of household hazardous waste in the waste stream to be between 0.0015 percent and 0.2 percent by weight of municipal waste.

The existing Landfill I currently implements a Hazardous Waste Load Checking Program and employs site security measures. The description of this program and measures are included in Section 3.0 of this document and is provided below for ease of reference.

### HAZARDOUS WASTE LOAD CHECK PROGRAM

A hazardous waste load check program has been developed to comply with state and federal regulations under Title 27 CCR, Section 20220 and 20870 and CFR, Chapter 1.

The program is based on two basic principles. The first is to prescreen any waste that may contain hazardous constituents. The second is to check incoming loads of waste for materials that are unacceptable at a Class III landfill.

The prescreening program is defined in the Hazardous Waste Load Checking Program. As part of that program, any waste that may be generated from an industrial source or could contain hazardous constituents is required to fill out waste profiles, provide laboratory test results that characterize the waste, and provide generator certifications that the waste is not hazardous. Profiles are reviewed by experienced technical personnel, and if appropriate, approved for acceptance. Waste cannot be accepted without an approved application.

Waste is also inspected through a Random Load Inspection Program and continuously inspected at the active working face. The existing LEA Solid Waste Facility Permit (SWFP) requires the landfill operators to randomly check two loads daily regardless of the daily intake tonnage. The operators of the AVPL currently do randomly check four loads per day. Scale clerks and equipment operators are trained and responsible for recognizing regulatory hazardous wastes and Polychlorinated Biphenyl (PCB) wastes. Typical characteristics of suspect waste are closed-top drums, tanks, containers with hazardous labeling, and materials foreign to typical commercial waste loads. Personnel attempt to identify the haulers and will notify the operations manager. It should be noted that due to safety regulations, spotters are not allowed on the ground surface at the working face of the landfill but occupy strategic positions either on a piece of equipment or secure area with visual contact of the working face.

Hazardous materials encountered at the landfill are characterized according to risk. Wastes that pose an immediate risk to health and safety of site personnel will require notification of an emergency response unit. Such wastes include explosives, highly acidic/base, and extremely toxic chemicals. A portion of the working face will be cordoned off until the waste is contained and/or transported off-site.

Low risk materials, such as oil, paint, and other household hazardous waste, which can be handled safely are managed by site personnel. These wastes are stored on-site in a designated storage area until a licensed hazardous waste hauler or recycler can dispose of the waste properly.

The designated hazardous waste storage area is located in the existing ancillary facilities area for the temporary storage of waste collected as part of the load checking program. This area is specifically designed for the handling and storage of hazardous wastes, including approved storage containers which are safe and convenient for storing identified wastes.

On-site hazardous waste storage are limited to 90 days or as required by the State Department of Toxic Substances Control (DTSC) prior to being transported to a permitted treatment, storage, and disposal facility (TSDF). The "Accumulation Start Date" on the California hazardous waste label of each drum containing hazardous waste is monitored on a regular basis.

A hazardous waste hauler licensed in the State of California is contracted to remove the material within the time frame established in the state-mandated hazardous materials removal schedule. Unauthorized hazardous waste discharges are reported to the RWQCB; DTSC; County of Los Angeles, Department of Health Services and Department of Hazardous Waste Section.

The local Antelope Valley Cities and County of Los Angeles have also joined Waste Management to develop a Household Hazardous Waste (HHW) drop-off station at the entry to the Antelope Valley Public

Landfill. The new facility (Antelope Valley Environmental Collection Center [AVECC]) began operation in August 2005 with hours of 9:00 a.m. to 3:00 p.m. on two Saturdays each month to accept household hazardous waste from local residents free of charge. This operation, although separate from the landfill operations, serves as an additional measure to direct hazardous materials away from the landfill disposal area.

#### **LEACHATE COLLECTION AND REMOVAL SYSTEM**

Another protective measure that will be implemented as part of the landfill construction is a leachate collection and removal system (LRCS). The proposed expansion area will contain a blanket type (covers the entire bottom of the landfill) LRCS constructed directly on top of the engineered composite liner system. Leachate is defined as, any liquid formed by the drainage of liquids from waste, or by the percolation or flow of liquid through waste (27 CCR § 20164). The LRCS will be installed in accordance with Title 27 CCR Section 20340, as they are required for Class III landfills which have a liner or accept sewage or water treatment sludge. The initial phase of the system will be sized and laid out in a manner that will facilitate its extension as the landfill develops (see Section 3.0 for design details). After installation the collection system will be routinely monitored to detect the presence of any leachate. Any leachate will be removed and re-circulated into the waste over lined areas; used for on-site dust control if approved by the RWQCB and LEA; or hauled to an appropriate treatment facility.

#### **SITE SECURITY**

The landfill facility is located in a canyon area positioned south of a ridgeline which affords some natural protection against unauthorized access. The California Aqueduct provides a barrier to entering the landfill site from the south.

The facility is equipped with a system of fences and locking gates surrounding the perimeter of the entire site to control authorized access. Public access to the facility is only permitted through the main entrance. The hazardous materials storage area is surrounded by a fence that is locked and entry is restricted to authorized personnel. Highly visible signs are posted on all fence sides designating an off-limits area containing hazardous waste. Additionally, 24-hour security is provided on-site by WMI. The security system includes either security patrols or automated camera system to discourage illegal day- and night-time activity including trespassing and vandalism.

#### **4.8.3 THRESHOLD OF SIGNIFICANCE**

Appendix G of the CEQA Guidelines, Environmental Checklist Form, serves as a guideline of consequences that are deemed to have a significant effect on the environment. According to the Environmental Checklist, a project may be deemed to have a significant risk of upset/human health resources effect if it will:

- A risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals, or radiation) in the event of an accident or upset condition.
- Possible interference with any emergency response plan or emergency evacuation.

Or if the site is:

- Included on any known State Hazardous Waste Site list.
- Within or adjacent to a high fire hazard area as shown in the General Plan, identified by the Los Angeles County Fire Department or based on a site inspection.

#### 4.8.4 PROJECT IMPACTS

**Impact 4.8-1** Potential impact related to household hazardous waste and radioactive waste.

Based upon the findings documented in the Initial Study contained in **Appendix A-1**, the proposed project, including the proposed alignment for the entry drive, is not on the State Hazardous Waste Site List, or within a high fire hazard area and it will not interfere with any adopted emergency response plan or emergency evacuation plan. The new alignment will facilitate circulation and entry to the site from Tierra Subida Avenue.

The prior environmental analysis for the project site, under the topic of environmental safety, identified the inclusion of household hazardous waste in the landfill waste stream as a significant environmental safety impact prior to mitigation. The potential inadvertent acceptance of decommissioned radioactive waste was also identified as a potentially significant impact. These environmental safety impacts would be similar for the proposed project. Implementation of **Mitigation Measure 4.8-1** will reduce potential impacts to less than significant levels. Additionally, as part of the proposed project, the entrance to the facility is equipped with monitors to detect radioactive waste.

The existing Landfill I currently implements a Hazardous Waste Load Program consistent with Title 27 CCR, Section 20220 and 20870 and CFR, Chapter 1. A joint City, County and Waste Management-initiated Household Hazardous Waste facility is currently in operation and is called the “Antelope Valley Environmental Collection Center (AVECC).” This existing ancillary facility is located within the existing parking area (see **Figures 1-4**, Site Plan and **1-5**, Ancillary Facilities within Section 1.0).

#### 4.8.5 CUMULATIVE IMPACTS

The scope of analysis for cumulative impacts for risk of upset/human health is defined as the list of cumulative projects, as outlined in Section 3.5.2.

**Impact 4.8-2** Potential cumulative impact related to increased household waste.

The small quantities of household waste will increase as a result of the continued operation of the proposed expansion. The quantities of non-hazardous waste will also increase and will absorb the relatively small quantities of hazardous waste. The incremental increases in hazardous waste will be offset by the increases in non-hazardous waste and will not result in a significant cumulative impact.

#### 4.8.6 MITIGATION MEASURES

- 4.8-1** The permittee shall establish and maintain a comprehensive waste load checking program, which shall include the following:
- a. All waste hauling vehicles shall be screened at the scales with a radiation detector device acceptable to the Local Enforcement Agency for the presence of radioactive materials.

- b. Sensors capable of detecting volatile organic compounds, acceptable to the Local Enforcement Agency shall be available and used as directed by the Local Enforcement Agency.
- c. A remote television monitor or an alternative procedure acceptable to the Local Enforcement Agency shall be maintained at the scales to visually inspect incoming roll-off type loads and open top vehicles.
- d. The dumping area shall be continuously inspected for hazardous and liquid waste and radioactive waste/materials. This inspection shall be accomplished by equipment operators and spotters who have been trained in an inspection program approved by the Local Enforcement Agency (LEA). The landfill currently complies with the LEA inspection procedures and will continue to comply as required by their SWFP.
- e. Manual inspection of randomly selected refuse loads shall be conducted. The frequency of inspections shall be as directed by the Local Enforcement Agency. The checking program shall be conducted by personnel trained in accordance with a plan approved by the Local Enforcement Agency.

#### **4.8.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

With the implementation of mitigation, potentially significant impacts related to this issue will be reduced to less than significant levels.

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## 5.0 ALTERNATIVES TO THE PROPOSED PROJECT

### 5.1 INTRODUCTION

The State CEQA Guidelines, Section 15126.6(a) requires that an EIR, “Describe a range of reasonable alternatives to the project, or to the location of the project, which would reasonably 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.” Section 15126.6(b) states, “the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.”

Section 15126.6(c) of CEQA provides that an EIR should focus on alternative capable of: feasibly accomplishing the objectives of the proposed project; avoiding any significant adverse environmental effects of a proposed project; or eliminating or reducing potential adverse effects to a level of insignificance. For each alternative, the analysis:

- Briefly describes the alternative;
- Discusses the impacts of the alternative and evaluates the significance of those impacts; and
- Evaluates the alternative relative to the proposed project, specifically addressing project objectives, feasibility, and impacts.

As stated in Section 15126.6(f), “The range of alternatives required in an EIR is governed by the “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.” The key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation.

### 5.2 PROPOSED ALTERNATIVES

The alternatives included herein have been developed as a result of the land planning process as well as through discussion and input from the local lead agency (City of Palmdale). The alternatives to the proposed project that are evaluated and compared in this section are as follows:

- No Project
- Reduced Project (height)
- Reduced Project – Expansion with No Increase in Daily Permitted Tonnage (1,800 tons per day (tpd))
- Alternative Location/Expansion of Lancaster Landfill

During the scoping meeting and after receipt of NOP comment letters, the potential alternatives were discussed with City of Palmdale. These City-recommended alternatives seek to address the significant unavoidable impacts resulting from the proposed project (i.e., air quality, cumulative traffic and aesthetics). The alternatives were also developed to address environmental issues which were believed to be potentially significant concerns of the public and/or agencies. For example, the Reduced Project (height) alternative was proposed to reduce the potential impact (to views from residents north of the landfill and south), identified within the proposed project, related to the height increase. The Reduced Project, Expansion with No Increase in Daily Permitted Tonnage (1,800 tpd) was prepared to address the

unavoidable cumulative air quality impacts resulting from the increased daily tonnage associated with the project.

The following discussion evaluates alternatives to the proposed project. The Alternative Project Summary Matrix, **Table 5-2**, located at the end of this section provides a comparison of alternative projects under consideration. The table includes information pertaining to the three (3) relevant criteria for the determination of whether an alternative should be selected. These criteria are as follows:

1. Failure to meet most of the project objectives;
2. Infeasibility; and
3. Inability to avoid significant environmental impacts.

A brief description of each alternative is provided below. This section evaluates alternatives which may be capable of eliminating, or reducing to a level of significance, adverse impacts associated with the project. Additionally, the alternatives considered environmentally superior to the proposed project are identified.

### **5.2.1 NO PROJECT**

An evaluation of a “No Project” alternative is required by CEQA Guidelines Section 15126(d)(2). Under this alternative, the proposed project would not be implemented and the site would remain in its current status.

