DRAFT ENVIRONMENTAL IMPACT REPORT

Lancaster Landfill and Recycling Facility

VOLUME I

County Case No. 93070

State Clearinghouse No. 93101036

April 1997

County of Los Angeles
Department of Regional Planning

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County of Los Angeles Health Services Solid Waste Mgmt. Services Mr. Richard Hanson	2525 Corporate Place	Monterey Park	CA	91754
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State Agencies				
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CA Department of Conservation	1416 9th Street	Sacramento	CA	95814
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California Highway Patrol	P.O. Box 1570	Lancaster	CA	93539
California Waste Management Board Waste Generation Branch Ms. Nancy Carr	8800 California Center Drive	Sacramento	CA	95826
Caltrans - District 7 Transportation Planning and Analysis IGR/CEQA Coordinator	120 South Spring Street	Los Angeles	CA	90012
Department of Fish & Game Attn: CEQA Reviewer	330 Golden Shore, #50	Long Beach	CA	90802
Department of Health	601 North 7th Street	Sacramento	CA	94234
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Southern California Gas Company North Counties Transmissions	22245 Placerita Canyon Road	Newhall	CA	91321-1124
Assemblyman George Runner	709 W. Lancaster Blvd.	Lancaster	CA	93534
Southern California Edison Company Environmental Planning	100 West Long Beach Blvd.	Long Beach	CA	90802

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SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

The purpose of this Environmental Impact Report (EIR) is to analyze the potential environmental impacts associated with the proposed expansion of the Lancaster Landfill and Recycling Center (LLRC) project. The existing LLRC is located in a sparsely developed area two miles northeast of the City of Lancaster in the Antelope Valley area of Los Angeles County. The Lead Agency for this EIR is the Los Angeles County Department of Regional Planning (LACDRP).

On June 28, 1993, LACDRP staff in the Impact Analysis Section completed their review of the Environmental Questionnaire and other data regarding the proposed project and determined that an EIR would be required to fulfill the requirements of the California Environmental Quality Act (CEQA). The LACDRP case number for this project is 93070.

DRP staff circulated a Notice of Preparation (NOP) of an EIR for this project to the State Clearinghouse, responsible agencies, trustee agencies, interested agencies and organizations in order to solicit comments regarding the scope and content of the EIR. The State Clearinghouse assigned number SCH93101036 to this project. Copies of the Initial Study and NOP, as well as agency comments on the NOP, are contained in Appendix A of this document.

Section 2.0 of this document presents a summary project description as well as a summary of the potential environmental impacts of the project and possible mitigation measures to reduce the significance of the impacts. Section 3.0 contains the detailed description of the project, and Section 4.0 describes the general environmental setting of the project. Section 5.0 is the main body of the EIR which describes the existing conditions, potential impacts and possible mitigation measures for the impacts. The Initial Study for the project identified potential environmental impacts associated with the following topical issues: geotechnical, flood, fire, noise, water quality, air quality, biota, cultural resources, traffic/access and environmental safety. Section 6.0 describes the cumulative environmental impacts of the project. Section 7.0 describes a range of reasonable alternatives to the proposed project and compares the potential environmental impacts of each alternative to the impacts associated with the proposed project. Section 8.0 of this EIR describes the long-term implications of the project. Section 9.0 identifies the organizations and persons consulted during the preparation of the EIR. Section 10.0 describes the qualifications of the EIR preparers. The appendices to this EIR contain various technical reports and other supporting documentation.

SECTION 2.0

SUMMARY

2.0 SUMMARY

2.1 INTRODUCTION

The purpose of this EIR is to analyze the potential environmental impacts associated with the proposed expansion of the LLRC in the County of Los Angeles, near the City of Lancaster. This section summarizes each major section of the EIR including the Project Description (Section 3.0), Environmental Setting (Section 4.0), Existing Conditions, Project Impacts, and Mitigation Measures (Section 5.0), Cumulative Impacts (Section 6.0), and Alternatives to the Proposed Project (Section 7.0).

Section 5.0 of the EIR focuses on the issues that were identified as having the potential to significantly impact the environment including geotechnical, flood hazard, fire hazard, noise, water quality, air quality, biota, cultural and paleontologic resources, traffic/access, and environmental safety.

Three project alternatives are analyzed in this EIR, as follows:

- ❑ No Project Alternative
- ❑ Rail Haul Alternatives
- ❑ Alternative Project Locations
- ❑ Modified Project Alternatives

2.2 PROJECT DESCRIPTION

2.2.1 SITE LOCATION

The LLRC (site) is located on 274 acres in an unincorporated area of Los Angeles County, California. The site is located approximately two miles northeast of the City of Lancaster (See Figure 2-1), which is a desert community situated approximately 65 miles north of Los Angeles, California. The site is not located in a flood plain, tideland or agricultural preserve. Zoning of the site and adjacent properties are D-2-1 (Desert/Mountain one acre minimum) and D-2-2 (Desert/Mountain two-acre minimum).

2.2.2 SITE HISTORY

Waste Management of Lancaster, has operated the LLRC since 1973. Waste Management, Inc. acquired the site in 1973 and currently Waste Management of California, Inc. (WMC) is the owner. The existing Class III sanitary landfill operates on 102 acres of the property, and prior to filling the area was open desert. The site was owned and operated by others from 1954 to 1973.

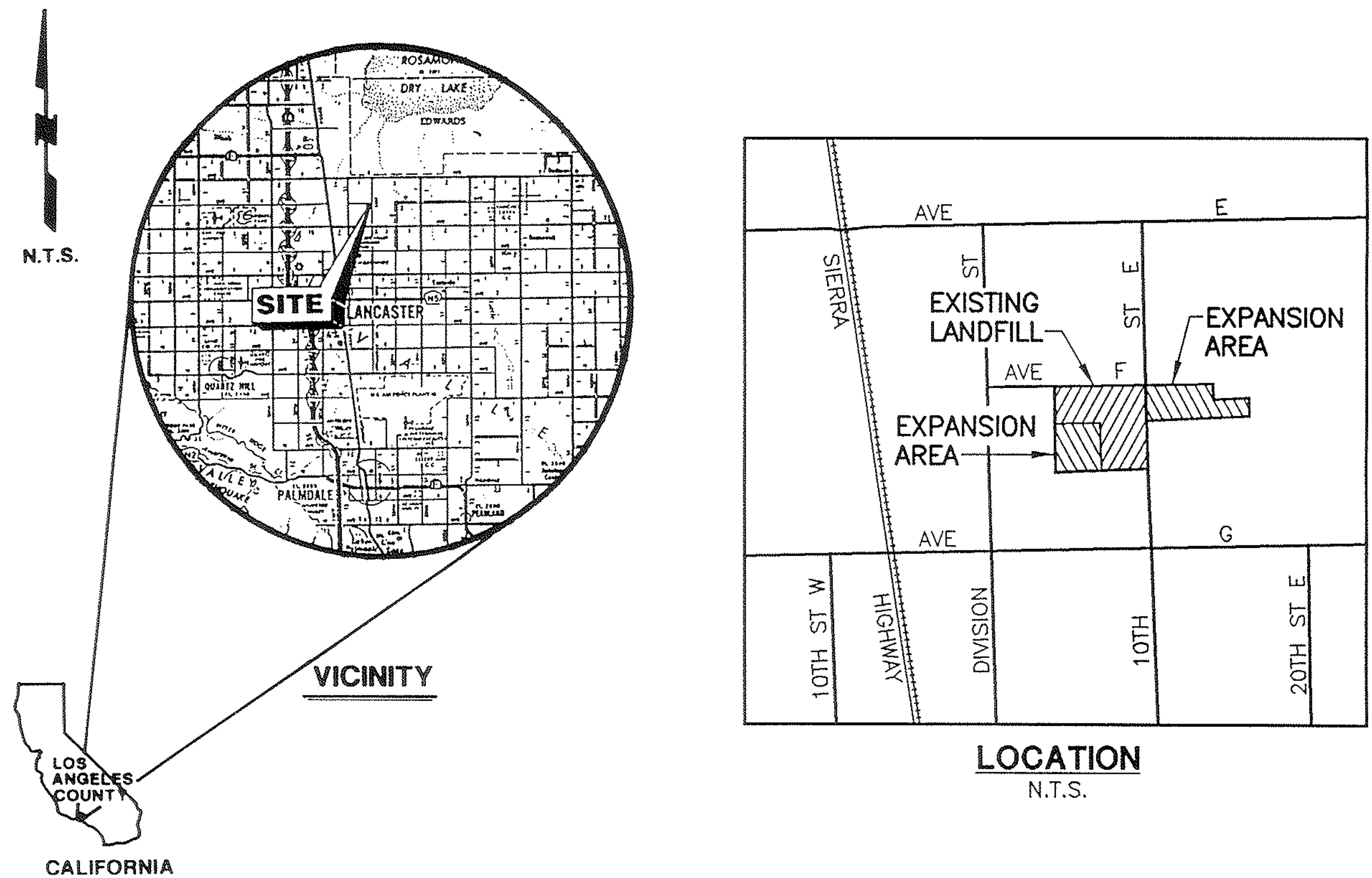
The site currently accepts only non-hazardous wastes and does not accept liquid or special wastes, as defined by the California Code of Regulations (CCR), Title 22.

2.2.3 SURROUNDING LAND USE

Current land use within one mile of the LLRC is zoned D-2-1 and D-2-2. Some mobile homes are found within a one mile radius of the site. There are no structures within 1,000 feet of the landfill boundary. Figure 2-2 shows the site plan. The nearest structure is a small radio transmitter station approximately one-quarter mile west of the existing landfill.

2.2.4 PROPOSED LANDFILL EXPANSION

The site plan (Figure 2-2) shows the proposed lateral expansion limits consisting of a portion (62 acres) to the west of the current landfilling area designated as the

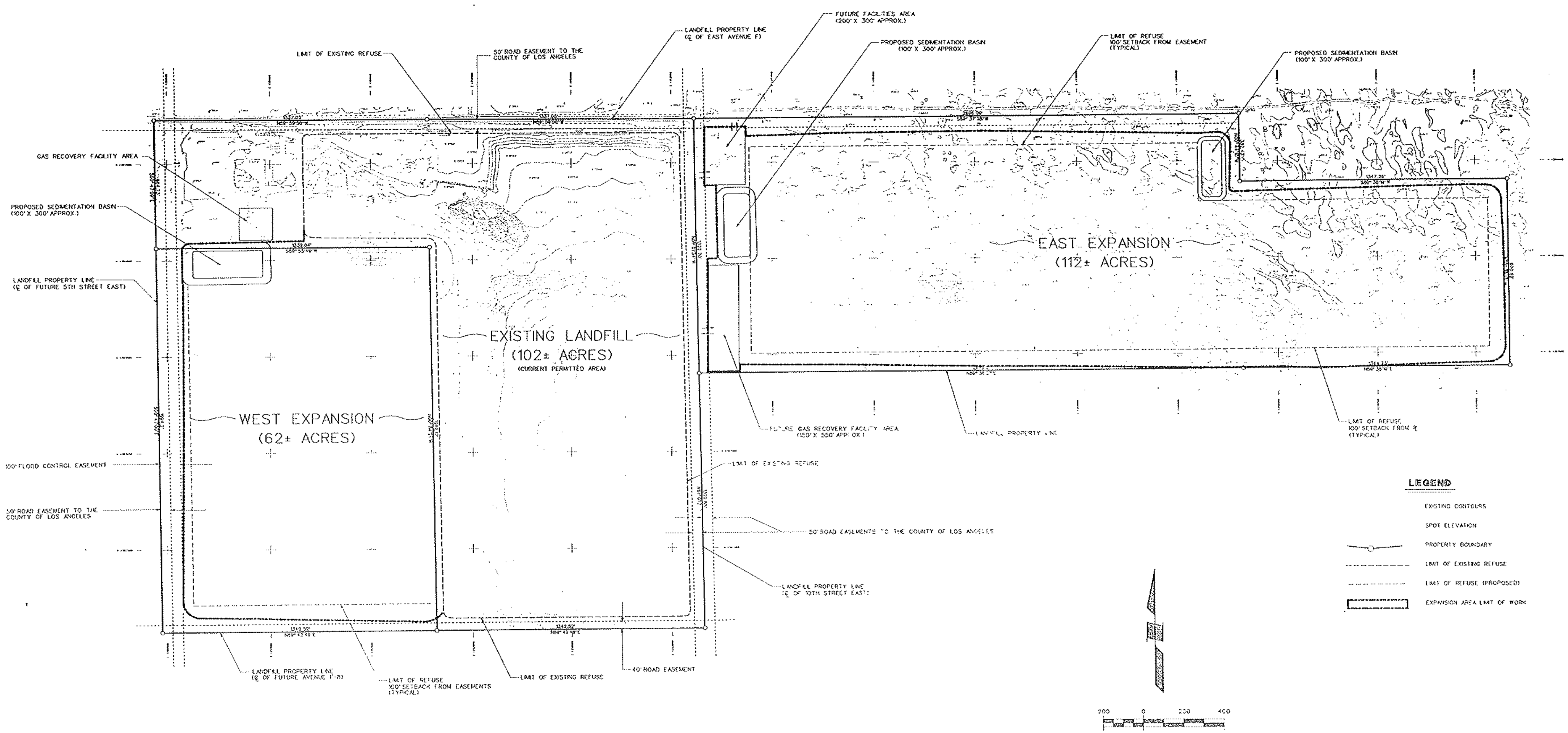


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 2–1

SITE VICINITY / LOCATION

Source : Rust Design Report 1994



NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27, 1992 AT A SCALE OF 1"=100' AND 2' CONTOUR INTERVAL.
2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4089). DATED 8-18-81.
3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1988).
4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.
5- GRID BASED ON STATE PLANE COORDINATE SYSTEM.
6- ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.
7- REFUSE LIMIT SETBACK 100 FEET FROM PROPERTY LINE AND/OR ROAD EASEMENT WHERE APPLICABLE (AS SHOWN).