The No Project alternative would restrict the proposed expansion/consolidation from connecting Landfills I and II and the added landfill capacity/lifespan would not be realized. The permitted landfills would still retain their current status, and Landfill II would be constructed as it is currently permitted. The increase to 3,600 tpd of waste to be disposed of in the landfill would not occur, as the CUP #93041 permitted net daily tonnage of 1,800 tpd for landfill disposal would be maintained. Additionally, the new proposed ancillary facilities (including the revised frontage road site entrance and construction of the new landfill access road along the R-5 alignment, erosion protection along Anaverde Creek, and power pole relocation) described in Section 3.0 would not be developed.

## **ENVIRONMENTAL ASSESSMENT**

### **Earth Resources**

This alternative would result in similar impacts to the on-site earth resources. The No Project alternative would not diminish the potential impacts related to seismic events, as they would occur regardless of the proposed expansion/consolidation.

### **Air Quality**

The No Project alternative would avoid the air quality impacts, related to truck trips emissions that would be associated with the proposed increase in daily tonnage intake and increased landfill capacity. This alternative would also reduce emissions associated with increased construction and operational equipment, additional excavation and landfill construction, and increased landfill gas generation. These emissions are quantified in **Table 5-1**.

As stated above, the internal paving improvements and new landfill access would not occur under the No Project Alternative. Therefore, the No Project Alternative which allows for the current permitted daily tonnage intake (1,800 net tpd) with no footprint expansion/consolidation or ancillary facility improvements would add more operational PM-10 emissions than the proposed project.

### **Hydrology and Water Quality**

This alternative would reduce the potential project impacts related to increased runoff and surface water quality as 11 fewer acres would be developed as a landfill and 5 fewer acres would be developed as ancillary facilities. Additionally, the proposed flood scour protection for Anaverde Creek would not result with this alternative, as no new development of ancillary facilities would occur. Additionally, from a regional perspective, in light of this alternative, the applicant would not contribute to the flood control project that is to detain the peak flows caused by rainfall events and reduce the potential for down stream flooding. There would be no fair share contribution to the regional improvements with the No Project alternative.

### **Biological Resources**

The No Project alternative would avoid potential impacts related to biological resources as 11 fewer acres would be developed as a landfill and 5 fewer acres would be developed as ancillary facilities. Although no significant impacts were identified with implementation of the project, this alternative would avoid any impacts to plants and animals that could occur within the proposed 200-foot power pole relocation area and new frontage road access and landfill access road (R-5 alignment) as a result of the project. Therefore, the overall impacts would be less compared to the proposed expansion/consolidation project.

### **Noise**

This alternative would avoid some noise impacts related to the proposed expansion, although those impacts were mitigable to less than significant levels. Increased noise impacts related to the increase in daily tonnage intake would not occur. Therefore, overall the impacts would be less compared to the proposed project.

### **Aesthetics/Light and Glare**

This alternative would avoid the potential aesthetics/light and glare impacts associated with the proposed expansion/reconfiguration although those impacts were mitigable to less than significant levels. The height of the permitted Landfill II would not increase from EL3,140 to EL3,200, and the visual character would not change. However, once the two landfills (Landfill I and Landfill II) are filled, the valley between the two landfills would stay prominent. With no transition between Landfills I and II, they could be perceived as more visible. Additionally, the application of interim vegetation (required for the project by **Mitigation Measure 4.6-1**) is not required under the existing permits for Landfills I and II. Therefore, in the absence of the proposed project, the current condition of the existing Landfill I and permitted Landfill II would not benefit from the proposed interim revegetation, as described in detail in Section 4.6 of this EIR and shown on **Figure 4.6-10A**.

**Traffic and Circulation**

This alternative would avoid the project-specific impacts associated with increased truck traffic generation. County CUP #93041 permitted a total maximum of 1,100 truck trips and the proposed project could generate 1,134 truck trips based upon the peak daily tonnage intake of 5,548. Increased truck trips due to the increase in daily tonnage would not occur with this alternative, although no significant impacts associated with the project were identified. While the overall traffic generation impacts would be less compared to the proposed project, this alternative would not include the proposed new frontage road access and new landfill access road (R-5 alignment) and the benefits from this new facility would not be realized. As shown in the Kunzman Associates traffic study, the 2007 cumulative unavoidable impact to the roadway segment of Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road would occur with or without the project traffic, so the No Project Alternative would not avoid this impact.

**Risk of Upset/Human Health**

This alternative would avoid the risk of upset and human health related impact that may emanate from the proposed expansion/consolidation. Although no significant impacts were identified related to risk of upset and human health the landfill life and daily waste intake would increase with the project and therefore the alternative would reduce potential impacts.

**STATUS OF ALTERNATIVE**

The No Project alternative could place a long term constraint on the solid waste disposal system in the City of Palmdale and the region as a whole. The proposed project would increase the life of the landfill beyond the existing and permitted capacity; however, adoption of the No Project alternative would restrict the full use of the site for waste disposal, as the valley between the two landfills is not well suited for any other non landfill use. Although it would be considered environmentally superior (as it would reduce biology, traffic, noise, risk of upset, and air quality impacts) to the proposed project, this alternative does not completely avoid the cumulative unavoidable impacts associated with the proposed project (i.e., traffic, aesthetics, and air quality).

The No Project Alternative would also not implement the beneficial ancillary facilities which include new site access (the Rayburn Road intersect access) and flood scour protection for Anaverde Creek. These facilities were not previously proposed with Landfill II and are not required under the current CUP approved by Los Angeles County for Landfill II.

Additionally, this alternative does not meet a majority of the project objectives (specifically objectives #1-3 and #5-8), as follows:

1. Expansion of the landfill to increase its capacity and life to the maximum extent practical by combining Landfills I and II.
2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.
3. Reconfigure two existing landfills by adding area to connect the landfills and maximize its capacity at this location through efficient use of land space and natural topography.

5. Ensure that landfill access does not occur through existing residential communities.
6. Increase the daily refuse handling capacity to handle anticipated refuse generation rates inclusive of projected population growth in the Antelope Valley without conflicting with adjacent incompatible land uses.
7. Provide additional needed landfill capacity for growth which is consistent with the City’s goals and policies of the General Plan and other relevant documents.
8. Minimize the negative impacts of increased solid waste disposal at the existing landfill through an environmentally sound operation that incorporates current engineering and design techniques.

**5.2.2 REDUCED PROJECT – HEIGHT**

In an effort to reduce the visual impacts associated with the proposed expansion/consolidation project, the City of Palmdale has proposed a reduced height alternative project. The reduced height alternative proposes a height reduction of 20 feet (i.e., 3,180 feet) on the eastern portion of the site (Landfill I). The reduction in height would result in 495,000 cubic yards of reduction in the overall capacity of the landfill. This would reduce the life of the landfill by a little over half a year. The decision to analyze a 20-foot reduction on the eastern portion of the site was based upon the following:

Since the landfill has been and will continue to be completely visible from the south and the east and west to a lesser extent, the focus of the alternative was to reduce any “new views” of the future landfill from the north where it extends above the existing ridgeline. The City of Palmdale General Plan Policy ER 3.1.5, regarding the visual quality of the hillsides within the City is applicable to this alternative. This policy encourages retaining and maintaining the integrity of the natural ridgelines of Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains. This alternative is in compliance with this policy by proposing a reduction in height of the landfill although this height reduction would not be noticeable from the views south of the landfill.

This reduction in height would not alter the aesthetic quality of the site, looking at the landfill from the south and west. With the current project, from the north there is a small area where the future landfill would be visible above the existing ridgeline. However, the extended height would only be visible from a distance (see **Figure 5-1**, Proposed Project versus Reduced Project Line of Sight Impacts). As this alternative proposes to reduce the height, where it would be visible with the proposed project, the aesthetic impact regarding visibility of the landfill beyond the existing ridgeline would be avoided (please refer to **Figure 5-1**, Proposed Project versus Reduced Project Line of Sight Impacts and the aesthetics Section 4.6 of this EIR for the visual simulations of the visibility impacts of the landfill expansion/consolidation).

**ENVIRONMENTAL ASSESSMENT**

**Earth Resources**

This alternative would result in similar impacts to the on-site earth resources. The reduced project alternative would not diminish the potential impacts related to seismic events, as they would occur regardless of the proposed expansion/consolidation.

### **Air Quality**

The reduced project alternative could reduce air quality impacts minimally, as related to the reduction of 495,000 cubic yards of capacity or half a year of landfill life. However, this reduction in terms of air quality analysis is negligible, as the analysis is based on the maximum daily disposal rate, which would not be affected. PM-10 emissions associated with the construction of ancillary facilities would also remain the same as the project. This alternative would not avoid the cumulatively significant air quality impacts associated with the project. Therefore, overall the impacts would be similar compared to the proposed project.

### **Hydrology and Water Quality**

This alternative does not result in any changes in conditions related to runoff and water quality. The proposed reduction in height would not result in creating a quantifiable reduction in runoff and water quality impacts.

### **Biological Resources**

This alternative would result in the same impacts to biological resources as the proposed project.

### **Noise**

The reduced project height alternative could reduce the noise minimally due to the reduction in landfill life by half a year. Like air quality, the noise impacts are analyzed in terms of maximum daily disposal rate and construction impacts associated with ancillary facilities, which would not change under this alternative. Thus, the half a year of shortened landfill life would not have a substantial change in noise impacts. Therefore, this alternative would result in similar impacts compared to the proposed project.

### **Aesthetics/Light and Glare**

The aesthetics section of this EIR identifies issues related to aesthetics impacts of an increased height beyond the existing ridgeline, which introduces some views of the landfill from the north that have not been visible in the past. The proposed expansion/consolidation project would create some visibility impacts for the existing residential uses to the north of the landfill. However, these project impacts were not found to be significant with the incorporation of mitigation. This alternative proposes a reduction in height where the future landfill (i.e., the easternmost portion – Landfill I) would be visible under the proposed project (see **Figure 5-1**, Proposed Project versus Reduced Project Line of Sight Impacts).

Under this alternative, the existing landfill height would not increase above the existing ridgeline, and therefore, would not be visible from the existing residential areas to the north of the site. However, the landfill would still be visible from the east, south, and west regardless of this reduced height alternative. Refer to the Visual Simulation **Figures 4.6-1** through **4.6-10** contained in Section 4.6 of this EIR. Overall, the impacts related to increased height would be reduced with this alternative, however, this alternative would not eliminate the unavoidable cumulative impacts to the visual character of the area and the views south of the landfill from build-out of existing Landfill I and permitted Landfill II.

**Traffic and Circulation**

The reduced project height alternative could reduce traffic impacts minimally, as related to the reduction of 495,000 cubic yards of capacity or a half year of landfill life. However, this reduction in terms of traffic analysis is negligible, as the analysis is based on the maximum daily disposal rate, which would not be affected. This alternative would not avoid the Year 2007 cumulative traffic impacts on the roadway segment of Tierra Subida between 5<sup>th</sup> Street West and Rayburn Road. Therefore, overall the impacts would be the same compared to the proposed project.