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 2–2

SITE PLAN

Source : Rust Design Report 1994

western expansion, and another (112 acre new area) to the east designated as the eastern expansion. The proposed vertical expansion of the existing landfill increases the height from an elevation of 2,395 feet mean sea level (msl) (per Conditional Use Permit 90494-(5)) to 2,420 feet msl.

The proposed expansion of the existing landfill site is estimated to provide from 15 to 35 years (as of January, 1996) of additional site life depending on the disposal rate and assuming a 4 percent annual rate increase. For purposes of environmental impact analyses, the maximum proposed inflow rate was assumed to be reached within the shortest time period which is 15 years or by 2010. Ultimately, as operations continue and areas reach final grade, appropriate closure procedures will be implemented. Closed areas will be vegetated with selected grass and plant species similar to those found in the area, providing open space compatible with the surrounding, sparse land use.

Table 2-1 summarizes the area (in acres), airspace (in cubic yards), and refuse capacity (in tons and cubic yards) for the Existing Permitted Landfill Area, the east expansion and the west expansion.

TABLE 2-1
AREA, AIRSPACE AND REFUSE CAPACITY SUMMARY

	Existing Site	West Expansion[3]	East Expansion	Total
Area (acres)	102	62	112	276
Refuse Capacity[1]				
- cubic yards[2]	690,000[4]	5,625,000	8,909,000	15,224,000
- tons	470,000	3,375,000	5,345,400	9,190,400

1 Refuse capacity = airspace less daily, interim, and final cover.
2 1,200 pounds/cubic yard refuse density, or 0.6 tons/cubic yard.
3 Does not include existing site.
4 Remaining permitted capacity as of January, 1996.

2.2.5 WASTE STREAM

The landfill applicant is currently permitted to accept up to 1,000 tons per day (tpd) of municipal solid waste and is proposing to accept up to 1700 tpd by the year 2010. The percent of incoming waste as presented in the site's 1992 Report of Disposal Site Information (RDSI) is 22 percent municipal refuse, 27 percent commercial/industrial wastes, 18 percent construction/demolition wastes, and 33 percent mixed waste. Similar waste types and quantities are proposed for the project. These percentages will change over time due to the effects of the implementation of the California Integrated Waste Management Act of 1989 also known as Assembly Bill 939 (AB 939) programs.

These municipal solid waste categories are described as follows:

- ❑ Municipal Refuse and Commercial/Industrial: Includes solid waste generated by residences, commercial accounts such as retail stores, restaurants, bars and offices, and nonhazardous waste generated by the industrial sector.
- ❑ Construction/Demolition: Includes construction and demolition materials such as wood, metal, glass, concrete and asphalt.
- ❑ Mixed Waste: Includes paper, green and wood wastes, glass, plastic, etc.

2.2.5.1 SPECIAL WASTES

The site does not accept any special wastes, as defined in CCR, Title 22. The landfill operator is proposing to receive sewage sludge and asbestos waste which are described as special wastes in CCR, Title 14, Chapter 9, Article 6.1, Section 18722(j). These special wastes are those which require collection, processing, handling and disposal procedures different than those normally associated with municipal solid wastes and are not considered hazardous. A brief description of the special wastes proposed to be accepted for the new project follows.

2.2.5.2 SEWAGE SLUDGE

The project site is permitted by the RWQCB and the CIWMB to receive dewatered sewage sludge provided that it contains more than 50 percent solids. WMC estimates that disposal needs would be about 10 wet tons per day with 50 percent solids or more.

2.2.5.3 ASBESTOS

Waste Management of California, Inc. (WMC) proposes to accept asbestos (friable and non-friable) and asbestos-containing material for disposal by obtaining Regional Water Quality Control Board (RWQCB) and California Integrated Waste Management Board (CIWMB) approval. All applicable local, state and federal regulations regarding the disposal of asbestos and asbestos-containing waste will be complied with. An Asbestos Waste Handling Plan for friable asbestos waste disposal procedures will be prepared and adhered to during disposal operations.

2.2.5.4 NON-HAZARDOUS CONTAMINATED SOIL

The WMC proposes to accept non-hazardous contaminated soils which may be accepted with RWQCB and South Coast Air Quality Management District (SCAQMD) approval. These soils can be used as daily cover if the material meets permit guidelines. Special handling of soils is necessary when the materials originate from a volatile organic compounds (VOCs) contaminated site as defined by District Rule 1166.

2.2.6 SITE OPERATIONAL INFORMATION

2.2.6.1 CURRENT PERMITS

Recent Conditional Use and facilities permits for the site include:

- ❑ Conditional Use Permit #90494-(5), issued October 30, 1991, by the Regional Planning Commission of Los Angeles County. (Approval of site vertical expansion to elevation 2,395 Mean Sea Level (MSL).

- ❑ Conditional Use Permit #89531, issued November 28, 1990 (to expand the soil cover borrow pit in the western landfill area).

- ❑ Conditional Use Permit #88411-(5), issued April 15, 1989 by the Regional Planning Commission of Los Angeles County (to continue an existing landfill).

- ❑ Solid Waste Facilities Permit #19-AA-0050, issued June 24, 1992, by the CIWMB and the County of Los Angeles Department of Health Services (operating permit for facilities receiving solid waste - Landfill Class III).

- ❑ Waste Discharge Requirements (WDRs), Board Order No. 6-95-103, WDID No. 6B190343001, adopted 9/14/95, is for the Corrective Action Program.

2.2.6.2 LANDFILL CUSTOMERS AND SERVICE AREA

The existing landfill serves residential, commercial, light industrial, and construction/demolition customers. The local areas served are generally the Lancaster/Palmdale area and surrounding areas (i.e., Quartz Hill, Antelope Acres, Lake Los Angeles, Pearblossom, and other unincorporated L.A. County areas). Waste is also received from Edwards Air Force Base (EAFB) (approximately 20 miles), Acton (20 miles), Wrightwood (45 miles), and Gorman (50 miles).

2.2.6.3 HOURS OF OPERATION

The site currently operates Monday through Friday from 6:00 a.m. to 5:00 p.m. The site operates from 6:00 a.m. to 2:00 p.m. on Saturdays. The proposed new site operating hours would be from 5:00 a.m. to 8:00 p.m. The site is closed on Sundays and six holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

2.2.6.4 SITE ACCESS

Access to the site is from East Avenue F, a two-lane paved road with little traffic. The entrance facilities are paved for all weather access. The main haul road to the working face of the landfill, where current landfilling operations are taking place at any given time, is maintained for all weather access. The average traffic volume per day entering the landfill is approximately 155 vehicles. Ample area is provided within the site for vehicles to queue (if necessary) for access to the working disposal area. Waste Management of Lancaster's hauling company maintenance yard facility is located in the northwestern section of the property. The existing landfill is secured by a six-foot chain link fence and a locking gate at the entrance.

2.2.7 DISCRETIONARY ACTIONS/PERMITS REQUIRED

The proposed expansion of the LLRC will require new permit approvals from several regulatory agencies. These include, but are not limited to the following:

- ❑ Finding of Conformance with the Los Angeles County Solid Waste Management Plan from the Los Angeles County Solid Waste Management Committee/Integrated Waste Management Task Force.
- ❑ WDRs Permit from the California Regional Water Quality Control Board, Lahontan Region.

- ☐ Conditional Use Permit from the Regional Planning Commission of Los Angeles County.

- ☐ Solid Waste Facilities Permit (SWFP) from the Los Angeles County Department of Health Services (the Local Enforcement Agency or LEA) and the CIWMB.

2.2.8 SUMMARY OF IMPACT ANALYSES

The environmental impacts and mitigation measures for the proposed project are summarized in Table 2-2.