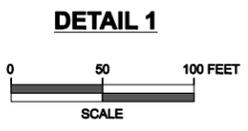
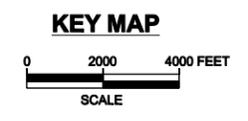
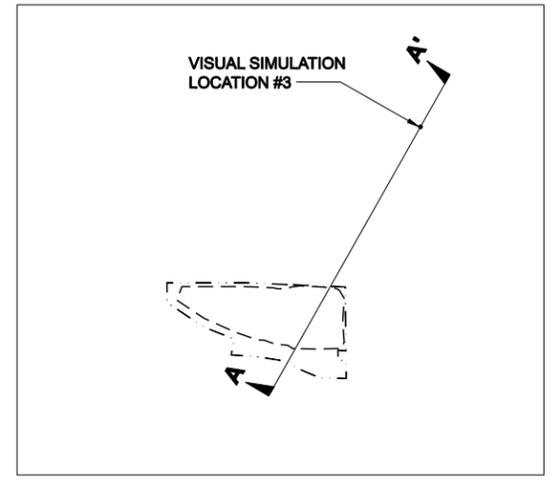
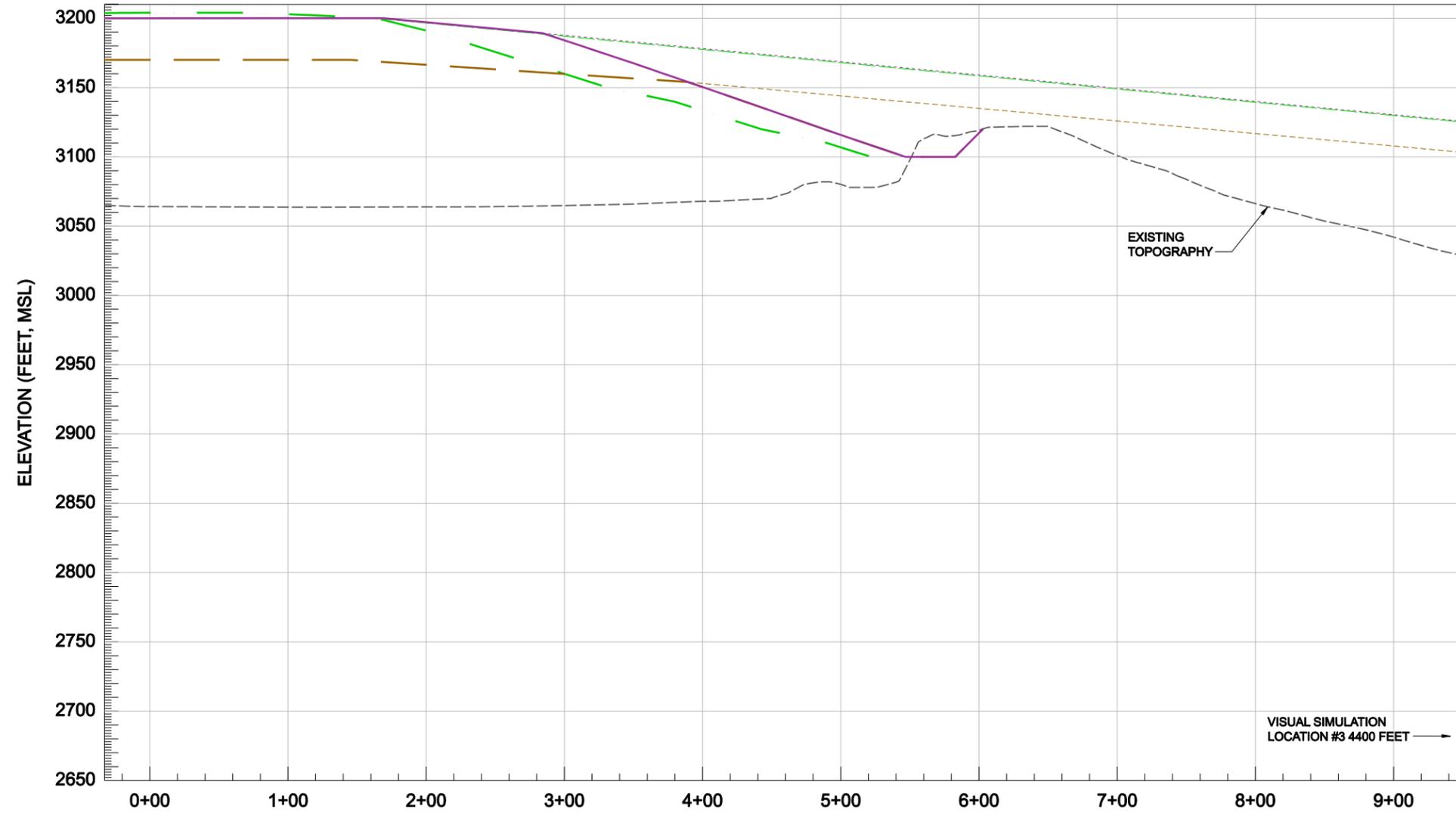
**Risk of Upset/Human Health**

The impacts related to risk of upset and human health would be less than significant after mitigation like the proposed project. Since this alternative would shorten the landfill life by a little over half a year, the potential impacts related to risk of upset and human health would also be shortened with this alternative.

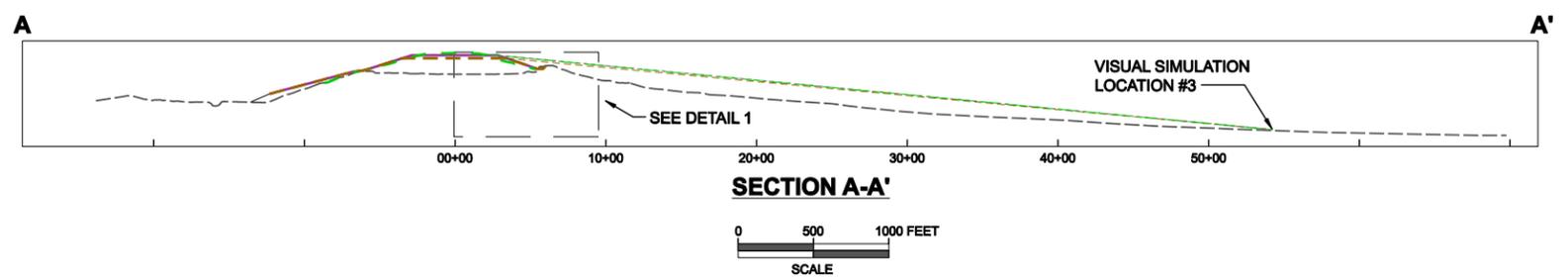
**STATUS OF ALTERNATIVE**

The reduced project (height) alternative compared to the proposed project could reduce impacts north of the landfill. The analysis in Section 4.6 concluded that the aesthetic impacts associated with the proposed project would be reduced to less than significant levels with the incorporation of mitigation measures; however, the cumulative effects of the proposed project in conjunction with the existing Landfill I and permitted Landfill II to the views south of the landfill would remain significant and unavoidable. Adoption of this alternative would reduce the life of the landfill by a little over half a year in comparison to the proposed project. Overall, this alternative is not considered environmentally superior compared to the proposed project. Additionally, the reduced landfill capacity resulting from this alternative does not meet the project objectives (specifically objectives #1 and #2), as follows:

1. Expansion of the landfill to increase its capacity and life to the maximum extent practical by combining Landfills I and II.
2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.



- LEGEND**
- EXISTING TOPOGRAPHY
  - - - PERMITTED LANDFILL (LANDFILL I) - EL. 3204'
  - PROPOSED LANDFILL EXPANSION (LANDFILL I) - EL. 3200'
  - - - REDUCED HEIGHT ALTERNATIVE (LANDFILL I LOWERED 20 VERTICAL FEET) - EL. 3180'



**5.2.3 REDUCED PROJECT – EXPANSION WITH NO INCREASE IN DAILY PERMITTED TONNAGE (1,800 NET TPD)**

In an effort to reduce the cumulatively significant unavoidable impacts which are air quality and traffic, the applicant in conjunction with the City of Palmdale has proposed a reduced project alternative that would be feasible to implement. The primary purpose for proposing this alternative is to reduce and/or avoid the significant unavoidable air quality impacts to emissions generated from the increased daily tonnage for disposal from 1,800 tpd to 3,600 tpd. This impact was identified as significant and unavoidable on a cumulative level. The reduced project alternative would allow for the proposed expansion/consolidation (i.e., 11 acres to the footprint and 5 acres to the facility); however, no increase in daily tonnage would occur.

Under this reduced alternative, the CUP #93041 permitted net daily tonnage of 1,800 tpd for landfill disposal would be maintained. It should be noted that since the truck tonnage capacities have increased since the 1993 CUP approval (for 1,800 net tpd and 3,564 gross tpd), the number of truck trips would actually decrease with this alternative from what was analyzed and approved by Los Angeles County under CUP #93041. Although the same daily tonnage intake would be allowed, more tonnage can be accommodated in the trucks today versus what could be accommodated in 1993 (i.e., 1,100 truck trips would reduce to 864 truck trips if the 1,800 tpd alternative were implemented). The only other unavoidable impact identified in the environmental analysis is the Year 2007 cumulative traffic impact to the LOS on the segment of Tierra Subida between 5<sup>th</sup> Street West and Rayburn Road. Under this reduced daily tonnage alternative, the project would have no contribution to this unavoidable cumulative traffic impact; however, this Year 2007 cumulative impact will occur with or without the project traffic increases according to the traffic study.

The footprint expansion of 11 acres and new consolidation design would help prolong the life of the landfill but would not have any implications in terms of daily tonnage intake. The reduction in daily tonnage intake compared to the proposed project would not avoid all the impacts related to air quality, as construction activities related to on-going construction of cells and the ancillary facilities (i.e., two desilting/stormwater control basins, erosion protection along Anaverde Creek, new frontage road access, additional truck scales, recycling drop-off / transfer center, power pole relocation to north side of property) would occur due to requirements associated with the expansion/consolidation. This alternative would reduce the impacts associated with increased truck traffic and on-road hauling noise, although the proposed project impacts to these issues were found to be less than significant. Other project related impacts such as runoff and water quality, biological resources, earth resources, aesthetics, construction noise, and risk of upset would still result with this alternative. However, the project specific impacts to this resource are all mitigable to less than significant levels.

**ENVIRONMENTAL ASSESSMENT****Earth Resources**

This alternative would result in similar impacts to the on-site earth resources compared to the proposed project. The reduced project daily permitted tonnage would not diminish the potential impacts related to seismic events, as they would occur regardless of the proposed project or this alternative.

**Air Quality**

The No Increased Daily Tonnage (i.e., CUP #93041 permitted net daily tonnage of 1,800 tpd and gross daily tonnage of 3,564 tpd) alternative was prepared to reduce and/or avoid the significant cumulative unavoidable air quality impact of the proposed project related to emissions generated from the increased daily tonnage for disposal. This alternative proposes to maintain the currently permitted daily net tonnage intake of 1,800 tpd into the landfill. As the disposal rate is not increased, the increased emissions associated with the proposed project, would not occur on a daily basis; therefore, reducing the significant cumulative unavoidable impacts.

Please refer to **Table 5-1**, below, that quantifies emission increases over existing conditions from both the 1,800 tpd alternative and the proposed project. AS shown in the table, cumulative PM-10 emissions would still exceed the AVAQMD threshold and therefore would remain significant and unavoidable. Landfill gas emissions were not required to be quantified in the 1993 CEQA analysis, and therefore emissions related to landfill gas were not identified for the prior CUP project. The reduced daily emissions from this alternative would continue to occur over a longer period of time due to the 11-acre refuse footprint expansion and extending the life of the landfill to 2037 (per table 3-3 the proposed project at 3,600 tpd provides 16.5 years of life, therefore the reduced daily tonnage of 1,800 tpd would accommodate 33 years of landfill life, ie to the year 2037). It should also be noted that the reduced tonnage from the proposed project (i.e., 1,800 tpd) would still require disposal, all be it at another location.

**TABLE 5-1  
TOTAL DAILY OPERATION EMISSIONS COMPARISON (pounds/day)<sup>1</sup>**

<b>Existing Operations (2005)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
On-site Equipment	4.7	67.8	24.6	3.0	10.6
Off-site Travel	15.0	60.5	145.1	7.7	0.7
Flare Combustion	0.5	9.8	0.5	0.3	4.0
Internal Travel Fugitive Dust	-	-	-	924.4	-
Fugitive LFG	35.9	-	-	-	-
<b>TOTAL</b>	<b>56.1</b>	<b>138.1</b>	<b>170.2</b>	<b>935.4</b>	<b>15.3</b>

<b>Future Operations (2020)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
On-site Equipment <sup>1</sup>	3.8	54.2	19.7	2.4	8.5
Off-site Travel <sup>2</sup>	6.0	24.2	58.0	19.8	Negl.
Flare Combustion	9.9	92.3	441.4	42.6	17.0
Internal Travel Fugitive Dust (with Peak TPD intake)	-	-	-	938.6	-
Fugitive LFG	116.7	-	-	-	-
<b>CUMULATIVE IMPACT TOTAL</b>	<b>136.4</b>	<b>170.7</b>	<b>519.1</b>	<b>1,003.4</b>	<b>25.5</b>
<i>Project Impact</i>	<i>+80.3</i>	<i>+32.6</i>	<i>+348.9</i>	<i>+68</i>	<i>+10.2</i>
Significance Criteria	137.0	137.0	548.0	82.0	137.0

<b>Reduced Project/1,800 TPD Alternative (2037)</b>	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>PM-10</b>	<b>SO<sub>x</sub></b>
On-site Equipment <sup>3</sup>	2.8	40.2	14.8	1.8	6.4
On-road Travel <sup>4</sup>	3.0	12.1	29.0	1.5	1.4
Flare Combustion <sup>2</sup>	8.1	74.9	358.5	34.6	13.8
Internal Travel Fugitive Dust <sup>6</sup>	-	-	-	403.7	-
Fugitive LFG <sup>7</sup>	95.0	-	-	-	-
<b>CUMULATIVE IMPACT TOTAL</b>	<b>108.9</b>	<b>127.7</b>	<b>402.3</b>	<b>441.6</b>	<b>21.6</b>
<i>Project Impact</i>	<i>+52.8</i>	<i>-10.4</i>	<i>+232.1</i>	<i>-493.8</i>	<i>+6.3</i>
Significance Criteria	137.0	137.0	548.0	82.0	137.0

<sup>1</sup>20 percent reduction from 2005 (with project) for ROG/NOx/CO/PM-10.