The only impact associated with the project which is not reduced to a less than significant level after implementation of feasible mitigation measures is emissions of No_x.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
1. Air Quality	Emissions of NO_x exceed significance threshold for project. Significant cumulative impacts are expected due to emissions of NO_x.	Evaluate feasibility of using turbo-charged or intercooled diesel engines to reduce NO_x emissions. Maintain all landfill equipment according to manufacturers specifications to reduce NO_x emissions. Shutdown all diesel equipment if expected to be idle more than 10 minutes.	Significant for NO_x but insignificant for SO_x, CO, reactive organic gas and particulates. Significant cumulative impact for NO_x.
	Expansion of the landfill is expected to increase the amount of emissions from off-site vehicles, fugitive dust and landfill gas. Emissions increases due to the project will not exceed significance thresholds established by the SCAQMD for the region for SO_x, CO, reactive organic gas or particulates.	Current dust suppression methods will be used to control dust emissions.	Less than significant.
	Odors and landfill gas will continue to be generated at the landfill.	Regular surface sweeps of the landfill using an organic vapor analyzer (OVA) to detect landfill gas will be made of the expansion area and the results will be presented in the quarterly report to SCAQMD. Repairs and upgrades will be made to the landfill surface and gas extraction systems as necessary to maintain compliance. Landfill gas migration and monitoring probes will be installed and monitored around the perimeter of the expansion areas as required by the Local Air Quality Management District in Rule 1150.1, the County Department of Public Works in L.A. County Building Code, Section 110.3, and the County Department of Health Services (the Local Enforcement Agency) in CCR, Title 14, as applicable. Current probes will be maintained. Evaluate operations equipment for feasibility of powering equipment with engines which meet on-highway emissions standards. Submit report of evaluation study results prior to commencing operations. Investigate feasibility of retarding fuel injection timing of diesel powered operation equipment to lower NO_X emissions. Maintain all operations equipment according to manufacturers' specifications and schedules. Instruct all equipment operators to shutdown any diesel equipment expected to idle for longer than 10 minutes. Investigate the feasibility of developing and implementing an employee ride share program.	Less than significant.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
1. Air Quality (continued)		Continue operation of gas control system and application of daily cover to minimize odor.	
2. Geotechnical			
Earthquake	The landfill gas collection system, water treatment plant, two office structures, maintenance buildings, construction equipment and refuse trucks might be exposed to earthquake hazards.	Prepare an Earthquake Preparedness Plan.	Less than significant.
Unstable Earth Conditions	Temporary unstable earth conditions could occur during the course of excavation operations.	Ensure that interim slopes during landfill development do not exceed gradients of 1.5:1.	Less than significant.
Drainage	The building of two new refuse prisms will result in a change in topography and ground surface relief which will block existing drainage patterns in the Eastern Expansion Area. The increase in topography is not expected to have an impact on the Western Expansion Area.	Construct peripheral drainage channels around the Eastern Expansion Area to route drainage around the refuse prism into existing drainage courses.	Less than significant.
Wind Erosion	At the maximum erosion rate, the development of the Western and Eastern Expansion Areas could result in a total eroded mass of 1,392 tons per year.	Develop the landfill in phases and continue to implement dust control program to minimize wind erosion.	Less than significant.
3. Flood			
Fluvial Process	The Eastern Expansion Area has well defined drainage patterns that would be blocked by the east refuse prism.	Construct peripheral diversion channels designed to accommodate unusual flow events that might turn into debris flows. Ensure that final construction drawings will be designed in accordance with the conceptual designs described in this EIR.	Less than significant.
Water Infiltration	Under low intensity rains, water will infiltrate quickly and very little runoff will occur. Under high intensity rains, most of the water will move away from the site through peripheral diversion channels and eventually be stored at Rosamond Lake.	Construct drainage diversion ditches to carry surface water runoff away from the working face.	Less than significant.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
3. Flood (continued) Stormwater Runoff	The project may slightly increase the rate of surface runoff due to a change in topography.	Construct sedimentation ponds to retain stormwater on-site and maintain pre-disturbance runoff rates. Dedicate 100-foot wide drainage easement along the east side of future 5th Street East for construction of a flood control channel in accordance with the Antelope Valley Flood Control and Water Conservation Plan. The additional runoff would result in negligible, if any, increases in the water level of Rosamond Lake.	Less than significant.
4. Fire Fire Hazard	Potential impacts associated with fire hazard include truck fires and delivery of surrounding refuse.	Remove debris from undercarriages and engine compartments of landfill equipment. Conduct annual training of all landfill personnel in fire prevention, fire extinguisher use, and emergency response procedures. Maintain 100-foot wide buffer zone at perimeter of expansion areas. Revise Emergency Response Plan, include expansion area.	Less than significant.
5. Noise	Short-term impact on ambient noise levels due to construction activities; additional traffic will result in increased noise levels in the surrounding areas; landfill operations noise levels will increase. Noise increases due solely to the project are not considered to be substantial; traffic on the nearby roadways will be the predominant noise sources.	New working face areas will be shielded behind berms to reduce off-site noise impacts. Construction activities associated with development of new landfill cells which are adjacent to existing residential development shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday only. Maintain all construction and operations equipment noise mufflers to minimize noise generation.	Less than significant.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
6. Water Quality			
Groundwater	Potential to substantially degrade groundwater quality. Potential for groundwater contamination through abandoned groundwater recharge wells in the Eastern Expansion Area.	Ensure that final construction drawings for LCRS, base liner and Groundwater Monitoring Program are consistent with conceptual designs presented in this document. A Construction Quality Assurance Plan shall be prepared and approved for installation of the base liner system and the LCRS, and a proactive Water Quality Monitoring Program will be implemented in compliance with State and Federal Subtitle D requirements. Existing wells will be properly decommissioned in accordance with agency requirements prior to excavation and liner installation.	Less than significant.
		Require that any existing wells are sealed and decommissioned by pressure grouting or other suitable method prior to landfill development.	Less than significant.
Water Table	Potential change in the configuration of the water table.	None required. The main source of groundwater recharge to the Lancaster subbasin is runoff from the San Gabriel Mountains and is not direct precipitation in the valley.	Less than significant.
7. Biota			
Construction Impacts Joshua Trees, Wildlife Species, Plant Species.	The project would result in the removal of approximately 50 acres of Joshua Tree Woodland Habitat and as many as 122 Joshua Trees. The project would also result in the phased removal of approximately 70 acres of disturbed shadscale scrub habitat.	Impacts to habitat areas will occur in phases over the life of the project. Revegetation of individual landfill cells using native species will restore vegetative cover. Revegetation is expected to take 50-100 years to re-establish a functional perennial plant community that approaches existing cover, density, and species composition capable of supporting wildlife.	Less than significant.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
7. Biota (continued)			
Operations Impact	Proposed project may attract an increased number of pest species, which could increase predatory pressure on newly hatched offspring of the federally threatened, Desert Tortoise.	Prior to initiating earth-disturbing activities in the expansion areas, conduct timely surveys to determine presence/absence of any sensitive plant species in those areas. If any such species are found, coordinate with CDFG and USFWS in implementing a transplantation program to undisturbed areas. Prior to initiating earth-disturbing activities in the expansion areas, conduct timely surveys for Desert Tortoises. If any individuals are found in these areas, coordinate with CDFG and USFWS in implementing a relocation program to undisturbed areas. Restrict the size of the working face and utilize daily cover of soil (or approved alternative covers) to reduce attraction of bird species, particularly ravens. Landfill operating procedures will restrict the size of the working face of the landfill and all exposed refuse will be covered daily to reduce the attraction of birds, mammal and insect pests.	Less than significant.
8. Cultural and Paleontological Resources			
Cultural	No direct or indirect impacts can be foreseen at this time. No significant impact on known cultural resources in the general area.	If previously unknown cultural resources are discovered, all construction activities will be halted and a qualified archeologist will be brought on-site to evaluate the resources.	Less than significant.
Paleontological	Potential for exposure of fossils during grading operations which will destroy the fossils. This destruction would be a potentially significant adverse impact on the region's paleontological resources.	A qualified paleontologist shall be retained to perform periodic inspections of excavations and, if necessary, salvage exposed fossils.	Less than significant.

TABLE 2-2
PROJECT IMPACTS SUMMARY TABLE

Issue Area	Environmental Impact	Mitigation Measures	Residual (Impact) After Mitigation
9. Traffic/Access			
Traffic Volume	The project traffic from the landfill expansion will contribute to increases in the existing traffic volumes in the area. However, even cumulative traffic impacts forecast to the year 2010 show no significant traffic impacts in the vicinity of the site. However, the project does impact the pavement structure at Avenue F between Division Street and 10th Street East and 10th Street East between Avenue F and Avenue G.	Contribute on a fair-share, pro-rata basis to the City of Lancaster for reconstruction of the pavement and thickening of the base/subbase.	Less than significant.
10. Environmental Safety			
Hazardous Waste/Materials	East and 10th Street East between Avenue F and Avenue G. Hazardous waste materials will not be accepted at the 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 wastes to be disposed of at the landfill.	During landfill operations: 1) the existing refuse inspection program shall be continued for expansion operations, 2) in the event that hazardous waste is discovered, the landfill operator shall notify the County of Los Angeles Forester and Fire Warden, and 3) a radiation detector has been installed at the gate house in order to detect the presence of radioactive materials.	Less than significant.

SECTION 3.0

PROJECT DESCRIPTION

3.0 PROJECT DESCRIPTION

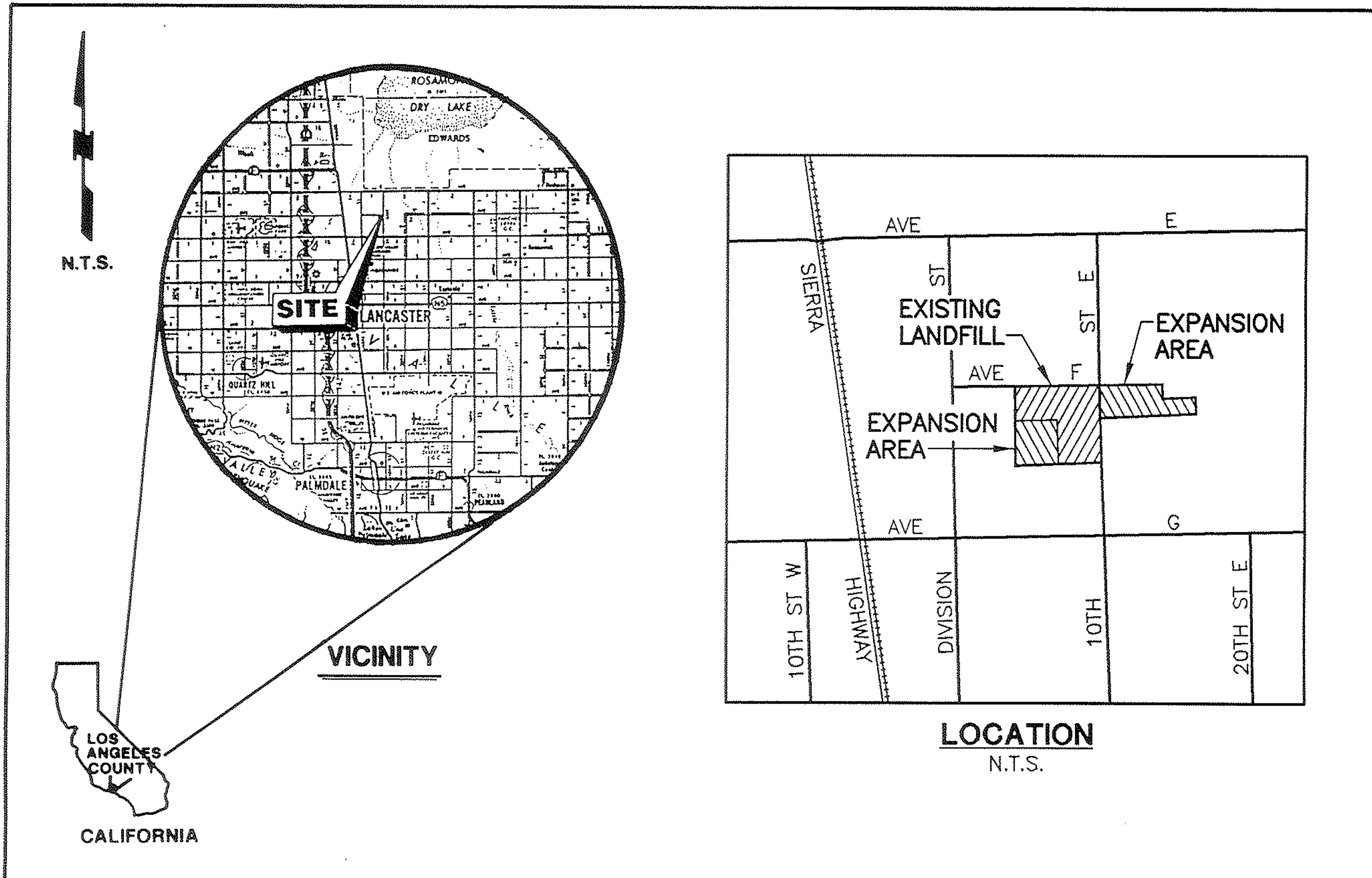
This chapter describes the general characteristics of the proposed LLRC expansion (hereinafter referred to as the "project"), the key development and operational features of the proposed landfill project, and the environmental measures proposed by the project applicant, WMC or incorporated into the project design.

3.1 PROJECT LOCATION AND BOUNDARIES

The proposed project is to expand the boundaries of an existing Class III sanitary landfill which is located within the unincorporated portion of Los Angeles County in a sparsely developed area two miles northeast of the City of Lancaster (see Figure 3-1). The project applicant, Waste Management of Lancaster, currently owns 276 acres at the intersection of 10th Street East and Avenue F. The existing permitted landfill operates on 102 acres of this property, of which 82 acres is within the boundaries of the permitted refuse footprint. The remaining 20 acres is occupied by ancillary facilities.

Current land use surrounding the immediate site is predominantly open space with some mobile homes and a small radio station transmitter located within a distance of one mile. The surrounding area is zoned D-2-1 (Desert/Mountain one acre minimum) and D-2-2 (Desert/Mountain two acre minimum).