<sup>2</sup>60 percent reduction from 2005 (with project) for ROG/NOx/CO.

<sup>3</sup>40 percent reduction from 2005 (with project) for ROG/NOx/CO/PM-10.

<sup>4</sup>80 percent reduction from 2005 (with project) for ROG/NOx/CO.

<sup>5</sup>Permit limit @ 1,388 scfm x 1,600 ÷ 1,388

<sup>6</sup>PM-10 was calculated by dividing the emissions at 3,600 TPD by two

<sup>7</sup>98 scfm methane x 109 lb/day ROG per 112.5 scfm methane.

Short-term construction air quality impacts would still occur as a result of the refuse footprint expansion of 11 acres, on-going cell construction, and construction of ancillary facilities (i.e., two desilting/stormwater control basins, erosion protection along Anaverde Creek, new frontage road access, additional truck scales, recycling drop-off/transfer center, power pole relocation to south side of property). However, these impacts would be mitigable to less than significant levels as with the proposed project.

The No Increased Daily Tonnage alternative is to allow for the consolidation of the two existing disposal units, but to limit the average daily refuse placement at the currently permitted maximum of 1,800 tons per day. This alternative would delay final closure because of full capacity by almost 20 years. It would increase average daily traffic, but not to the same extent as the proposed 3,613 ton per day project. The GHG impact from the 1,800 TPD alternative was calculated using the following assumptions:

1. Off-road sources-one additional compactor was assumed necessary operating at 356 HP for eight hours.
2. On-road sources-on road traffic was assumed to grow at an intermediate rate between projected future versus existing traffic using the following multiplier:

$$\text{Existing VMT} + (1800-1372)/(3613-1372) \times (\text{Future VMT} - \text{Existing VMT})$$

With the following projected VMT and associated fuel use:

	<b>VMT</b>	<b>Fuel Use</b>
<b>Surface Street Trucks (D)</b>	2,343	390
<b>Freeway Trucks (D)</b>	1,128	188
<b>Auto and Small Trucks (G)</b>	1,416	103

3. LFG Production will increase more slowly. Peak production of 1,600 CFM will be achieved in 2040. As assumed for the proposed project, the methane percentage was assumed at 55 percent and the LFG capture efficiency was assumed to be 90 percent.

Daily and annual GHG emissions for this alternative, compared to existing and proposed disposal scenarios, are as follows:

<b>Daily (MT/day)</b>	<b>Baseline 2006-1372 TPD</b>	<b>Alternative 2040-1800 TPD</b>
<b>On-Road Trucks</b>	4.9	5.9
<b>On-Road Gasoline</b>	0.8	0.9
<b>Off-Road Equipment</b>	6.0	8.0
<b>Oxidized CH4</b>	2.5	2.3
<b>Fugitive CH4 in Flare</b>	1.5	4.0
<b>Total Non-Biogenic</b>	15.7	21.1

<b>Annual (MT/year)</b>	<b>Baseline 2006-1372 TPD</b>	<b>Alternative 2040-1800 TPD</b>
<b>Combustion Engines (306 days)</b>	3,580	4,529
<b>Non-Biogenic Landfill (365 days)</b>	1,460	2,300
<b>Total</b>	5,040	6,829

The 1,800 TPD alternative would not cause the most stringent candidate significance threshold of 10,000 MT/year to be exceeded, and it would not interfere with programs, plans and policies to reduce GHG emissions to mandated levels. The GHG impact of the 1,800 TPD alternative is considered less than significant.

**Hydrology and Water Quality**

This alternative does not result in any changes in conditions related to runoff and water quality compared to the proposed project, as this alternative would not affect size and design of the expansion/consolidation area. The construction activities associated with the 11-acre footprint and 5-acre facility expansion, construction of other ancillary facilities, and the construction of a new frontage road access would still occur. Construction activities would still result in increased runoff and potential impacts to regional water quality. Therefore, similar runoff and water quality impacts would result with this alternative, although the impacts would be mitigable to a less than significant level.

**Biological Resources**

This alternative would result in the same impacts to biological resources, as it would not impact the size of the expansion/consolidation area, but only the daily tonnage intake. Additionally, impacts associated with construction activities related to on-going construction of cells, and the ancillary facilities (i.e., two desilting/stormwater control basins, erosion protection along Anaverde Creek, revised site entrance , additional truck scales, recycling drop-off/transfer center, and power pole relocation to south side of property), would occur regardless of this alternative. The alternative’s impacts to biological resources would be similar to the project (i.e., not significant or mitigated to less than significant levels). The impacts would however continue to occur over a longer period of time due to the fact that the additional capacity gained from the 11-acre refuse footprint expansion would be filled in at a slower rate.

### Noise

As the daily disposal rate remains at its permitted rate of 1,800 tpd, the on-road truck hauling noise associated with the increased disposal rate would not occur. As stated previously, the number of truck trips would actually decrease with this alternative from what was analyzed and approved by Los Angeles County under CUP #93041. Although the same daily tonnage intake would be allowed, more tonnage can be accommodated in the trucks today versus what could be accommodated in 1993. Based on the Kunzman Associates' traffic study (Appendix G of this EIR), the Reduced Alternative with its gross daily intake of 3,564 would generate approximately 864 truck trips versus the 1,134 truck trips generated under the project peak daily intake of 5,548 tpd. Under this alternative, on-road truck hauling noise from 270 fewer truck trips would occur although these noise impacts were found to be less than significant under the project.

Although short-term construction related noise impacts, including construction of disposal cells, construction of ancillary facilities, including the new site access (Rayburn Road Intersect) would still occur, these impacts would be mitigable to less than significant levels.

Long-term noise impacts related to daily operation of the landfill (including the increase in receipt of refuse hours) and on-going construction of disposal cells would still occur with this alternative. Although these daily impacts would be less compared to the proposed project (due to less daily tonnage to be disposed of), they would continue to occur over a longer period of time due to the 11-acre refuse footprint expansion which would extend the life of the landfill to 2037. The mitigation measure required under the proposed project would still be applicable to this alternative to reduce the impacts to less than significant levels.

### Aesthetics/Light and Glare

This alternative would result in the same aesthetic impacts related to increased height of the landfill, as this alternative proposes an expansion of 11-acres and an increase in height of the landfill; although no increase in daily tonnage intake would occur. This alternative would result in similar visibility impacts for the existing residential uses to the north and south of the landfill. Litter impacts would be slightly less associated with the lower daily disposal tonnage, and these impacts are mitigated to less than significant levels. The light and glare impacts would not be noticeably different with reduced project alternative, as the lighting associated with the proposed ancillary facilities would still occur. However, as with the proposed project, these impacts would not be significant. The mitigation measures required under the proposed project would still be applicable to this alternative to reduce the project specific impacts to less than significant levels; however, this alternative would not eliminate the unavoidable cumulative impacts to the visual character of the area and the views south of the landfill from build-out of existing Landfill I and permitted Landfill II.

### Traffic and Circulation

This alternative would reduce the truck traffic impacts compared to the proposed project, as the daily tonnage intake would not increase over what is currently permitted. Truck traffic associated with this alternative would increase over what is currently being generated at the landfill (i.e., 416 truck trips associated with the disposal of 1,372 tpd). This alternative of 1,800 net tpd of waste intake was analyzed in the April 1993 traffic study and September 1993 supplemental analysis. Based on the study, the net daily intake of 1,800 tpd for landfill disposal would result in a total of 920 daily trips, including 560 truck

trips and 360 employee trips. Based upon the total maximum intake of 3,564 tpd, the project would result in a total of 1,100 truck trips and 360 employee trips.

As stated previously, it should be noted that since the truck tonnage capacities have increased since the 1993 CUP approval (for 1,800 net tpd and 3,564 gross tpd), the number of truck trips would actually decrease from what was analyzed and approved by CUP #93041 (i.e., 1,100 truck trips reduced to 864 truck trips) if this alternative were implemented today. Thus, the Reduce Alternative with its gross daily intake of 3,564 tpd would generate approximately 864 truck trips versus the 1,134 truck trips generated under the project peak daily intake of 5,548 tpd. This alternative would not contribute to the unavoidable Year 2007 cumulative traffic impact to the LOS on the segment of Tierra Subida between 5<sup>th</sup> Street West and Rayburn Road; however, this Year 2007 cumulative impact will occur with or without project traffic increase according to the traffic study.

Overall, the traffic impacts would be reduced when compared to the proposed project.

### **Risk of Upset/Human Health**

The impacts related to risk of upset and human health would be less than significant after mitigation like the proposed project. However, without the increase in daily disposal tonnage, the potential for accidental receipt of hazardous waste would also lessen. Therefore, potential impacts related to risk of upset and human health would be considered less when compared to the proposed project.

### **STATUS OF ALTERNATIVE**

The reduced project (daily permitted tonnage intake) alternative compared to the proposed project is more desirable in terms of reducing the cumulative air quality and traffic impacts. Based upon the results of **Table 5-1**, above, this alternative would generate less emissions compared to the project. However, the cumulative emission increase impact of the existing operation along with the incremental increases associated with the reduced project alternative and other cumulative growth and projects in the area, the emission increases are still considered cumulatively significant. Therefore, the alternative would not avoid the unavoidable impact associated with NO<sub>x</sub> and PM-10 emissions in an air basin which is non-attainment for PM-10 and ozone. Additionally, this alternative would reduce the project's contribution to the unavoidable 2007 cumulative impact to the LOS on the segment of Tierra Subida between 5<sup>th</sup> Street West and Rayburn Road; however, this Year 2007 cumulative impact will occur with or without project traffic increase according to the traffic study. Although the reduced project alternative is considered environmentally superior to the proposed project, this alternative does not meet the project objectives (specifically objective #2, #6 and #7), as follows:

2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.
6. Increase the daily refuse handling capacity to handle anticipated refuse generation rates inclusive of projected population growth in the Antelope Valley without conflicting with adjacent incompatible land uses.
7. Provide additional needed landfill capacity for growth which is consistent with the City's goals and policies of the General Plan and other relevant documents.

**5.2.4 ALTERNATIVE LOCATION/EXPANSION OF THE LANCASTER LANDFILL**

Another alternative proposed based upon discussions with the City is the alternative of expanding the Lancaster Landfill instead of the Antelope Valley Public Landfill. The Lancaster Landfill and Recycling Center (LLRC) is also owned and operated by Waste Management Corporation (WMC) and is operating as a Class III (non-hazardous municipal solid waste) sanitary landfill facility.

The LLRC facility (276 total acres) is located about 2 miles northeast of the City of Lancaster in an unincorporated area of Los Angeles County. The existing permitted landfill footprint is 209 acres and is currently permitted to accept 1,700 tons per day of municipal solid waste. Of the 209 acres, 80 acres is an existing unlined landfill. All future disposal areas will be constructed with a liner system that meets State and Federal regulations. As of the most recent topographic fly over (November 2003), the landfill has a remaining refuse capacity of 19,281,000cy. In June 2003 Waste Management submitted an application to the Los Angeles County Department of Planning to increase the daily "landfilled" tonnage limit to 3,000 tons per day. The focused environmental impact analysis is currently being prepared by Keeton Kreitzer Consulting.