The proposed landfill site is comprised of the current landfill area, the Western Expansion Area (WEA) and the Eastern Expansion Area (EEA). The WEA will consist of approximately 62 acres now used as a borrow area. The EEA will encompass approximately 112 acres of presently undeveloped land and is separated from the existing site by a County road (10th Street East). Figure 3-2, Site Plan, shows the limits of the existing site and proposed expansion areas and landfill footprint. Figure 3-3, Existing Topography, is a topographical map of the site. Any open space designated areas surrounding the project site will not be utilized by the project for equipment or vehicle storage, access to the area of development or for dumping of fill materials. Figure 3-3a, Existing Landfill Facilities, depicts the infrastructure and support facilities which currently exist at the landfill. This includes a welding shop, maintenance building, office building and gate house, two scales, two underground fuel tanks and fuel pumping stations, a truck and landfill equipment wash pad, potable

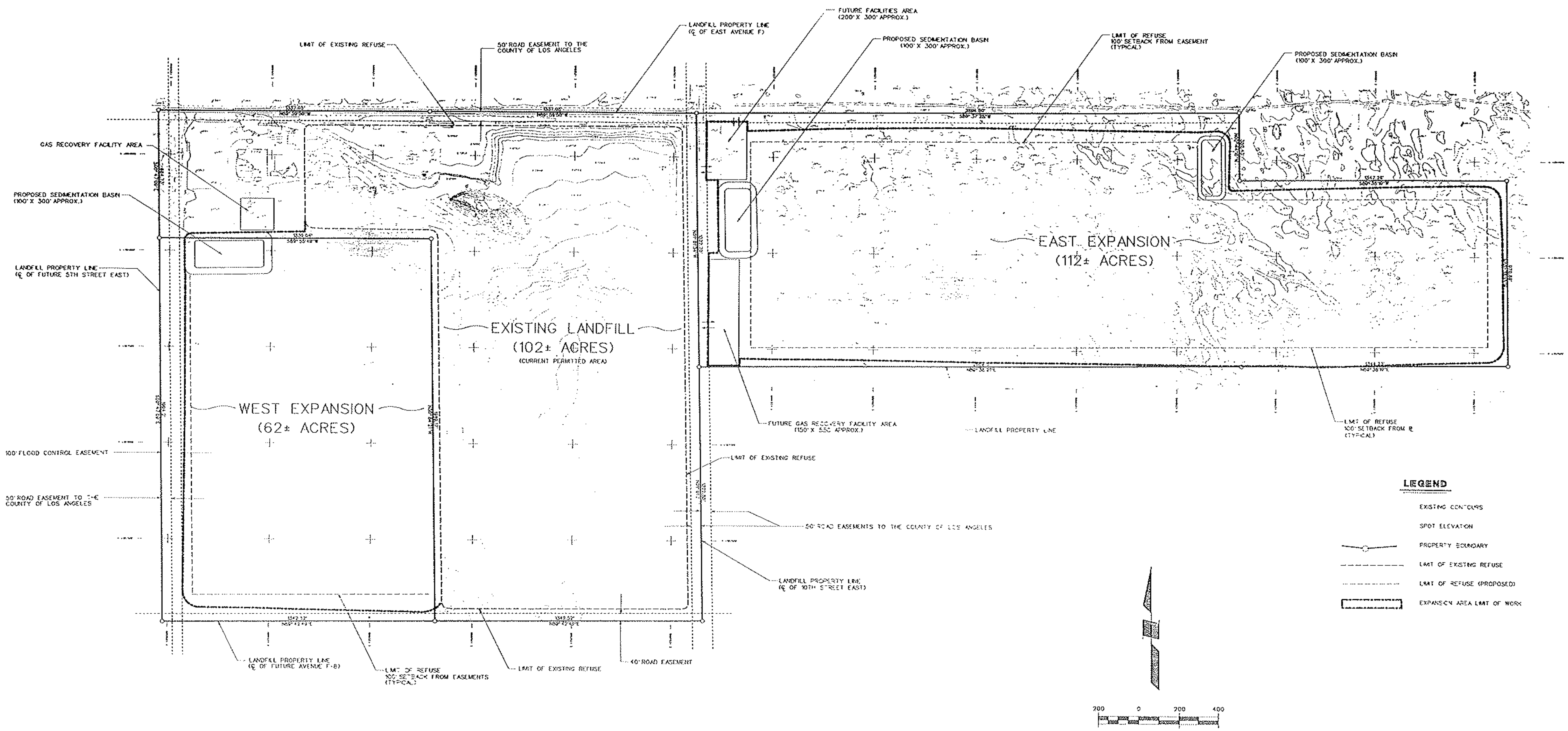


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–1

SITE VICINITY / LOCATION

Source : Rust Design Report 1994



NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27, 1992 AT A SCALE OF 1"=100' AND 2' CONTOUR INTERVAL.

2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4069), DATED 5-18-81.

3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1986).

4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.

5- GRID BASED ON STATE PLANE COORDINATE SYSTEM.

6- ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS.

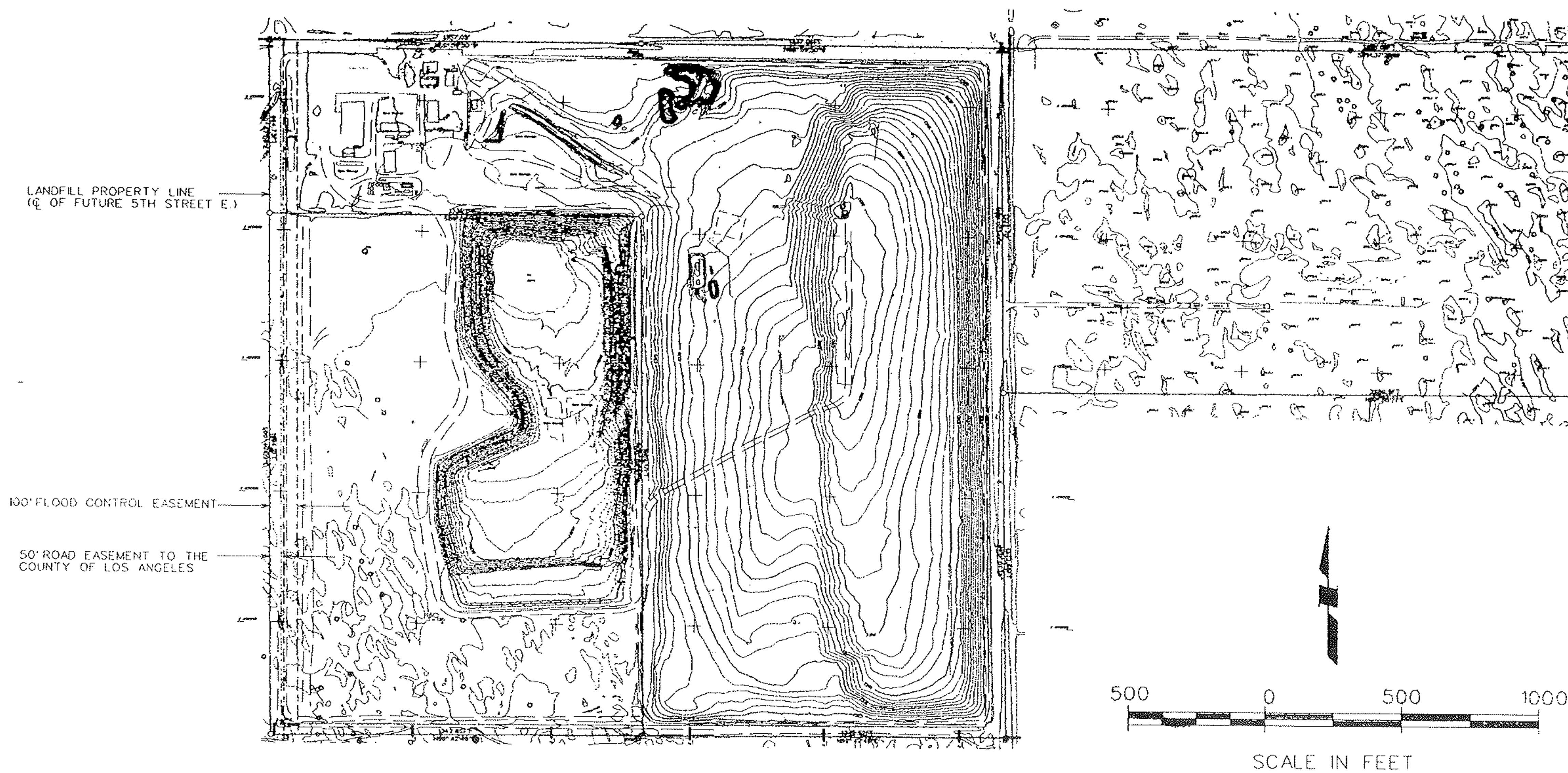
7- REFUSE LIMIT SETBACK 100 FEET FROM PROPERTY LINE AND/OR ROAD EASEMENT WHERE APPLICABLE (AS SHOWN).

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–2

SITE PLAN

Source : Rust Design Report 1994



NOTES

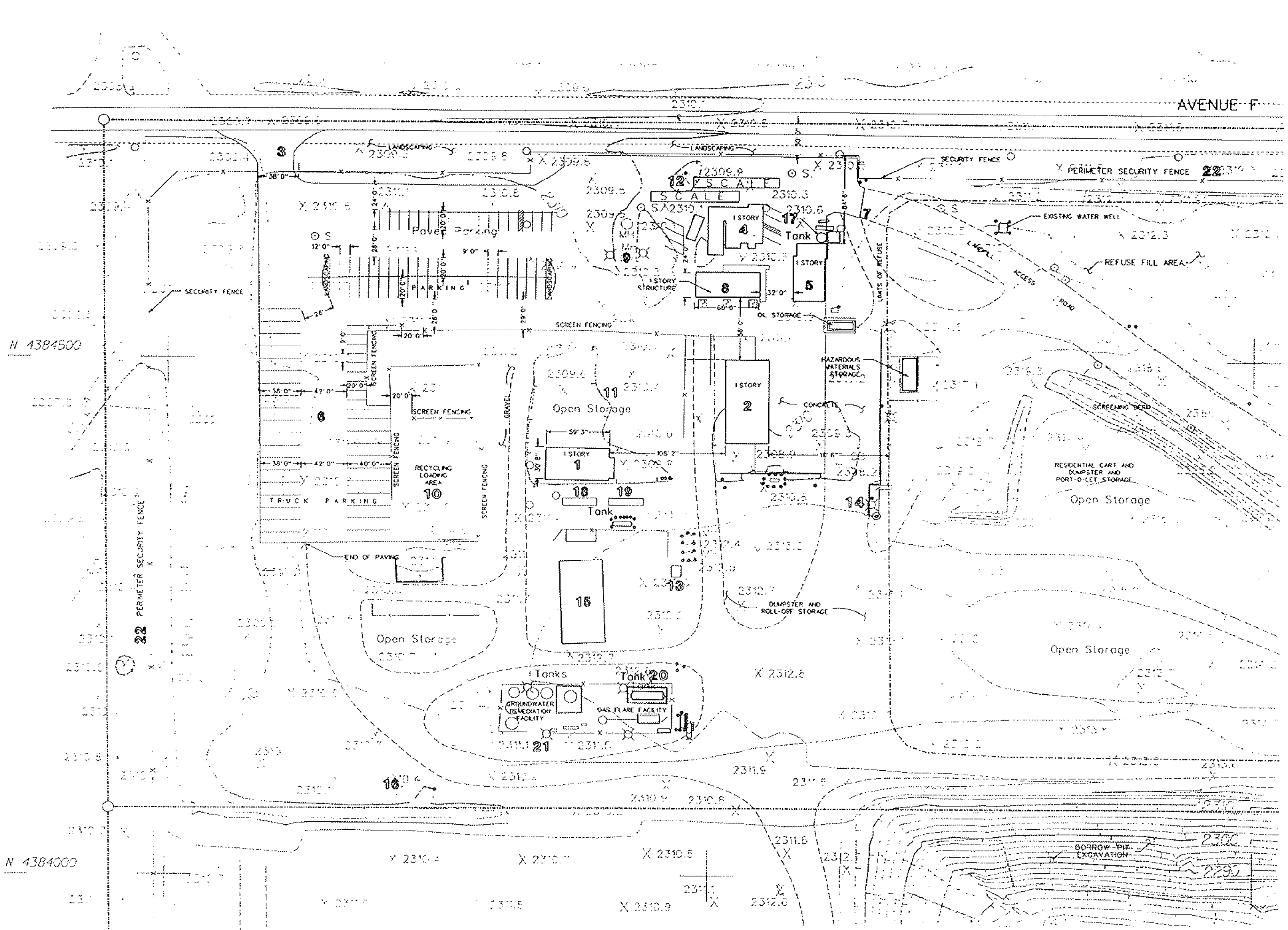
1. Topography compiled by photogrammetric method from aerial photogrcphy date February 20, 1995.
2. Eastern area expansion topography compiled by photogrammetric method from aerial photography date February 1994.