As discussed in Sections 3.3.1 and 3.3.2, the Antelope Valley and County of Los Angeles need additional daily and total disposal capacity to meet projected growth requirements. If AVPL is not expanded, a long term shortfall of disposal capacity would occur. In order to satisfy these requirements the LLRC would require a significant airspace expansion and an additional increase in the daily disposal limit. The expansion would consist of a vertical and lateral expansion of 12,400,000 cy that would require an additional 75 acres for a landfill footprint and 25 acres for ancillary facilities and buffers. The maximum daily limit for disposal would also need to be increased to 4,800 (i.e. 1,800 for AVPL and 3,000 for LLRC) tons per day. This alternative would be technically feasible as long as the necessary property can be acquired and the expansion was permitted by the County of Los Angeles.

**ENVIRONMENTAL ASSESSMENT****Earth Resources**

The LLRC is further from the San Andreas and not in an Alquist Priolo zone. However, both sites are in active seismic zones and will require mitigation and design measures to ensure regulatory compliance which will result in less than significant impacts.

Soil conditions at LLRC consist principally of sand, silty sand, and sandy silt. No expansive soils are anticipated. As a result, project impacts due to expansive soils are not a concern at the alternative site. Potential impacts related to expansive soils were mitigated to less than significant levels with design/construction measures at the AVPL.

**Air Quality**

Implementation of the LLRC alternative would require significant changes to operational and physical characteristics of the landfill that could impact air quality. The changes include:

- Increased traffic;
- Increased construction and operational equipment;
- Additional excavation and landfill construction; and
- Increased landfill gas generation.

Traffic impacts would be transferred from the AVPL to the LLRC. The impacts include solid waste truck traffic and increase in employees required to operate the site. The 1,800 tons per day of refuse will be transported in 216 additional trucks which equates to 432 additional truck trips. With respect to maximum combined total loading, including recyclables, a daily tonnage of 2,774 would be transported in 399 additional trucks which convert to 798 additional truck trips. The increased distance from AVPL to LLRC of 16 miles would increase the total number of miles driven within the air basin.

The operating equipment required to manage and dispose of an additional 1,800 tons per day will be transferred from the AVPL to the LLRC. An additional scraper will be required at the LLRC to carry soil for daily and intermediate cover.

Construction of the LLRC to achieve an additional 12,400,000 cubic yards of airspace capacity will result in more impacts than AVPL. As stated previously, the airspace expansion of LLRC will require an additional 75 acres of landfill footprint and an additional 25 acres of disturbance for ancillary facilities and buffer. This compares to the 11 acres required to obtain the same airspace as the AVPL. In addition, preliminary estimates indicate that 4,500,000 cubic yards of soil excavation is required to construct this airspace compared to 1,000,000 cubic yard of soil excavation at AVPL. The additional emissions generated by heavy construction equipment and fugitive dust emissions from onsite travel could potentially be significant.

The quantity of gas generated by a landfill is principally a result of the total amount of degradable waste. Since this alternative transfers the expanded airspace from AVPL to LLRC, an equivalent increase of total gas generated should be expected. The increased landfill gas flows will require an additional flare to control emissions and odors. However, the increase in flare and fugitive gas emissions should be similar for both alternatives. The location of the emissions within the Mojave Desert air basin would be transferred.

The air basin, which has been designated non-attainment for ozone and PM-10, will receive similar emission increases under this alternative or the project. This is due to the fact that the total daily tonnage of waste to be disposed would increase at the LLRC to accommodate the increase which would occur at the AVPL under the proposed project. Because no feasible mitigation measures are available to offset the cumulative air quality impacts, they will remain significant, as with the proposed project.

### **Hydrology and Water Quality**

The LLRC consists of an eastern and western fill area that is separated by a County Road. Both fill areas are located within the Antelope Valley groundwater basin. In the area of LLRC, there are two major aquifers, the unconfined upper "Principal aquifer" and the confined lower "Deep aquifer" (Leighton and Phillips, 2003). These two aquifers are separated by a fine-grained lacustrine deposit that consists principally of plastic clay. Regional groundwater flow of the Principal aquifer in the area is towards a cluster of irrigation wells. There are three other privately-owned production wells used for drinking water located within a one-mile radius of LLRC.

The Principal aquifer chemistry is principally calcium bicarbonate with total solids in recent samples ranging from 150 to 170 milligrams per liter. LLRC was in corrective action until 2003 to remedy the presence of volatile organic compounds that were present beneath the unlined portion of the landfill. This

groundwater impact was caused by migration of landfill gas. Currently, 60 acre-feet of groundwater is pumped per year for construction and dust control uses.

Hydrological impacts associated with the development of LLRC have been evaluated and a surface drainage control plan developed to ensure that no significant hydrological impacts will occur. The plan includes system of perimeter ditches and stormwater basins to collect and slowly discharge stormwater. A blue line watercourse runs through the eastern fill area of the LLRC. Under the LLRC expanded tonnage request, off-site run-on from the tributary drainage area (including the blue line water course will be diverted by an earthen interceptor berm.

Additionally, this alternative is located above an aquifer that is used for commercial and agricultural purposes. Any additional lateral expansion of this site will be constructed with liner systems that are protective of the groundwater environment. Although history has verified there is very little risk of groundwater contamination at the LLRC, the isolated, poor quality, groundwater aquifer beneath the AVPL provides for a better alternative as the groundwater aquifer underlying the AVPL has been recognized as an extremely poor brackish water source not capable of being used for residential, commercial or agricultural purposes.

An expansion of the LLRC will principally be lateral. Although the proposed flood scour protection system for Anaverde Creek would not be required under this alternative, additional diversion of the blue-line water course would be required. Future development south of the LLRC will increase the intensity of stormwater flows. Due to the fact that the larger footprint of the landfill (i.e., 75-acre lateral expansion) will require larger diversion structures and flood control mechanisms, the potential for post-development hydrological impacts are considered greater under this alternative.

Based upon the above discussion, the impacts related to groundwater quality would be considered greater with this alternative. The groundwater regime at AVPL is isolated between the San Andreas and Little Rock Faults. What groundwater is present is of poor quality and of little to no commercial value.

### **Biological Resources**

As stated above, the LLRC would require an additional 75 acres for landfill footprint and 25 acres for ancillary facilities and buffers. The expansion would consist of a vertical and lateral expansion of 12,400,000 cy. Due to these expansion requirements, the alternative project would result in the removal of additional acres of Joshua Tree Woodland Habitat and additional Joshua Trees. The project would also result in the removal of additional acres of disturbed shadscale scrub habitat. Removal of habitat will require additional mitigation measures for the project to have less than significant impact.

As stated in Section 4.4, the expansion area at AVPL between Landfills I and II will have less than significant impacts on biological resources after mitigation. This area is currently disturbed due to Landfill I construction and operations. The principal impact will result due to construction of a new frontage road access and the new landfill access road along the R-5 alignment. The construction of new frontage road will disturb approximately 100 Junipers and 20 Joshua trees contained within two clusters. Impacts can be mitigated to less than significant.

Additionally, this expansion alternative has a potential to attract an increased number of pest species, which could increase predatory pressure on newly hatched off-spring of the federally threatened Desert Tortoise. This information is based upon the original biological survey (Appendix E) conducted by

David A. Mullan and the original LLRC project EIR SCH #1993101036, dated April 1997. Therefore, the overall biological resources impacts would be greater compared to the Antelope Valley Public Landfill project.

### Noise

This alternative would create a short-term impact on ambient noise levels due to construction activities and additional traffic will result in increased noise levels in the surrounding areas. The area surrounding the LLRC property is rural with some scattered residential uses located within one mile of the site. Like the proposed project, traffic noise on the nearby roadways will be the dominant noise source. Increased traffic to the site will principally be along SR 14 exiting Avenue H. A number of residential developments are located along Avenue H that will be subjected to increased truck traffic. Overall, the impacts would be comparable to the proposed project.

### Aesthetics/Light and Glare

The LLRC is located within the basin of the Antelope Valley High Desert. The basin is a predominantly flat expansive topography surrounded by distant hills and mountains. The local topography slopes to the northwest at 15 to 20 feet per mile. The current landfill is readily visible from all directions for several miles where line-of-sight is not broken by visual barriers. As with the project, no significant impacts due to light, glare or litter are anticipated with implementation of litter mitigation.

In contrast the AVPL project is visually evident principally from the southerly direction. As demonstrated in Section 4.6, the ridgeline provides a natural screen from views located to the north of the project.

There are no structures within 1,000 feet of the LLRC alternative landfill boundary. There are some scattered residential uses found within a one mile radius of the site. The nearest structure is a small radio transmitter station approximately one-quarter mile west of the existing landfill. The proposed LLRC alternative expansion would require a 75-acre refuse footprint expansion and a 25-acre expansion for ancillary facilities and buffers along with an increase the height of the landfill from 2,395 feet to 2,420 feet (a 25-foot increase). However, given the existing conditions of the site and surrounding area, the project specific aesthetic impacts are anticipated to be less than significant, which is the same conclusion for the proposed project. Additionally, with this alternative, aesthetic impacts associated with the increased height of Landfill II would be avoided at the Antelope Valley Public Landfill. However, in the absence of the proposed project, the current condition of the existing Landfill I and permitted Landfill II would not benefit from the proposed interim revegetation, as described in detail in Section 4.6 of this EIR and shown on **Figure 4.6-10A**.

### Traffic and Circulation

A recent traffic study conducted for the LLRC current permit request investigated the access and circulation network's ability to accept traffic generated by the daily disposal increase to 3,000 tons per day. The investigation focused on the capacity of six key intersections, pavement integrity along four roadways surrounding the project site, and capacity of SR-14. The principal route for additional traffic to the site was from SR-14 along Avenue H, Division Street, and Avenue F.

As shown on **Table 5-2**, all intersections analyzed for cumulative impacts will remain at a LOS of A with virtually no ICU increase during peak hour levels of service. The addition of 432 truck trips associated with another 1,800 tons per day of solid waste from this alternative will not materially impact the levels of service for these intersections. These trucks will be spread out during the course of an operating day.

Short-term traffic impacts due to construction were not analyzed for this study as the LLRC's current request consists solely of an increase in daily tonnage intake. A lateral expansion to LLRC will require additional construction traffic. Impacts for LLRC compared to AVPL should be greater considering the greater amount of construction required (i.e., 75-acre refuse footprint expansion and a 25-acre expansion for ancillary facilities).

While the overall cumulative LOS were determined to be adequate, the traffic study conducted for the current LLRC tonnage increase to 3,000 tpd identified inadequacies related to pavement design of Avenue F between Division Street and 10<sup>th</sup> Street East and 10<sup>th</sup> Street East between Avenue F and Avenue G. These inadequacies would be further degraded with an additional 1,800 tpd (and associated truck trips) added in order to accommodate the City CUP request for the AVPL.

It is anticipated that the increase in traffic occurring as a result of the proposed expansion will exacerbate the existing roadway pavement conditions along those two roadway segments. In addition project related traffic will also contribute to the degradation of the roadway pavement conditions at Avenue F between Division Street and 10<sup>th</sup> Street East without the extension of Avenue F, which is forecast to exceed the traffic index for that roadway segment and would therefore be a significant impact. The required mitigations/improvements for these roadways are considered more extensive than what would be required under the proposed project. Therefore, the traffic related impacts are considered greater with this alternative than with the proposed project.

As shown in the Kunzman Associates traffic study, the 2007 cumulative unavoidable impact to the roadway segment of Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road would occur with or without the project traffic, so the Alternative Location LLRC would not avoid this impact.

### **Risk of Upset/Human Health**

Hazardous waste materials will not be accepted at the Lancaster Landfill facility; however, insignificant quantities of hazardous materials may be disposed of even though the inspection procedures are strictly enforced. The potential also exists for radioactive waste to be disposed of at the Lancaster Landfill. Therefore, the impacts from Risk of Upset/Human Health are similar to the proposed expansion of the Antelope Valley Public Landfill.

**TABLE 5-2  
LANCASTER LANDFILL  
YEAR 2004 CUMULATIVE PLUS PROJECT INTERSECTION PEAK HOUR LEVEL OF SERVICE**

Intersection	Peak Hour	Year 2004 Cumulative Base			Year 2004 Cumulative Project (with Avenue F Extension)				Year 2004 Cumulative Project (without Avenue F Extension)			
		ICU	LOS	Poor LOS?	ICU	LOS	ICU Increase	Sign. Impact?	ICU	LOS	ICU Increase	Sign. Impact?
1. Avenue F @ SR-14 SB Ramps	AM	0.16	A	no	0.16	A	0.00	no	0.16	A	0.00	no
	PM	0.25	A	no	0.25	A	0.00	no	0.25	A	0.00	no
2. Avenue F @ SR-14 NB Ramps	AM	0.17	A	no	0.18	A	0.01	no	0.17	A	0.00	no
	PM	0.24	A	no	0.24	A	0.00	no	0.24	A	0.00	no
3. Avenue G @ SR-14 SB Ramps	AM	0.13	A	no	0.13	A	0.00	no	0.13	A	0.00	no
	PM	0.13	A	no	0.13	A	0.00	no	0.13	A	0.00	no
4. Avenue G @ SR-14 NB Ramps	AM	0.15	A	no	0.15	A	0.00	no	0.15	A	0.00	no
	PM	0.16	A	no	0.15	A	0.00	no	0.16	A	0.00	no
5. Avenue H @ SR-14 SB Ramps	AM	0.24	A	no	0.24	A	0.00	no	0.24	A	0.00	no
	PM	0.26	A	no	0.26	A	0.00	no	0.26	A	0.00	no
6. Avenue H @ SR-14 NB Ramps	AM	0.24	A	no	0.24	A	0.00	no	0.25	A	0.01	no
	PM	0.26	A	no	0.27	A	0.01	no	0.27	A	0.01	no

Source: Linscott Law & Greenspan Engineers (December 23, 2003)

Note:

- (a) All analyzed intersections are currently stop-controlled, except for Avenue H at SR-14 NB ramps. Based upon County of Los Angeles traffic study guidelines, these intersections were analyzed as if they were signalized.

### STATUS OF ALTERNATIVE

The expansion of Lancaster Landfill is not an environmentally superior alternative when impact comparisons are made. This alternative would not avoid the significant unavoidable air quality and cumulative traffic impacts associated with the proposed project. It would also result in potentially greater groundwater quality, air quality, traffic, and biological resources impacts. By avoiding the expansion/consolidation of the Antelope Valley Public Landfill, the overall landfill capacity for the City of Palmdale will be reduced. Additionally, this alternative would restrict the full use of the Antelope Valley Public Landfill site for waste disposal, as the valley between the two landfills is not well suited for any other use. This alternative does not meet seven of the eight project objectives as follows:

1. Expansion of the landfill to increase its capacity and life to the maximum extent practical by combining Landfills I and II.
2. Increase the existing operations (i.e., increase the daily intake of solid waste and hours of operation) to serve the future disposal needs of Palmdale and surrounding area without constructing new landfill and new ancillary facilities elsewhere.
3. Allowing expansion of the landfill in a relatively isolated area that efficiently utilizes land space and natural topography. Reconfigure two existing landfills by adding area to connect the landfills and maximize its capacity at this location through efficient use of land space and natural topography.
4. Continue to support the implementation of residential and commercial recycling programs and a household hazardous waste program for the Antelope Valley.
5. Ensure that landfill access does not occur through existing residential communities.
7. Provide additional needed landfill capacity for growth which is consistent with the City's goals and policies of the General Plan and other relevant documents.
8. Minimize the negative impacts of increased solid waste disposal at the existing landfill through an environmentally sound operation that incorporates current engineering and design techniques.

This alternative is not considered environmental superior to the proposed project and therefore should not remain under consideration.

### 5.3 IDENTIFICATION OF THE ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified. If the No Project Alternative is the environmentally superior alternative, the EIR must select an environmentally superior alternative from among the development alternatives. This EIR's criteria for selection of the environmentally superior alternative are based upon CEQA's requirement that the environmentally superior alternative be selected from a range of reasonable alternatives that could feasibly attain the basic objectives of the project.

Accordingly, as shown in **Table 5-3**, the Reduced Project, Expansion with No Increase in Daily Permitted Tonnage (1,800 tpd) Alternative would best represent the environmentally superior alternative. It would not however, avoid all of the significant cumulative unavoidable impacts associated with the project and other projects combined, nor would it meet all of the project objectives.

**TABLE 5-3  
ALTERNATIVE PROJECT SUMMARY MATRIX**

<b>Alternative Determination Criteria</b>	<b>Meet Project Objectives</b>	<b>Reduce/Avoid Significant Environmental Impacts</b>
No Project	This alternative does not meet seven (7) of the eight (8) project objectives as outlined in Section 5.2.1 above.	Although the no project alternative is considered environmentally superior to the proposed project, this alternative does not substantially lessen the impacts associated with the proposed project. The alternative would reduce but not avoid the unavoidable impact associated with cumulative air emission impacts and Year 2007 cumulative traffic impacts.
Reduced Project – Height	This alternative does not meet project objectives #1 and #2, as outlined in Section 5.2.2, above.	The reduced height project alternative is not considered environmentally superior to the proposed project. The alternative would not reduce or avoid the unavoidable impact associated with cumulative air emission impacts, cumulative aesthetics impacts, and Year 2007 cumulative traffic impacts.
Reduced Project – Expansion with No Increase in Daily Permitted Tonnage – 1,800 net tpd	This alternative does not meet project objectives #2, #6, and #7, as outlined in Section 5.2.3, above.	Although this alternative is considered environmentally superior to the proposed project, the alternative would reduce but not avoid the unavoidable impact associated with cumulative air emission impacts, cumulative aesthetics impacts, and Year 2007 cumulative traffic impacts.
Expansion of the Lancaster Landfill	This alternative does not meet seven of the eight (8) project objectives outlined in Section 5.2.4 above.	This alternative would not reduce or avoid the unavoidable impacts of the proposed project. It would create potentially greater groundwater quality, traffic, and biological resources impacts. This alternative is not considered environmental superior to the proposed project and therefore should not remain under consideration.

**6.0 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED**

CEQA Guidelines indicate that this section should discuss all significant irreversible environmental changes, which would be involved in the proposed action, including such aspects as use of nonrenewable resources or large commitments of resources. The 1991 Draft EIR and 1992 certified EIR for Landfill II identified cumulative air quality as significant and unavoidable.

The proposed project along with regional growth and other developments in the area will result in a significant cumulative air quality impact. As shown in **Table 4.2-6**, the increases in NO<sub>x</sub> and PM-10 due to the existing landfill operation combined with the proposed project increase exceed the AVAQMD thresholds and are considered significant and unavoidable. The Mojave Air Basin is non-attainment for ozone and PM-10. ROG and NO<sub>x</sub> are ozone formation precursor compounds. Any increase in emissions, even at below-threshold levels will retard attainment of applicable standards. Mitigation measures are proposed; however, the impact remains significant and unavoidable.

Additionally, the cumulative impacts of the existing landfill, currently permitted landfill, and various physical components of the expansion/reconfiguration project, including the 60-foot height increase, the proposed landfill access road and power pole relocation and the increased size (+11 acres of refuse disposal area) to fill in the 400-foot gap between the existing and permitted landfills would have a significant impact to the existing visual character of the area and the views south of the landfill (see **Figure 4.6-10**). While the interim revegetation required by **Mitigation Measure 4.6-1** helps to reduce the visual impacts (see **Figure 4.6-10A**), the cumulative visual effects of the proposed expansion and new access road along with the existing Landfill I and permitted Landfill II are considered significant and unavoidable.

Finally, under the cumulative Year 2007 volume to capacity ratios, there is potential impact to LOS for Tierra Subida Avenue between 5<sup>th</sup> Street West and Rayburn Road for Year 2007 without project and with project traffic conditions. Although project's contribution to cumulative impact is less than significant with mitigation, the cumulative impact remains significant and unavoidable. This significant cumulative impact will remain until such time that Tierra Subida is widened to its ultimate General Plan designation.

Since the proposed project in conjunction with cumulative projects will result in significant unavoidable air quality and traffic impacts, a Statement of Overriding Consideration, consistent with Section 15093 of the CEQA Guidelines, will be prepared and filed by the City of Palmdale.

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## 7.0 GROWTH INDUCING IMPACTS AND LONG-TERM IMPLICATIONS

### 7.1 GROWTH INDUCING IMPACTS

According to the CEQA Guidelines, this section is concerned with "...the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." It should not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Landfills generally do not induce growth in the area where they are located. Implementation of the proposed expansion/reconfiguration will not extend new roadways and infrastructure which would normally be associated with residential or commercial developments entering into undeveloped areas. After the fill operations begin, residential uses of the surrounding property may occur if the other infrastructures are able to support such uses.

While the landfill operations are generally not considered to be an inducement for immediate new development on adjacent properties, landfill operations have also not significantly deterred development. Waste disposal is not restricted by the availability of local landfills in the same way that sewage disposal and water supply needs must be accommodated by the local in-place systems; solid waste can be hauled to other distant areas to meet waste disposal needs. Therefore, an increase in local landfill capacity neither directly restricts nor promotes new development.

The other growth-related feature that a landfill provides, regardless of location, is a source for disposal of municipal waste, without which development would have to cease. Therefore, by providing this infrastructure resource the proposed project could be considered growth-accommodating for business, industry, and home construction within its service areas. In this case, the proposed project is not considered growth-inducing due to the following factors; 1) The proposed project is necessary to continue the existing services provided by the Antelope Valley Public Landfill; 2) The existing Landfill I is anticipated to reach its capacity in 2006; 3) The proposed expansion will allow for the continuation of this existing service; 4) The project will be serving an existing need or demand over the next several years regardless of any new development that may be approved in the Antelope Valley area. Refer to Section 3.3 of this EIR which documents the future demand and growth in the landfill service area.

### 7.2 LONG-TERM IMPLICATIONS

If the proposed project is not implemented, fees for the collection and disposal of solid waste throughout the service area beyond the City of Palmdale would most likely increase, as costs associated with longer transportation routes would be passed to the ratepayer (either in the form of increased taxes or increased direct charges). Such fee increases would be insignificant when compared to the cost of housing in the service area, and the increased fees would be unlikely to prevent immigration to the project area or the construction of new housing stock.

The discussion below summarizes the long-term implications with respect to the landfill's life expectancy with and without the proposed wedge expansion and with and without the proposed increase in daily tonnage. As outlined in Section 3.0 and shown in **Table 3-2**, the wedge expansion project's life with an increased intake of 3,600 tpd would be 16.1 years. On the other hand, the proposed wedge expansion's project life with the currently approved intake of 1,800 tpd would be approximately 32 years. This 32-

year figure is obtained by doubling the (16.1 year) site life at 3,600 tpd. If the wedge expansion were not approved but the daily tonnage increase were approved, the existing/permitted landfill's life expectancy with an intake of 3,600 tpd would be seven years. With no wedge expansion and a daily intake of 1,800 tpd, the existing/permitted landfill's life expectancy would be 14.6 years (refer to **Table 3-2**).

## **8.0 ENVIRONMENTAL SUMMARIES**

The following summarizes the project's relationship to impacts found not to be significant, impacts mitigated to a level less than significant, unavoidable adverse impacts, and mitigation measures contained in the Initial Study and EIR documents.

### **8.1 EFFECTS FOUND NOT TO BE SIGNIFICANT**

#### **8.1.1 INITIAL STUDY**

##### **EFFECTS FOUND NOT TO BE SIGNIFICANT AND FOCUSED OUT OF THE EIR**

An Initial Study was prepared to identify the potential significance of the effects due to the proposed project. During the Initial Study/NOP process, the following categories of environmental impacts were determined not to be significant, and therefore required no further environmental analysis in the EIR. This determination was made by the City of Palmdale and their review of the Initial Study. Explanations for why these impacts were found not to be significant are contained in **Appendix A-1** (Initial Study) of this EIR.

- Land Use
- Natural Resources
- Population
- Housing
- Public Services
- Energy
- Utilities

##### **EFFECTS FOUND NOT TO BE SIGNIFICANT WITH MITIGATION MEASURES AND FOCUSED OUT OF EIR**

###### **Cultural Resources**

Although the 1992 certified EIR for Landfill II assumed that the on-site cultural resources (i.e., archaeological and paleontological resources) would be considered significant and that disturbance would be considered an adverse impact without mitigation, the Initial Study explained that even though the project modifications would include enlargement of the landfill footprint by 11 acres, this acreage was included in the original archaeological survey report. The Initial Study further explained that subsequent to the certification of the 1992 EIR, Mr. Brian Dillon, consulting archaeologist conducted a data recovery and excavation for the CA-LAN-876 site and site AVL-1 (subsequently designated CA-LAN-1917) and prepared a final report for County of Los Angeles approval. The Final Report Executive Summary on Archaeological Compliance Work for CUP No. 85512 by Brian Dillon and the April 20, 2003 submittal letter to the County are available on file with the City of Palmdale and contained in **Appendix A-1** of this EIR. The initial County of Los Angeles, Department of Regional Planning correspondence, dated August 31, 2000 (**Appendix A-1**), stated that upon receipt of the final report, the County would officially acknowledge the project compliance with conditions set forth in the CUP regarding archaeological resources protection.