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–3

EXISTING TOPOGRAPHY

Source : Rust



SCALE IN FEET

LEGEND

EXISTING CONTOUR
PROPERTY BOUNDARY
EXISTING REFUSE LIMIT

NOTES

1. Topography compiled by photogrammetric method from aerial photography dated February 7, 1996

FACILITY LEGEND

1 CONTAINER REPAIR SHOP (1800 SF)
2 MAINTENANCE BUILDING (3200 SF)
3 FACILITY ENTRANCE
4 OFFICE BUILDING/GATE HOUSE (2100 SF)
5 PAINT SHOP (1400 SF)
6 REFUSE VEHICLE PARKING AREA
7 LANDFILL ENTRANCE
8 ONE STORY OFFICE BUILDING
9 UNDERGROUND FUEL TANK (20000 GAL.)
10 RECYCLING LOADING AREA
11 DUMPSTER STORAGE
12 SCALES
13 UNDERGROUND FUEL TANK (10000 GAL.)
14 LANDFILL EQUIPMENT FUEL PUMP
15 TRUCK/EQUIPMENT WASH PAD
16 RECYCLABLE STORAGE
17 DRINKING WATER STORAGE TANK
18 NONPOTABLE WATER TANK (DISCONNECTED)
19 NONPOTABLE WATER TANK
20 GAS FLARE CONDENSATE TANK
21 GROUNDWATER REMEDIATION FACILITY
22 PERIMETER SECURITY FENCE

LEGAL DESCRIPTION

NE 1/4 OF NE 1/4 EX OF STS OF SEC -35 TWP-08N RGE-012

SITE ADDRESS

600 EAST AVE. "F"
LANCASTER, CA 93535

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 3-3a
EXISTING LANDFILL FACILITIES

Source: Rust Environment & Infrastructure

and non-potable water tanks, a gas flare facility, and a groundwater remediation facility. In addition, there are paved areas for employee and visitor parking as well as parking of the following equipment:

11	residential refuse/recycling trucks
6	commercial refuse/recycling trucks
3	roll-off trucks
1	portable toilet pumping trucks
6	miscellaneous support vehicles (mostly pick-up trucks)

The landfill also currently stores approximately 200 portable toilets, 200 dumpsters, and 700 90-gallon residential refuse carts. These storage areas are screened from off-site views by berms.

Figure 3-3b, Landscaping Plan for New Landfill Entrance, presents a landscape plan including irrigation and planting details for a new landfill entrance to serve the existing landfill area, WEA and ancillary facilities. Entrance facilities for the EEA would be as shown on Figure 3-2.

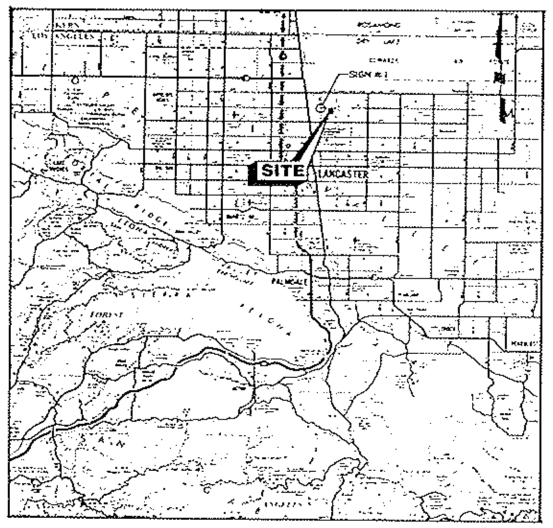
Further information concerning site conditions is provided in the Environmental Setting Section (Section 4.0) of the EIR.

The legal description of the EEA is the NW and NE quarters of the NW quarter of Section 36 and the south 30 acres of the NW quarter of the NE quarter of Section 36, Township 8 North, Range 12 West, San Bernardino Meridian. The legal description of the WEA is the SW quarter of the NE quarter of Section 35 and the South 1/2 quarter of the NW quarter of the NE quarter of Section 35, Township 8 North, Range 12 West, San Bernardino Meridian.

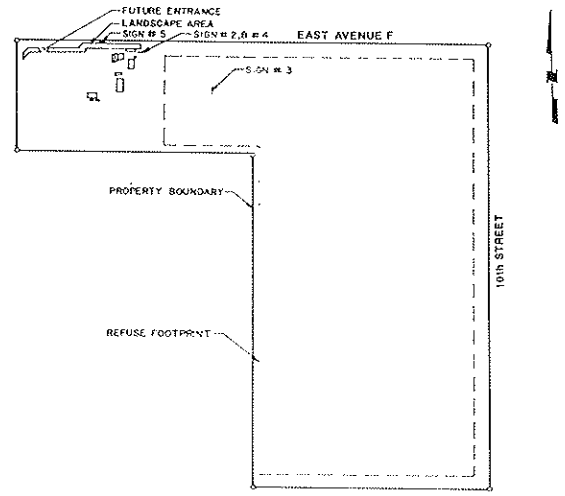
The WEA assessor's parcel numbers are (bk-pg-par) 3175-003-002 to 008 and the EEA assessor's parcel numbers are (bk-pg-par) 3175-007-026, 3175-007-900, 3175-008-009.

3.2 PROJECT OBJECTIVES

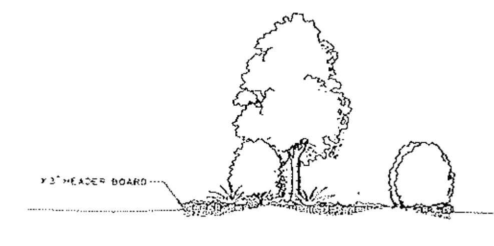
The general objective of the proposed project is to implement a landfill expansion in the Lancaster area of Los Angeles County. The landfill expansion will provide



VICINITY MAP



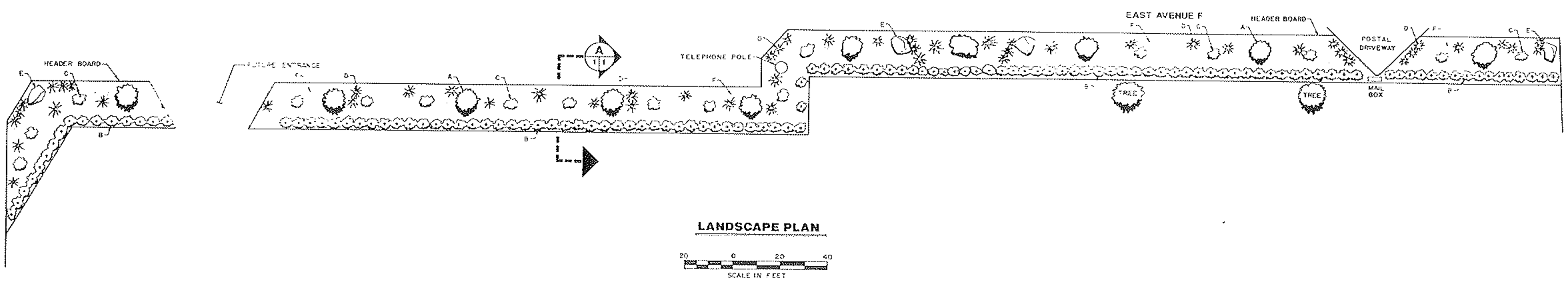
SITE MAP



SECTION A 1

LANDSCAPE LEGEND

SYM	QNTY.	DESCRIPTION
A	9	15 GAL. SHADE TREES/2 STAKES EA.
B	123	5 GAL. WAX-LEAF PRIVET
C	18	5 GAL. SEAGREEN SHRUBS
D	60	1 GAL. ASSORTED SHRUBS
E	4	MED. BOULDERS (DECO) ROCKS
F	60	FLATS GROUND COVER



LANDSCAPE PLAN

NOTES

Landscape Plan

Sprinkler system not shown for clarity. Sprinkler heads are spaced at approximately six foot intervals throughout landscaped area.

2. Sprinkler system is operated on an automatic timer system.

3. Landscape area installed by Segale's Landscape, 7025 W. Avenue F, Lancaster, California 93536

Sign Plans

All signs are inspected regularly by landfill personnel.

2. Signs are secured to posts or existing fences.

3. Maintenance and cleaning of signs are the responsibility of the landfill personnel.

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 3-3b
LANDSCAPING PLAN
FOR NEW ENTRANCE
Source: Rust Environment & Infrastructure

landfill services to serve the needs for both existing and future residents and businesses. General and specific objectives of Los Angeles County and the project proponent are as described below:

3.2.1 LOS ANGELES COUNTY

General objectives of the County of Los Angeles for solid waste management countywide are listed below and are based on the recommendations in the Los Angeles County Solid Waste Management Action Plan adopted by the Board of Supervisors on April 5, 1988.

- ❑ To reaffirm its policy of managing solid waste in Los Angeles County through a reasonable balance of public and private operations and facilities including a regional public landfill system.

- ❑ To adopt a policy providing for 50 years of permitted landfill capacity to be held in public ownership, with appropriate land use protections, for use through public, private or public/private joint venture operations as necessary to achieve the above objective.

- ❑ To immediately initiate studies necessary to determine the feasibility of public ownership and permitting of a landfill site identified in the Alternate Site Study; initiate discussions with property owners regarding availability of property; secure purchase options as appropriate; utilize the County Refuse Disposal Trust Fund and the Districts Joint Refuse Trust Fund for these efforts; and recommend further Board action as studies are completed for public acquisition and permitting of landfills at these sites.

- ❑ To support the Countywide implementation of residential and commercial recycling and composting programs and a household hazardous waste program, and instruct the Director of Public Works, Director of Health Services, Fire Chief, Chief Administrative Officer and County Counsel, with the assistance of the County Solid Waste Management Committee, to recommend specific actions to the Board to achieve implementation including ordinances, licensing requirements and legislative requirements.

- ❑ To request each city in the County to provide for each household, whether single or multi-family residences, and each business to be billed directly for the full cost of refuse collection and disposal.

- ❑ To support implementation of Statewide public education/awareness programs regarding solid waste issues and the necessity for recycling.

3.2.2 PROJECT PROPONENT

- Conduct a landfill operation adjacent to the existing facility in order to continue existing operation.
- Continue to provide a regional resource to the Lancaster area.
- Increase landfill capacity in the County within close proximity to the expanding population of the Antelope Valley.
- Increase landfill capacity in the County without producing groundwater quality impacts caused by landfill leachate.
- Minimize the negative impacts of solid waste disposal through a well-engineered and environmentally sound operation.
- Dispose of refuse in a relatively isolated area which efficiently utilizes land space and natural topography.
- Provide additional needed landfill capacity for the County which is consistent with the goals and policies of the Los Angeles County General and Solid Waste Management Plans and the City of Lancaster's General Plan.

3.3 PROJECT NEED

This subsection presents a discussion of the projected population growth and waste stream growth in the Antelope Valley Region.

3.3.1 POPULATION PROJECTIONS

A pattern of steady growth in the Antelope Valley is expected to continue through at least the first two decades of the next century. Its high desert climate coupled with the growth of the industrial areas and the future Palmdale International Airport have caused the Antelope Valley to rank as one of the fastest growing areas of Los Angeles County. Based upon population projections of the LACDRP, the Valley is expected to grow in population by as much as 111,000 people from 1980 to the year 2000. Table 3-1 lists the expected population by five-year increments.

The year 2000 population projection of 218,000 represents 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, they can periodically decelerate for short periods but with the same eventual outcome.

TABLE 3-1
ANTELOPE VALLEY PROJECTED POPULATION GROWTH
1980 - 2000

Year	Population	Net Gain
1980	107,000	
1985	121,000	14,000
1990	155,000*	34,000
1995	188,000*	33,000
2000	218,000*	30,000

Source: Antelope Valley Areawide General Plan, a component of the Los Angeles County General Plan. Adopted by the Board of Supervisors on December 4, 1986.
* Projected in 1986; current actual population is estimated to be nearly 220,000.

3.3.2 DISPOSAL CAPACITY STATUS

3.3.2.1 COUNTYWIDE DISPOSAL CAPACITY STATUS

In preparing the draft Los Angeles County Countywide Siting Element (dated January, 1996), the Los Angeles County Department of Public Works (DPW) determined the remaining permitted disposal capacity of all the existing solid waste disposal facilities in the County. This information is represented in Table 3-2, and is current as of January, 1996 which is the most current information available from the DPW. Table 3-2 does not reflect the approval of any proposed expansions, new landfills or changes which have taken place at the disposal facilities since January, 1996. Table 3-2 takes into account the following:

- ❑ Average daily disposal rates for 1995 in tons based on a six-day per week operation for the period of October 1, 1994 through September 30, 1995 including in-county and out-of-county waste disposal.
- ❑ Quantity of municipal solid waste disposed in 1995 (in million tons).
- ❑ Estimated remaining permitted capacity in million tons and million cubic yards.

TABLE 3-2

REMAINING PERMITTED COMBINED DISPOSAL CAPACITY OF EXISTING SOLID WASTE DISPOSAL FACILITIES IN LOS ANGELES COUNTY AS OF JANUARY 1996

Facility	Solid Waste Facility Permit	Location City / Uninc. Area	Operation Days/week	Jan. 1996 SWFP Daily Capacity	LUP Daily Capacity	1995 Average Daily Disposal 6 days/ week (Tons) (See Note 1) Source			Quantity of MSW Disposed in 1995 (Million Tons) (See Note 1) Source			Estimated remaining permitted capacity (effective January 1996)		Comments
				Tons	Tons	In-County	Out-of-County	Total	In-County	Out-of-County	Total	Million Tons	Million (a) Cubic Yards	
CLASS III LANDFILLS														
Antelope Valley	19-AA-0009	Palmdale	7	1,400 (b)	—	548	—	548	0.17	—	0.17	2.13	3.55	The proposed expansion in the unincorporated area is not fully permitted as of 1/1/96.
Azusa Land Reclamation	19-AA-0013	Azusa	6	6,000 (c)	—	1,188	140	1,328	0.37	0.04	0.41	3.09 (d)	4.41	Class III portion of the Landfill only. WDRs require closure of the facility by 12/31/97. See footnote (d).
BKK	19-AF-0001	West Covina	6	12,000 (e)	—	3,748	953	9,701	2.73	0.30	3.03	2.65	4.42	Date of closure 9/15/96 per a settlement dated 1/17/96 between BKK Corporation and the City of West Covina.
Bradley	19-AR-0008	Los Angeles	6	7,000	—	4,475	9	4,484	1.40	0.003	1.40	7.51	10.72	LUP expires 4/13/2007.
Brand Park	19-AA-0006	Glendale	5	102	—	22	—	22	0.0068	—	0.01	0.59	0.99	Limited to City of Glendale Department of Public Works use only.
Burbank	19-AA-0040	Burbank	5	240	—	134	—	134	0.04	—	0.04	6.36	10.60	Limited to the City's use only and provided waste is collected by the City's staff.
Calabasas	19-AA-0056	Uninc.	6	3,500	—	2,017	317	2,334	0.63	0.099	0.73	15.00	30.00	Limited to the Calabasas Wasteshed only.
Chiquita Canyon	19-AA-0052	Uninc.	7	5,000	—	1,337	151	1,489	0.42	0.047	0.46	1.85	2.74	LUP expires 11/24/97.
Lancaster	19-AA-0050	Lancaster	6	1,000	—	338	258	596	0.11	0.08	0.19	0.47	0.69	Approximate closure date 4/98.
Lopez Canyon	19-AA-0820	Los Angeles	5	4,000	4,000	2,927	—	2,927	0.91	—	0.91	0.52 (f)	0.83	LUP expires 7/1/96. Limited to City of Los Angeles use only and subject to collection of waste by the City Bureau of Sanitation.
Pebbly Beach	19-AA-0061	Uninc.	6	33	—	13	—	13	0.004	—	0.004	0.040	0.06	Summer time capacity is 30 tpd.
Puente Hills	19-AA-0053	Uninc.	6	13,200	13,200	10,334	7	10,341	3.22	0.002	3.23	29.33	62.40	LUP limits waste disposal to 72,000 tons per week. Does not accept waste from the City of Los Angeles and Orange County.
San Clemente	19-AA-0063	Uninc.	2	1.5	—	2	—	2	0.0007	—	0.0007	0.048	0.38	Landfill owned and operated by the U. S. Navy.
Scholl Canyon	19-AA-0012	Glendale	6	3,400	—	1,487	0.39	1,487	0.46	0.0001	0.4641	10.90	22.71	Limited to the Scholl Canyon wasteshed only.
Spadra	19-AA-0015	Uninc./ Pomona	6	3,700	—	1,994	130	2,124	0.62	0.040	0.6626	2.15	5.08	LUP limits the waste disposal rate to 15,000 tons per week. The facility does not accept waste from the City of Los Angeles and Orange County.
Sunshine Canyon	19-AA-0853	Uninc.	6	6,600	6,600	—	—	—	—	—	—	16.90	23.72	Not operational as of 1/1/96.
Two Harbors	19-AA-0062	Uninc.	5	—	—	0.54	—	0.54	0.0002	—	0.0002	—	—	Facility closed 9/30/95.
Whittier (Savage Canyon)	19-AH-0001	Whittier	6	350	—	228.85	—	229	0.07	—	0.0714	2.66	4.44	Limited to the City of Whittier use only.
TOTAL				67,527		35,792	1,966	37,758	11.17	0.61	11.78	102.19	187.74	
UNCLASSIFIED LANDFILLS (INERT SOLID WASTE ONLY)														
Azusa Land Reclamation	19-AA-0013	Azusa	6	6,500 (i)	—	—	—	—	—	—	—	26.500	17.667	Unclassified portion of the Landfill only.
Peck Road/ Gravel Pit	19-AR-0838	Monrovia	6	1,210	—	338	2	340	0.11	0.001	0.106	10.076	6.717	
Reliance Pit #2	19-AR-0854	Irwindale	5	6,000	—	1,345	56	1,401	0.42	0.017	0.437	16.563	11.042	
TOTAL				13,710		1,682	58	1,740	0.52	0.02	0.543	53.139	35.426	
TRANSFORMATION FACILITIES														
Commerce Refuse To-Energy Facility	19-AA-0506	Commerce	7	1,000	—	278	48	326	0.09	0.015	0.10	467 (g)	—	Assumed to remain operational during the 15 - year planning period.
Southeast Resource Recovery Facility	19-AK-0083	Long Beach	7	2,240	—	1,289	201	1,490	0.40	0.063	0.46	1,510 (h)	—	Assumed to remain operational during the 15 - year planning period.
TOTAL				3,240		1,567	249	1,816	0.49	0.078	0.57	1,977	—	

NOTES:

1. Disposal quantities are based on tonnages reported by owners/operators of permitted solid waste disposal facilities to the DPW as a part of 1995 DQRD and/or Solid Waste Management Fee invoice payments. The 1995 disposal tonnages listed above are based on tonnage figures for the period of October 1, 1994 through September 30, 1995. These figures will be updated in the final CSE once complete 1995 DQRD are available.
2. Estimated Remaining Permitted Capacity based on landfill owner/operator responses to a written survey conducted by the DPW in January 1995 as well as a review of site specific permit criteria established by local land use agencies, LEAs, CRWQCBs, and the SCAQMD.

FOOTNOTES:

(a) Conversion factor based on in-place solid waste density if provided by landfill operators, otherwise a conversion factor of 1,200 lb/cy was used.
(b) Antelope Valley Landfill's daily capacity of 1,400 tons is based on the SWFP issued on 12/26/95.
(c) Permitted daily capacity of 6,500 tpd consists of 6,000 tpd of refuse and 500 tpd of inert waste. Refuse disposal is limited to the Class III portion of the Landfill.
(d) The CRWQCB-Los Angeles Region approved WDRs which allow the Landfill to continue accepting MSW through 12/31/97. In the interim, BFI must demonstrate that ground water protection can be ensured for the landfill to be allowed to continue accepting MSW beyond 12/31/97.
(e) Daily capacity established in 6/90 Notice and Order, as amended by the City of West Covina.
(f) Remaining permitted capacity based on LUP expiration date of 7/1/96.
(g) Based on SWFP limit of 2,800 tons per week, expressed as a daily average, six days/week.
(h) Based on SWFP limit of 471,000 tons per year, expressed as a daily average, six days/week.
(i) See footnote (c). Waste quantities (inert waste plus refuse) cannot exceed 6,500 tpd.

Source: Los Angeles County Department of Public Works, January 1996.

Abbreviations:

BFI	Browning-Ferris Industries, Inc.,
CRWQCB	California Regional Water Quality Control Board
CSE	Countywide Siting Element
DQRD	Disposal Quantity Reporting Data
DPW	Los Angeles County Department of Public Works
LEA	Local Enforcement Agency
LUP	Land Use Permit
MSW	Municipal Solid Waste
SCAQMD	South Coast Air Quality Management District
SWFP	Solid Waste Facility Permit
tpd-6	Tons per day, 6 days/ week
Uninc.	Unincorporated
WDRs	Waste Discharge Requirements

According to this table from the Countywide Siting Element, the residents and businesses in Los Angeles County disposed of approximately 12.3 million tons of solid waste in 1995 at existing permitted land disposal and transformation facilities located in and out of the County. This disposal quantity translates into an average disposal rate of approximately 39,280 tons per day (six-day week) countywide with 35,790 tons per day being disposed at Class III landfills. Table 3-2 shows that, as of January 1, 1996, the remaining permitted Class III landfill capacity in Los Angeles County is estimated at 102.2 million tons. Based on the 1995 average disposal rate of 35,790 tons per day (six-day week), excluding waste being imported to the County, this capacity will be mathematically exhausted in less than nine years or in the year 2005.

According to the Countywide Siting Element, however, in order to make a realistic assessment of the adequacy of the remaining Class III disposal capacity, many factors must be taken into consideration which severely hinder the accessibility of the remaining disposal capacity or affect solid waste generation. These factors include: expiration of the Land Use Permit; Waste Discharge Requirements Permit; Solid Waste Facilities Permit; air quality permits; restrictions on the acceptance of waste generated outside jurisdictional and/or wasteshed boundaries; permit restrictions on the amount of waste that can be accepted daily and/or weekly; geographic barriers; and/or limitations on the amount of waste that can be handled by a facility on a daily basis due to lack of manpower and equipment. When these factors are considered, the analysis indicates that a permitted daily disposal capacity shortfall may occur as early as 1999 as indicated in Table 3-3 (also taken from the Countywide Siting Element). Table 3-3 provides a "time-to-crisis" analysis for Los Angeles County which considers waste generation projections based on the CIWMB's recently adopted Adjustment Methodology, existing permitted disposal capacity only, full implementation of AB 939 waste diversion programs and, as indicated above, the achievement of the 25 and 50 percent waste diversion mandates by 1995 and the year 2000, respectively. The analysis considers full use of the permitted disposal capacity available at the recently approved expansion of the Sunshine Canyon Landfill beginning July 1, 1996. It also includes a permitted daily capacity of 6,000 tpd of refuse for the Azusa Land Reclamation facility which has since been revoked (October, 1996). This would result in a 6,000 tpd reduction in the daily disposal capacity shown on Table 3-3.

TABLE 3-3
ANTELOPE VALLEY AREA DISPOSAL CAPACITY ANALYSIS
1993-2003 WITHOUT LANCASTER LANDFILL EXPANSION **
(Antelope Valley Landfill combined capacity - Cities of Palmdale and Lancaster and County Unincorporated Area)

1	2	3	4	5	6	7
Year	Waste Generation Rate (tons per day)	Percent Diversion	Disposal Need (tons per day)	Antelope * Valley	Lancaster *	Waste Disposal Shortfall (tons per day)
1993	1,978	18.00%	1,622	600 4.8	1,000 0.9	0
1994	2,030	23.40%	1,555	600 4.6	1,000 0.6	0
1995	2,084	29.60%	1,467	600 4.4	1,000 0.3	0
1996	2,143	33.90%	1,416	600 *** 4.2	1,000 C	0
1997	2,203	40.60%	1,308	600 4.1		708
1998	2,264	45.10%	1,243	600 3.9		643
1999	2,327	48.80%	1,192	600 3.7		592
2000	2,392	50.00%	1,196	600 3.5		596
2001	2,443	50.00%	1,221	600 3.3		621
2002	2,494	50.00%	1,247	600 3.1		647
2003	2,548	50.00%	1,274	600 2.9		674

NOTES:

* Expected daily tonnage, 6 day average (tpd-6)
Remaining landfill capacity at year's end, Million Tons

Assumes 1,200 pounds per cubic yard (recommended by the California Integrated Waste Management Board) as in place density.

** Waste generation and diversion rates are total averages projected for the Antelope Valley wasteshed, including Cities of Lancaster, Palmdale, and North Unincorporated Areas as identified in each jurisdiction's Source Reduction and Recycling Element (See Table 8-1).

*** On December 26, 1995, the County Department of Health Services issued a revised Solid Waste Facility Permit for the facility in the City of Palmdale. The revised permit provides for increase in disposal from 750 to 1,400 tons per day of waste and the use of a geosynthetic blanket as an alternate daily cover.

C = Closed - Maximum permitted capacity is reached or land use permit expires.

Source: Table B, Letter from County of Los Angeles, Department of Public Works to County of Los Angeles, Department of Regional Planning dated September 22, 1993 (File WM-2).