Based upon the April 20, 2004 and submittal of the final report and delivery of the archaeological collections to California State University of Bakersfield, Department of Sociology/Anthropology for curation, compliance with the County CUP conditions has occurred. The County of Los Angeles, Department of Regional Planning correspondence (**Appendix A-1**), dated November 18, 2003 acknowledges receipt of the executive summary and that the project is in compliance with the CUP conditions. Therefore, through the Initial Study process, the archaeological resources issue was focused out and is not included in this Draft EIR. Mitigation Measures (presented below) were included from the 1992 certified EIR for Landfill II. The mitigation measures that are not completed (i.e., 46, 47, and 48) will be incorporated into the Mitigation Monitoring Program (MMP) for the proposed CUP project.

### **Archeological Resources**

44. In accordance with Sections 15064.5 and 15126.4 of the California Environmental Quality Act and Appendix K of the California Environmental Quality Act, if engineering or other project parameters will not allow preservation, the applicant shall subject the onsite deposits of shell and lithic material detected during the reconnaissance of site CA-LAN-876 *and site AVL-1, subsequently designated CA LAN-1917* to a data recovery excavation and recordation. The applicant shall be responsible for all costs incurred for archaeological excavation and reporting. The data recovery excavation and recordation shall be performed prior to the issuance of a *Solid Waste Facilities Permit* and include the development of a mitigation plan. **(Above Certified EIR Mitigation completed, refer to Appendix A-1 of this document)**
45. All material collected during the above recommended work shall be donated to an institution which has adequate facilities for curation, display and use by interested scholars and the general public. **(Above Certified EIR Mitigation completed, refer to Appendix A-1 of this document)**
46. A qualified archaeologist shall be present during clearing and initial grading of the property to monitor any additional deposits obscured by brush or buried by alluvial material. The monitoring archaeologist shall be prepared to document and recover any significant material that appears as quickly as possible using standard archaeological field practice. **(Above Certified EIR Mitigation Measure still applicable to City CUP)**

### **Paleontological Resources**

47. During Landfill excavation, a qualified paleontologist shall be retained to perform periodic inspections of excavations and, if necessary, salvage exposed fossils. The frequency of inspections will depend on the rate of excavation, the materials being excavated, and the abundance of fossils. During grading, the paleontologist shall be allowed to divert or direct grading in the area of an exposed fossil to facilitate evaluation and, if necessary, salvage. Because of the small nature of some of the fossils possibly present in the study area, samples of the sediments shall be collected for processing through fine mesh screens. **(Above Certified EIR Mitigation Measure still applicable to City CUP)**
48. All fossils collected during landfill excavation shall be donated to a public, non-profit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County. Provisions for preparation and curation shall be made before the fossils are donated to their final repository. **(Above Certified EIR Mitigation Measure still applicable to City CUP)**

**WATER (natural stream, springs, and wetlands), BLUELINE STREAM ON LANDFILL II**

Additionally, the 1992 certified EIR for Landfill II indicated that there is a blue line stream located in the previously approved landfill II expansion area. However, subsequent to the certification of the prior EIR, the mitigation measure listed below was implemented. Refer to the correspondence from Rebecca Jones of the Department of Fish and Game, dated October 22, 1998, contained in **Appendix A-1** (Initial Study), which indicated that and no additional permits were required by the Department of Fish and Game and for the existing approved CUP. Therefore, further analysis of this issue was focused out of the SEIR. Potential impacts to the Anaverde Creek are addressed in the SEIR.

43. Pursuant to Section 1601-1603 of the California State Fish and Game Code, the California Department of Fish and Game should be notified prior to any alteration of the blue line drainage traversing the property. the purpose of this notification is to allow the state to regulate alterations to streamed habitats, including, but not necessarily limited to, those drainages which are shown by a “blue line” in U.S.G.S. 7.5 minute quad sheets. **(Above Certified EIR Mitigation completed, refer to Appendix A-1 of this document)**

**8.1.2 DRAFT EIR****EFFECTS FOUND TO BE LESS THAN SIGNIFICANT – NO MITIGATION MEASURES REQUIRED BY EIR**

Based on the environmental analyses in this document and studies prepared, it is determined that the impacts related to the following would be less than significant.

- Earth Resources
  - Liquefaction (project specific)
  - Earth resources (cumulative)
- Air Quality
  - Mobile Source Project Related Exhaust Emissions (project specific)
  - Subsurface landfill gas (LFG) production (project specific)
- Biological Resources
  - Wildlife – potential disturbance/removal of an active coyote den (project specific)
  - Sensitive Resources (No listed species)
- Noise
  - Off-site truck hauling noise (project specific)
  - Off-site truck hauling noise (cumulative)
- Traffic
  - Existing plus project volume to capacity ratio/roadway links (project specific)
  - Existing plus project intersection capacity utilization ICU/levels of service (LOS) (project specific)
  - Project SR 14 Freeway (project specific and cumulative)
  - Year 2007 ICU / LOS (cumulative)

**EFFECTS FOUND TO BE LESS THAN SIGNIFICANT WITH MITIGATION MEASURES, REGULATION COMPLIANCE, AND DESIGN MEASURES**

Based on the environmental analyses in this document and studies prepared, it is determined that with implementation of applicable mitigation measures from the 1992 EIR and/or new mitigation measures and/or design measures to ensure regulation compliance, impacts related to the following would be less than significant.

- Earth Resources
  - Surface fault rupture (project specific)
  - Earthquake ground shaking (project specific)
  - Expansive soils (project specific)
  - Slope stability (project specific)
  
- Air Quality
  - Short-term construction impacts – PM-10 (project specific)
  - Long-term operational impacts – PM-10 (project specific)
  - Long-term odor (project specific)
  
- Hydrology and Water Quality
  - Post development flows during flooding events (project specific)
  - Erosion at the north bank of the Anaverde Creek (project specific)
  - Contamination of the Anaverde Creek and surface water quality (project specific)
  - Groundwater quality impacts and permeability (project specific)
  - Regional flooding (cumulative)
  - Regional water quality (related to runoff, scour) (cumulative)
  
- Biological Resources
  - Vegetation and habitats (removal Joshua tree and juniper trees) (project specific)
  - Vegetation and habitats - improvements to Anaverde Creek (1.9 acres of CDFG jurisdictional areas and habitat within the creek) (project specific)
  - Wildlife (native bird nest impacts) (project specific)
  - Wildlife (peripheral effects of light and noise) (project specific)
  - On-site and adjacent wildlife movement, corridors, and habitat linkages (project specific)
  - Losses of natural upland desert formations, native vegetation, habitat values and Displacement impacts to CEQA-sensitive songbird and small mammal species (cumulative)
  
- Noise
  - Construction noise from landfill ancillary facility construction activities and new frontage road connecting to Tierra Subida at Rayburn and the realignment of City Ranch Road (R-5 access) (project specific)
  - Operational noise as a result of expanded landfill hours (project specific)
  - Construction noise and landfill expansion operational activities (cumulative)
  
- Aesthetics
  - Visual qualities and landfill height increase (project specific)
  - Litter (project specific and cumulative)

- Light and glare (project specific and cumulative)
- Traffic
  - Sight distance for southbound vehicles on Tierra Subida Avenue (project specific)
- Risk of upset/human health
  - Household hazardous waste and radioactive waste (project specific)
  - Increased household waste (cumulative)

## **8.2 UNAVOIDABLE ADVERSE IMPACTS**

Although all of the potential impacts emanating exclusively from the proposed project implementation would be reduced to a level less than significant, the proposed project would result in unavoidable significant adverse impacts to cumulative air quality (NO<sub>x</sub>, and PM-10 emissions), cumulative traffic (the roadway segment of Tierra Subida Avenue between 5<sup>th</sup> Street and Rayburn Road), and cumulative aesthetic impacts (visual qualities and height increase), for which a statement of overriding consideration will be required to be adopted by the City of Palmdale.

## **8.3 LISTING OF MITIGATION MEASURES**

The following is a listing of mitigation measures as they appear in each of the impact sections within this document. The regulations to be complied with and design measures to be implemented by the project are listed within **Table 1-1** and the appropriated environmental issue sections (4.0 of this EIR) and are not repeated below.

### **8.3.2 DRAFT EIR MITIGATION MEASURES**

#### **EARTH RESOURCES**

**4.1-1** Prior to the issuance of the Waste Discharge Requirements (WDR's) and approval of the Joint Technical Document (JTD) for the project by the Lahontan Regional Water Quality Control Board, the proposed design and supporting engineering analysis of the landfill's containment structures shall be reviewed and approved by the RWQCB to ensure the design complies with State regulations pursuant to California Code of Regulations, Title 27, Division 2. The applicant shall demonstrate to RWQCB satisfaction that the landfill liner and leachate collection system have been designed to preclude failure and will resist the maximum seismic shaking expected at the site based on risk assessment. Further, the design shall demonstrate that the final slopes will be stable under both static and dynamic conditions to protect public health and safety and prevent damage to the facility such that no significant impact to the environment will occur. The liner design, as proposed in Appendix B of the EIR, shall be modified or refined if necessary based on final engineering analysis and review by the RWQCB to ensure that the approved landfill design will mitigate impacts to a less than significant level.

The landfill containment structures shall be constructed as approved by the RWQCB. During ongoing landfill construction, Geologic mapping of rock and soil exposed in future excavations shall be completed during ongoing landfill construction. Information on rock type and any exposed folds, fractures and folds will be collected. Permanent cut slopes shall be observed by a qualified geologist to check for adverse bedding, joint patterns, or other geologic features that

may impact the approved landfill design. Where necessary, the permanent cut slopes shall be constructed to ensure their stability. The geologic maps will be included with the construction reports for each portion of the constructed landfill. The reports will be submitted to the LEA and Lahontan RWQCB.

- 4.1-2** Earth moving operations shall be observed, and the placement of fill shall be tested by a qualified geotechnical engineer during ongoing landfill operations. Observation and testing will ensure fill placements are consistent with the approved landfill design.

## **AIR QUALITY**

### **FUGITIVE DUST EMISSIONS (PM-10)**

- 4.2-1** Because the grading/disturbance of more than 10 acres will cause the daily PM-10 thresholds to be exceeded, construction of landfill ancillary facilities (new frontage road, R-5 access, and the Anaverde Creek erosion protection) shall not exceed 10 acres of grading on any given day.
- 4.2-2** The internal haul road from the scale house into the landfill shall be incrementally paved with asphalted concrete or equivalent as depicted on **Figure 4.2-1**.
- 4.2-3** Because of the potential for fugitive dust emissions from the proposed landfill to cause a public nuisance or exacerbate PM-10 non-attainment status within the Antelope Valley, dust generated by project activities shall be kept to a minimum and prevented from dispersing offsite. The project shall comply with all best available control measures of existing AVAQMD Rule 403, or any of its possible near future control measure enhancements. The project size is not sufficient to require preparation and approval of a formal fugitive dust control plan (DCP) as it is less than 100 acres of simultaneous disturbance. However, because of the non-attainment status of the air basin and the cumulative significance of continued elevated levels of PM-10 emissions, a DCP shall be prepared and submitted to the AVAQMD for their review and approval. The elements of such a plan are already part of site operational procedures. The preparation and implementation of a dust control plan is designed to create a CUP compliance evaluation mechanism to further protect the nearest existing and future residents. The elements of such a plan would likely include:
- a. Water trucks or fixed sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site.
  - b. Areas to be graded or excavated shall be watered before commencement of the grading or excavation operations. Application of water must penetrate sufficiently to minimize fugitive dust during grading activities.
  - c. All graded and excavated material, exposed soil areas, and active portions of the landfill, including on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary to prevent fugitive dust from leaving the landfill site.
  - d. Signs shall be posted on-site limiting traffic to speeds of 15 mph or less on unpaved roads and 25 mph on paved roads.