3.3.2.2 ANTELOPE VALLEY DISPOSAL CAPACITY STATUS

To provide a more local representation of remaining disposal capacity, pertinent information from Table 3-2 for the Antelope Valley and Lancaster Landfills which comprise the Class III landfill facilities in the Antelope Valley has been summarized separately below:

Facility	Jan. 1996 SWFP Daily Capacity (Tons)	1995 Average Daily Disposal (Tons)			Quantity of MSW Disposed in 1995 (Million Tons)			Estimated remaining permitted capacity (effective Jan. 1996)	
		Source			Source				
		In-County	Out-of-County	Total	In-County	Out-of-County	Total	Millions Tons	Million Cubic Yards
Antelope Valley **	1400 *	548	--	548	0.17	--	0.17	2.13	3.55
Lancaster	1000	338	258	596	0.11	0.08	0.19	0.47	0.69
Total		**886**	**258**	**1144**	**0.28**	**0.08**	**0.36**	**2.6**	**4.24**

* Based on a revised SWFP issued on 12/26/95.
** Information does not reflect a proposed expansion in the unincorporated area which was not fully permitted as of 1/1/96.

Based on a total 1995 average daily disposal rate of 1,144 tons per day (six-day week), including waste being imported to the County, the capacity in the Antelope Valley will be mathematically exhausted in slightly more than seven years. The remaining capacity for the LLRC will be exhausted in slightly more than two years. As previously discussed for the entire County and presented in Table 3-3, many factors can reduce the mathematically computed remaining capacity including the ability for both the Antelope Valley and Lancaster Landfills to take in more than double their current average daily disposal rate. This could in theory cause these facilities to reach their current remaining capacity in half the time projected.

These figures can only be regarded as very rough approximations in light of the very dynamic nature of the solid waste disposal business in southern California. Currently proposed landfill expansions and rail-haul projects have the potential to significantly impact solid waste disposal rates and trends throughout the region. These projects, as they apply to the LLRC expansion project, are discussed in greater detail in Section 7.0 of this document.

Regardless of ongoing changes in other landfills within and outside of Los Angeles County, prudent planning should strive to ensure sufficient landfill capacity for the Antelope Valley area, given the expanding population of the region. This is consistent with the Countywide Siting Element's goals and policies which specifically state that to protect the health, welfare and safety of all citizens by addressing the disposal needs of the County through development of environmentally safe and technically feasible disposal facilities for solid waste which cannot be reduced, recycled or composted, the County "will assist the project proponent to expedite, where appropriate, the expansion of the following landfills provided these sites are found to be environmentally sound and technically feasible:

- Antelope Valley and Lancaster Landfills in the County unincorporated area of the Antelope Valley."

The recent Solid Waste Facility Permit revision for increased daily tonnage and a proposed expansion into an unincorporated area of the Antelope Valley Landfill in conjunction with the proposed expansion of the LLRC should provide sufficient landfill capacity for the Antelope Valley area well into the first two decades of the 21st Century.

3.4 GENERAL SITE CHARACTERISTICS

3.4.1 SERVICE AREA

The customers served by the existing landfill include residential, commercial, light industrial, and construction customers. The local area served is generally the Lancaster/Palmdale area and surrounding areas (i.e., Quartz Hill, Antelope Acres, Lake Los Angeles, Pear Blossom, and other unincorporated L.A. County areas). Waste is also received from Edwards AFB (approximately 20 miles), Acton (15 miles), Wrightwood (45 miles), and Gorman (50 miles). In addition, two transfer trucks (approximately 15 tons each) per day deliver waste from a transfer station in the City of Los Angeles.

3.4.2 SITE CAPACITY AND LIFE

According to Table 3-2, the LLRC currently (January 1, 1996) has approximately 470,000 tons of remaining refuse capacity. Based on current daily waste disposal rates at the landfill, it is estimated that the landfill will reach its current permitted capacity in approximately 1998.

The proposed expansion of the landfill will add a total of approximately 8,720,400 tons of refuse capacity: 3,375,000 tons of capacity in the WEA and over the existing landfill and 5,345,400 tons in the EEA. This additional refuse capacity is expected to extend the life of the landfill until at least the year 2010. If the other facility in the region (e.g., the Antelope Valley Landfill) reaches its permitted capacity and closes within this time frame, it is possible that the LLRC will begin to receive at least some of the waste from that area. According to information presented in Table 3-2, it is estimated that the Antelope Valley Landfill would reach its current remaining capacity in approximately 13 years, based on the current average daily inflow rate (1995 average of 548 tons per day), however, it should be noted that the current permit for the site has a closure date of July, 1999. The operator for the Antelope Valley Landfill is currently pursuing a revision to its permit to expand that facility which would increase the current capacity and site life.

3.4.3 SITE DESIGNATION

The existing LLRC is operating as a Class III (formerly Class II-2) (nonhazardous municipal solid waste) sanitary landfill facility. Landfills are classified according to their ability to contain waste as defined in the CCR, Title 23, Chapter 15, Section 2533. The site will be accepting special wastes as described below as part of the proposed project.

3.4.4 WASTES TO BE RECEIVED

The landfill is currently permitted to accept up to 1,000 tons per day of municipal solid waste and the applicant proposes to accept up to 1,700 tons per day. The percent of incoming waste as presented in the site's 1992 RDSI is 22 percent municipal refuse, 27 percent commercial/industrial wastes, 18 percent construction/demolition Wastes, and 33 percent mixed waste. These municipal solid waste categories are described as follows:

- ❑ Municipal Refuse and Commercial/Industrial: Includes solid waste generated by residences, commercial accounts such as retail stores, restaurants, bars and offices, and nonhazardous waste generated by the industrial sector.
- ❑ Construction and Demolition: Includes construction and demolition materials such as wood, metal, glass, concrete and asphalt.
- ❑ Mixed Waste: Includes paper, green and wood wastes, glass, plastic, etc.

Similar waste types and quantities are proposed for the project although the percentage mix may change over time due to ongoing recycling and source reduction. The construction and demolition material is currently recycled. The components of this material are commonly metal, wood, asphalt and concrete. When construction and demolition material is identified at the gatehouse, the generator is directed to one of three storage areas: woodwaste, asphalt/concrete or metal. The construction and demolition material must be segregated into its components by the generator in order to be recycled. After an adequate amount of material is accumulated in the storage area, the material is either transported for recycling or recycled on-site for re-use/re-sale.

3.4.4.1 SPECIAL WASTES

The site does not accept any special wastes. The landfill operator is proposing to receive sewage sludge and asbestos waste which are described as special wastes in CCR, Title 14, Chapter 9, Article 6.1, Section 18722(j). These special wastes are those which require collection, processing, handling and disposal procedures different than those normally associated with municipal solid wastes and are not considered hazardous. The site also accepts what WMC terms "Special Wastes" which are hard to handle wastes requiring internal company review. The site operator uses a Special Waste Implementation Plan to handle these wastes as presented in Appendix J. A brief description of the special wastes proposed to be accepted for the new project follows.

3.4.4.1.1 Sewage Sludge

The project site is permitted under its current Waste Discharge Requirements from the RWQCB to receive dewatered sewage sludge with 50 percent solids or more.

Any sludge, prior to acceptance at the site, will be tested for heavy metals and moisture content. Depending on the situation, Total Petroleum Hydrocarbons (TPH) or testing of additional constituents may also be required for the sludge. Lab analysis will be submitted to the LLRC for review. After approval by LLRC staff, the sludge will be accepted at the site.

LLRC has submitted a proposal to the LEA to use sludge as a soil amendment. This proposal involves disking sewage sludge into interim cover areas on the landfill to enhance revegetation efforts. Approval was granted on May 9, 1995 by the LEA. The project was evaluated at the end of a six-month period (November 1995) and a report was submitted to the LEA. Permitted use approval is currently pending LEA approval.

3.4.4.1.2 Asbestos

The landfill operator proposes to accept asbestos (friable and non-friable) and asbestos-containing material for disposal by obtaining RWQCB and CIWMB approval. All applicable local, state and federal regulations regarding the disposal on asbestos and asbestos-containing waste will be complied with. An Asbestos Waste Handling Plan for friable asbestos waste disposal procedures has been prepared and will be adhered to during disposal operations. A summary of this plan is contained in the following paragraphs.

Asbestos waste must be properly moistened to prevent or control dust and must be double wrapped in sealed plastic bags. The bags containing friable asbestos wastes shall be labeled as follows: **"CAUTION - CONTAINS ASBESTOS FIBERS. AVOID CREATING DUST, MAY CAUSE SERIOUS BODILY HARM"**.

The generator or the hauler will be required to call the Landfill Manager to alert him of the delivery date and time so that the necessary preparations for immediate burial can be made. No asbestos waste will be accepted at the landfill without this prior notification.

All other applicable State and Federal regulations concerning this waste stream must be met prior to acceptance of this waste stream for disposal. It is the responsibility of the generator to know and comply with these regulations.

All asbestos containers shall be tagged with a warning label. Labels approved by the Environmental Protection Agency (EPA) or the Occupational Safety and Health Administration (OSHA) shall be worded, as shown below. The Secretary may authorize the use of other similar labels.

CAUTION
CONTAINS ASBESTOS FIBERS AVOID OPENING OR BREAKING CONTAINER BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

OR

CAUTION
CONTAINS ASBESTOS FIBERS AVOID CREATING DUST MAY CAUSE SERIOUS BODILY HARM

OR

DANGER
CONTAINS ASBESTOS FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD

Disposal of Asbestos Waste

The transporter of the asbestos waste shall notify the landfill operator that the load contains asbestos. The landfill operator will inspect the asbestos waste loads to verify that the asbestos is properly contained in leak-tight containers and labeled appropriately. If the wastes are not properly containerized, and the landfill operator accepts the load, the operator will thoroughly soak the asbestos with a water spray prior to unloading and immediately cover the wastes with non-waste containing material (i.e., cover soil or other approved alternative daily cover material) which prevents fiber release prior to compacting the waste in the landfill.

Waste Deposition and Covering

The operator will prepare a trench within a refuse cell to receive only asbestos wastes. The dimensions of the trench will depend on the amount of asbestos to be disposed. The location, depth, and dimensions of asbestos disposed trenches will be recorded and maintained on-site. The trench shall be as narrow as possible while complying with all applicable trenching regulations. The trench will be designed perpendicular to the prevailing winds. Asbestos containers will be placed into the trench with sufficient care to avoid breaking the containers. The containerized waste will be covered within 18 hours with a minimum of six inches of non-waste. Improperly containerized asbestos containing material will be completely covered with six inches of non-waste containing material immediately. Asbestos containing material will not be compacted until completely covered with six inches of non-waste containing material.

Closure of an Asbestos Containing Cell

Upon approaching final grades, closure of a cell containing asbestos material will entail covering the cell with an additional 30 inches of compacted non-waste containing material to provide a total 36 inches of non-waste cover material upon which the final cover will be placed.

Control of Public Access

The operator will provide barriers adequate to control public access. At a minimum, the operator will limit access to the asbestos management site to no more than two entrances by gates that can be locked when left unattended and by fencing adequate to deter access by the general public. Warning signs will be placed at the entrance and at intervals no greater than 100 feet along the perimeter of the sections where asbestos waste is deposited. The sign will read as follows:

ASBESTOS WASTE DISPOSAL SITE BREATHING ASBESTOS DUST MAY CAUSE LUNG DISEASE AND CANCER

The signs will be posted in such a manner and location that a person can easily read the legend and conform to the requirements of 20-inch by 14-inch upright format signs specified in 29 CFR 1910.145(d)(4). Spacing between any two lines must be at least equal to the height of the upper of the two lines.

The operator will have at least one employee who has received at least 24 hours of course work in an EPA certified training course which deals with the identification, hazards and management of asbestos wastes. An employee with this training shall be present at the facility at all times when asbestos wastes are being disposed.

3.4.4.1.3 Non-Hazardous Contaminated Soil

The landfill operator proposes to accept non-hazardous contaminated soils which may be accepted with RWQCB and South Coast Air Quality Management District (SCAQMD) approval. These soils can be used as daily cover if the material meets permit guidelines. Special handling of soils is necessary when the materials originate from a volatile organic compound (VOC) contaminated site as defined by District Rule 1166.

3.4.4.1.4 Street Sweeping and Catchbasin Debris

These wastes, derived from governmental institutions, are only accepted at the site if determined to be non-hazardous and low in liquids content. The restriction on liquids is necessary because a common method of cleaning catchbasins is to flush them with water and vacuum pump the debris into storage tanks.