- e. During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off-site or on-site.

## **ODOR**

- 4.2-4** If an odor nuisance problem should develop, appropriate control measures shall be employed such as applying additional cover material or more frequent application of the cover material to seal the surface, or adjustments to the ~~vacuum pressure on wells, or disposal equipment~~landfill gas collection system.

## **GHG EMISSIONS**

The recommended mitigation measures to reduce hauling and disposal GHG exhaust emissions are:

- 4.2-5** The project shall include the following set of measures that, working together, will reduce operational greenhouse gas emissions of the project and the effects of global warming:

- Hauling trucks shall be powered by liquefied natural gas (LNG) or ultra-low sulfur diesel fuel.
- Idling of heavy-duty hauling trucks in excess of five minutes, and idling of off-road mobile sources of any type in excess of ten minutes shall be prohibited.
- When new landfill equipment is purchased by WMI, new commercially available equipment shall be purchased that meets or exceeds California's emission standards in effect at the time of purchase.
- Onsite vehicles and equipment shall be properly maintained by being serviced at least every 90 days and once annually in compliance with Department of Transportation (DOT) requirements.
- Operation equipment used for the proposed project shall use clean alternative (i.e., non-diesel/biodiesel) fuels, or use equipment that has been retro-fitted with diesel particulate reduction traps or equivalent control technology, using equipment certified by CARB. Such equipment is now subject to CARB's new regulation to control PM emissions from off-road diesel engines.
- For the purchase of primary heavy duty, diesel powered landfill equipment at WMI (dozers and compactors), if equipment meeting California's 2014 emission standards for off-highway, heavy duty diesel equipment is commercially available before 2014, WMI shall purchase such equipment as older equipment is replaced.

- 4.2-6** Within three years of project approval, the applicant shall develop a Greenhouse Gas Reduction Plan that demonstrates how the WMI will achieve by 2020 a reduction in annual GHG emissions such that emissions are no greater than 10 percent below 2006 levels and will meet or exceed all

regulatory requirements related to GHG control. The Reduction Plan shall include one or more of the following measures, or combination thereof:

- Use of B-5 or B-20 Biodiesel in on-site equipment and in heavy duty truck fleets (and as a condition of future contract approvals if third-party haulers are used)
- Use of hybrid hauling trucks
- Use of Best Available Control Technology and BMPs when designating new waste disposal cells (e.g., by designing any additional gas collectors in bottom liner systems) and to increase gas combustion capacity/improve flare destruction efficiency
- Reconsider the feasibility of gas-to-energy production capacity in the future for use in fueling vehicles, operating equipment or energy conversion
- Increased diversion of organic material from landfill disposal and use as landfill cover material
- Increased recycling and carbon offsets
- The plan shall include cost estimates for GHG reduction measures and identify funding sources. The plan shall include an implementation schedule that demonstrates substantial GHG emission reductions prior to the 2020 deadline, including implementation of “Early action” measures that may be implemented within three years of plan approval. The plan shall include an updated inventory of projected GHG emissions and an updated estimate of GHG emissions in 1990. The plan shall be subject to review and approval by AVAQMD.
- Increase waste diversion of recyclable materials

**4.2-7** Following closure of the landfill, the applicant shall continue to operate, maintain, and monitor the landfill gas collection and treatment system as long as the landfill continues to produce landfill gas, or until it is determined by the ACAQMD that emissions no longer constitute a considerable contribution to greenhouse gas emissions, whichever comes first.

## **HYDROLOGY AND WATER QUALITY**

**4.3-1** The final design for the Anaverde Creek Scour Protection System shall be developed by a qualified engineer to comply with the City of Palmdale engineering design requirements. The construction of the approved Scour Protection System shall be completed in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.

## **BIOLOGICAL RESOURCES**

**4.4-1** Prior to the removal of any Joshua/Juniper trees, the *1998 Desert Vegetation Preservation Plan* (see **Appendix E-2**) prepared by FH&A shall be updated and approved by the City of Palmdale consistent with the City’s Desert Vegetation Ordinance.

- 4.4-2** Pursuant to Section 1601-1603 of the California Fish and Game Code responsible agencies (i.e., CDFG and Lahontan RWQCB) shall be notified and permits/approvals shall be obtained prior to any activities within, or encroachment upon delineated bed and bank of the Anaverde Creek along the southern margin of the Landfill property.
- 4.4-3** Prior to issuance of the landfill's Waste Discharge Requirements (WDRs), the project engineer shall finalize erosion and siltation control plans and other BMPs, as necessary to prevent graded and cleared areas from being eroded, resulting in the transport of sediment downstream to Anaverde Creek where it may adversely impact habitat areas.
- 4.4-4** Landfill expansion actions which directly affect vegetation formations (i.e., initial vegetation cleaning) shall be initiated outside of the timing of the native bird nesting season (mid-April through mid-August) to avoid disturbing active nests, per provisions of the Migratory Bird Treaty Act and California Fish and Game Code. If initial vegetation disturbance and clearing cannot be performed outside of this window of non-breeding activity, then it shall be preceded by a thorough site survey for active nests by a qualified biologist; nests found shall be flagged, and a perimeter fence installed at an appropriate distance (usually between 50 and 300 feet from the nest, depending upon species and terrain). No work shall be performed within the fenced areas until such time as the nests are determined to be inactive and the fledgling have left the area.
- 4.4-5** Facility design and management practices shall be implemented to reduce the intensity of exterior and security lighting adjacent to habitat areas. Measures such as shielded, downward-directed exterior light fixtures, use of sodium vapor or similar low-intensity bulbs (other than mercury vapor), shall be utilized. Security and activity lighting shall be directed onto target working face areas, and not into the creek channel.
- 4.4-6** The final design of the utility pole replacement shall be outside of the bed and bank of the channel to permit free passage by the wildlife along the channel.

## **NOISE**

- 4.5-1** In conjunction with grading permit issuance for the realignment of City Ranch Road (R-5 access and the new frontage road) and during grading and construction operations, the following mitigation measures shall be implemented for the project:
- a. All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the City's Public Works or Building Inspector.
  - b. During construction of the new landfill access road, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the extent practical, to the satisfaction of the City's Public Works or Building Inspector.
  - c. During construction of the new landfill access road and to the satisfaction of the City's Public Works Inspector or Building Inspector, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities.

The proposed project would not exceed the City of Palmdale Noise Element or Municipal Code for anticipated site uses. However, because single-event operational noise may be intrusive even if standards are not exceeded, noise protection is recommended as follow.

- 4.5-2** Operational activities before 6:00 a.m. or after 8:00 p.m. shall be restricted as follows:
- a. No receipt of refuse or unloading activities shall be conducted during those hours.
  - b. No heavy equipment operation within 1,000 feet of any residence under clear line-of-sight conditions shall take place during those hours.
  - c. No bird repellent activity sound generators shall occur before 7:00 a.m. or after 8:00 p.m.

**AESTHETICS/LIGHT AND GLARE**

- 4.6-1** Interim vegetative cover shall be established as land filling proceeds to help offset visual impacts prior to application of final cover and vegetation at landfill closure. This interim measure provides that the outer southerly facing slopes shall receive cover material consistent with native species of the surrounding terrain as the phased development continues with application at appropriate intervals but at a minimum of every two to four year. Interim vegetation plant densities/seed mix shall be completed consistent with the baseline study to be conducted prior to the beginning of land filling operations in the expansion area.
- 4.6-2** Final design of the access roadway shall comply with Policy ER 3.1.2, to the extent feasible, to reduce the visual impact to the existing ridgeline as viewed from Tierra Subida and Rayburn Road.
- 4.6-3** During conditions of severe wind, operating hours shall be limited, size of the working face shall be reduced, and completed cells shall be promptly covered.
- 4.6-4** During landfill operations and after construction activities, personnel ~~members~~ shall conduct periodic litter cleanup along, 1) the access roadway (R-5 access) and adjacent land from the scales to Tierra Subida and 2) ~~adjacent properties~~ adjacent to the landfill. The goal is to ensure that stray litter (including litter that is illegally dumped along the landfill access road) is immediately removed when strong winds occur.

**TRAFFIC AND CIRCULATION**

- 4.7-1** The City of Palmdale shall approve the final roadway design for the new landfill access and periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

The future landfill access road alignment shall be along R-5 as a two lane roadway (60-foot right-of-way). R-5 shall intersect a new frontage road. The R-5 access road shall be constructed as a two lane roadway (60-foot right-of-way). The future landfill access road alignment shall also be along the new frontage road that would connect with City Ranch Road and intersect Tierra Subida at Rayburn Road, and create a 4-way signalized intersection, and construct the remaining access road along the R-5 dedicated right-of-way (**Figures 4.7-13**, Proposed Realignment of City

Ranch Road to be Opposite Rayburn Road at Tierra Subida Avenue and **4.7-14**, Proposed City Ranch Road Roadway Cross-Section).

Preliminary design of the frontage road calls for a 40-foot roadway measured from curb to curb, with an 8-foot sidewalk adjacent to the west curb and a 10-foot-minimum buffer between the east curb and the ultimate location of the west sidewalk of Tierra Subida proper. The new realignment of the landfill access (new frontage road) shall accomplish the following:

- Improve sight distance and related operational safety.
- Improve horizontal and vertical alignment.
- Wider lanes will result at the Tierra Subida Avenue/Rayburn Road intersection than at the existing City Ranch Road intersection.
- Improve traffic signal spacing along Tierra Subida Avenue.

**4.7-2** The applicant shall construct right-of-way and traffic signal improvements at the intersection of the landfill access road at Rayburn Road (see **Figure 4.7-13**) in conjunction with Landfill II and the wedge expansion in accordance with the CUP Conditions of Approval.

**4.7-3** During landfill operations, worker-rideshare and transit plans shall be encouraged by the landfill operator consistent with the goals of the Air Quality Management Plan.

**4.7-4** The applicant shall pay traffic impact fees in accordance with the City Traffic Impact Fee Ordinance. Credits shall be applied consistent with the Ordinance for the improvements (see **Mitigation Measure 4.7-2**) installed by the client.

#### **RISK OF UPSET/HUMAN HEALTH**

**4.8-1** The permittee shall establish and maintain a comprehensive waste load checking program, which shall include the following:

- a. All waste hauling vehicles shall be screened at the scales with a radiation detector device acceptable to the Local Enforcement Agency for the presence of radioactive materials.
- b. Sensors capable of detecting volatile organic compounds, acceptable to the Local Enforcement Agency shall be available and used as directed by the Local Enforcement Agency.
- c. A remote television monitor or an alternative procedure acceptable to the Local Enforcement Agency shall be maintained at the scales to visually inspect incoming roll-off type loads and open top vehicles.
- d. The dumping area shall be continuously inspected for hazardous and liquid waste and radioactive waste/materials. This inspection shall be accomplished by equipment operators and spotters who have been trained in an inspection program approved by the Local Enforcement Agency (LEA). The landfill currently complies with the LEA inspection procedures and will continue to comply as required by their SWFP.
- e. Manual inspection of randomly selected refuse loads shall be conducted. The frequency of inspections shall be as directed by the Local Enforcement Agency. The checking

program shall be conducted by personnel trained in accordance with a plan approved by the Local Enforcement Agency.

Additionally, as part of the proposed project, the entrance to the facility is equipped with monitors to detect radioactive waste.

**9.0 REPORT PREPARATION RESOURCES****9.1 ORGANIZATIONS AND PERSONS CONSULTED****CITY OF PALMDALE - LEAD AGENCY**

In conformance with Sections 15050 & 15367 of the State CEQA Guidelines, the City of Palmdale is the Lead Agency for the project. The Lead Agency is defined as the “public agency, which has the principal responsibility for carrying out or approving the project.” The material contained in this EIR is intended to serve as an informational document for decisions to make made by the City and responsible agencies regarding the proposed project.

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**OTHER AGENCIES**

County of Los Angeles, Regional Planning

Los Angeles County Fire Department

Los Angeles County Water Works Districts

Los Angeles County Health Department, Solid Waste Management Program

Los Angeles County Solid Waste Management Committee/Integrated Waste Management Task Force

California Integrated Waste Management Board

Antelope Valley Air Quality Management District

California Regional Water Quality Control Board

California Air Resources Board

Southern California Association of Government

The Gas Company

Southern California Edison

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