3.4.4.1.5 Tires

Shredded tires are accepted at the site.

3.4.4.1.6 Woodwaste

Woodwaste recovery is a part of the operations at the site. Woodwaste loads are screened for acceptability, then stockpiled for approximately two to three weeks before being chipped on-site. The wood chipping is accomplished periodically with a tub grinder which is a contracted operation and is not a part of the permanent site operations. The chipped wood is then transported to end users, which include electric generating plants or local landscape services.

3.4.4.1.7 Bulky Materials

These wastes (also known as "white goods") include large, hard-to-handle items such as appliances and furniture. The landfill allows self-haulers to dispose of bulky items at the landfill.

3.4.4.1.8 Agricultural Waste

The site accepts agricultural waste as described in the 1985 Los Angeles County Solid Waste Management Plan (LACoSWMP). This waste includes the residues resulting from diverse agricultural activities such as the planting and harvesting of row, field, tree and vine crops, the production of milk, and the raising of animals for slaughter. Agricultural waste produced in field and orchards is comprised of plant residues, such as stems, stalks, straw, leaves, prunings, and abandoned produce. Waste produced in dairies and feedlots consists of manure, straw, etc.

3.4.4.2 Hazardous Waste

The site does not accept hazardous waste. WMC has established a hazardous waste exclusion program, which includes visual load inspections, a detailed training program pertaining to hazardous wastes, and an emergency response training program. A sign is posted at the facility entrance which clearly indicates that no hazardous wastes are accepted at the landfill.

In addition, WMC has developed a set of corporate policies and procedures which govern the identification and handling of Title 22 special wastes at all of its existing and proposed landfills and transfer stations. These policies and procedures are designed to provide compliance with federal, state, and local regulatory requirements. As implemented, the procedures address definition of special wastes, identification of those wastes within the overall wastestream, exclusion procedures, and documentation. These policies and procedures, which are already in force at the existing landfill, will be implemented for the proposed expansion to eliminate potentially hazardous wastes from entering the landfill.

3.4.4.2.1 Household Hazardous Waste

The project applicant's hazardous waste exclusion program will limit the intake of all hazardous wastes, including those from households. WMC will encourage educational means to help reduce the illegal disposal of household hazardous wastes. WMC will also support the County's household hazardous waste programs identified in the Household Hazardous Waste Element of the Los Angeles County Hazardous Waste Management Plan.

3.4.4.2.2 Radioactive Waste

Radioactive waste is typically detected by the scalehouse radiation detector. Loads containing radioactive waste are not accepted. Radioactive waste that avoids detection at the scalehouse and is then discovered to be in the working face will be disposed of by a qualified outside contractor. The operator currently contracts with

Advanced Environmental Technical Services (AETS) to manage unacceptable waste according to applicable local, State, and Federal requirements.

3.5 SITE OPERATIONAL FEATURES

3.5.1 OPERATING HOURS

The proposed new site operating hours would be Monday through Saturday from 5:00 a.m. to 8:00 p.m. Current operating hours are Monday through Saturday from 6:00 a.m. to 5:00 p.m. The landfill will be closed Sundays and holidays. Site operations may extend beyond the gate hours to allow for site preparation and daily covering; however, no additional refuse will be accepted at the scalehouse beyond gate hours except on special occasions and during emergencies.

3.5.2 EMPLOYEES

Development of the landfill will require a varying number of both permanent and short-term employees. Short-term employees will be required during construction of major project elements (e.g., liners, leachate collection and recovery system, and support facilities). The initial construction period will be approximately four months from initiation of excavation to acceptance of the first waste transfer trucks. During construction, approximately six additional people will be employed.

Landfill operations (excluding collection operations) are supported by 13 permanent employees which include:

Classification	**Number of Personnel**
Landfill Manager	1
Operations Supervisor	1
Equipment Operators	3
Gate Attendants	2
Mechanics	1
Laborers	3
Site Engineer	1
Secretary	1
Total	**13**

It is anticipated that the completed facility will need an additional one or two employees to operate the site when the average incoming waste load approaches 1,500 tpd.

3.5.3 EQUIPMENT

At a minimum, the following equipment is currently maintained on site and is used for landfill operations (excluding collection operations):

Type	Number
Trash Compactor	2 (One active, one back-up)
Loader	1
Bulldozers	2 (One active, one back-up)
Scrapers	1
Motorgrader	1
Water Truck	1

The equipment listed above is adequate to ensure that units will be available during routine equipment maintenance or major repairs of other units. Local owners/operators and contractors can provide additional equipment, if demand warrants. In addition, back-up rental units are available.

3.5.4 DISPOSAL PROCEDURES

The landfill expansion areas will be constructed using the area fill method. Compacted refuse will be placed in cells approximately 20 feet in thickness. Interim slopes typically will be constructed at 3:1 (horizontal to vertical) maximum steepness. Minimum slope for the top of a cell will be approximately three percent.

Refuse will be spread and compacted in thin layers approximately two feet thick on an approximately 100 to 200-foot wide sloped working face. Except for the first layer of refuse over the liner which must have a thickness of approximately ten feet in order to protect the liner. Landfill compaction equipment, consisting of trash compactors or equivalent, will make numerous passes over each layer of refuse in order to achieve a minimum in-place refuse density of 1,200 pounds per cubic yard, and reduce the long-term settlement of the landfill. Large or bulky objects will be separated from refuse at the working face. These objects will be placed in the upper portion of the advancing refuse layer and thoroughly crushed by compaction equipment to prevent bridging and localized subsidence at a later time.

3.5.4.1 DAILY COVER

The purpose of daily cover is to control various nuisances, such as blowing litter, odor and vector propagation. The advancing face will be covered daily with a minimum six-inch compacted (eight inches in wet weather) thickness of soil cover or Alternative Daily Cover (ADC). Current daily cover requirements are estimated at 290 cubic yards of soil per day in dry weather and 400 cubic yards of soil per day in wet weather.

The ADC, Amoco Non-woven Fabric No. 4551, was used instead of soil during a test period in January and February 1991 at the landfill. Results indicated that refuse coverage with ADC was at least as good as with soil, with fewer personnel hours involved, and an estimated reduction in daily soil usage of 68 percent (Waste Management of North America, 1991). Approval was granted by the Los Angeles County Department of Health Services (LEA) to initiate a year long test program which is required by the CIWMB to ensure performance standards. These standards are described in CCR, Title 14, Division 7, Chapter 3, Section 17683. The performance standards are intended to measure impacts such as vectors, odor, fire and litter.

The LLRC is presently using a Sanicover ADC produced by Fluid Systems, Inc. The ADC is used at the end of each working day when there has not been any rain and when rains are not expected. Landfill personnel pull the ADC over the trash and anchor the edges with tires to prevent the wind from removing the tarp. Soil is still used daily but use of the ADC minimizes soil usage. Since the soil is sandy, a higher than average usage rate occurs when ADC is not in use. The tarp is manually pulled from the trash at the beginning of each day and set aside, out of the way of refuse truck operations.

The LLRC is still in the demonstration and performance period of ADC use. Approval of the ADC project involves revision of the SWFP. Approval of the project is pending evaluation of greenwaste as a secondary ADC. To avoid making two revisions to the SWFP for the same purpose, the LEA is waiting for demonstration and approval of the green material project before issuing final approval.

3.5.4.2 INTERMEDIATE COVER

When no additional waste materials are scheduled to be placed over the surface of an advancing lift within 180 days, or some other period prescribed in the WDRs issued by the RWQCB, the top and side slopes of the lift will be covered with a minimum 12-inch compacted thickness of intermediate soil cover.

3.5.5 RECYCLING PROCEDURES

As part of a developing response to the requirements of AB 939, the following describes the recycling elements which will be initiated at the LLRC. These operations were included in the site's recently revised SWFP.

3.5.5.1 REDEMPTION CENTER

For customers using their own vehicles such as pick-ups, etc. to haul waste to the landfill, a redemption center will be operated on-site to accept aluminum and bi-metal cans, glass bottles, Polyethylene Terephthalate (PET) and newspaper. Customers will be encouraged to separate recyclables from refuse prior to coming to the facility. There are several established redemption centers within the Lancaster city limits between the landfill and the overwhelming majority of the Antelope Valley population. Therefore, it is anticipated that most customers with recyclables will use those centers because they are more conveniently located than the LLRC. Landfill staff have the address and phone numbers of these centers and refer inquiries regarding redemption centers to those facilities.

As discussed in the Special Wastes section, woodwaste recovery is also expected to be a part of future operations. A diversion amount of 200 to 250 cy/day could be expected.

3.5.5.2 RESIDENTIAL AND COMMERCIAL RECYCLING

A curbside recycling program has been implemented to collect commingled recyclables from local residences. Three categories of recyclables (e.g., green material, newsprint and commingled recyclables) are collected by Waste Management of Lancaster collection vehicles and are stored on-site for transport to processing facilities. In addition, cardboard and office paper is collected from local businesses. The following information details the two operations.

Refuse/recyclable collection vehicles weigh-in at the landfill gate, proceed to the working face to dump refuse, return to the landfill gate to weigh out, and finally proceed to the transport containers to dump the commingled recyclables.

Cardboard and office paper are collected separately from refuse. Front-end loader trucks are used to collect corrugated cardboard and office paper. As with the curbside collection vehicles, the quantity and origin of cardboard or office paper will be determined and recorded prior to transfer to the transport roll-offs. Collected materials will be transferred to transport roll-off containers on-site which are transported off-site as they are filled.

In the future, an onsite sort line and balers may be added to increase efficiency and local control of recyclable tracking. Should an onsite sort line and balers be added to existing operations, the following additional employees are anticipated to be required.

EMPLOYEE CLASSIFICATION	NUMBER OF PERSONNEL
Sorters	14
Supervisor	1
Forklift Operator	1
Loader	1
Bailer Operator	1
Quality Control	2

Specific records of refuse and recyclable weights and origin will be maintained on site to ensure proper application of AB 939 credits.

3.5.5.3 COMPOSTING

LLRC has incorporated composting into its site operations. The compost feedstock is green material and shredded woodwaste. LLRC does not amend the compost with any sludge or animal manure. The facility currently composts about 60 cubic yards of green material.

3.5.6 WATER SUPPLY

Water will be needed at the site for dust control and compaction, fire protection, and drinking water for site personnel. Current estimated daily water consumption for dust control and compaction at the site is estimated to be 44,600 gallons per day (gpd). The average demand for the proposed project over the lifetime of the facility is estimated to be about 55,750 gpd. Projections are based on existing and proposed landfills in California.

It is anticipated that this water need will continue to be met by utilizing one existing well currently used for site operations and treated groundwater from the groundwater remediation system.

VOCs have been detected in groundwater samples from monitoring wells located within the shallow groundwater aquifer at the landfill. In 1990, 25 temporary monitoring wells were installed at the site to define the areas of impacted groundwater in the aquifer beneath the site. In 1991, based on monitoring results from these wells, two primary areas of impacted groundwater were identified. A northerly plume is located in the northern portion of the WEA. According to the landfill operator, the source of the plume may be the former truck washing area located south of the maintenance yard. A southerly plume is located offsite, south of the current site's southern boundary. The source of the southerly plume appears to be located to the northwest of the southeast corner of the existing landfill. No VOCs have been detected in the 250 feet deep production wells at the site.

In February 1994, a groundwater remediation program was implemented at the landfill to clean-up the contaminated groundwater. Five groundwater extraction wells were installed to pump and treat the contaminated groundwater. Three extraction wells are located on the landfill site and two are located south of the landfill perimeter. This treatment consists of pumping the groundwater through activated carbon filters to remove VOCs from the water.

The groundwater remediation system currently treats 140 gallons per minute (gpm) of groundwater, 24 hours per day, for a total of 201,000 gpd. Treated groundwater is pumped back into the ground through five groundwater recharge wells located in the proposed future EEA. Currently, the landfill operator is using the treated groundwater for dust control, landscape irrigation and emergency fire suppression. It is anticipated that treated groundwater will continue to be used for dust control throughout the life of the groundwater remediation program, which is expected to terminate in three to ten years. At that time, the operator will switch over to using on-site wells for all water needs, as was done prior to the implementation of the groundwater remediation program. Potable water needs are met by an existing site well in the uncontaminated 250 foot deep aquifer beneath the site. On-site extraction wells provide a total of approximately 70 gpm of available water on a continued basis. There will be no new water sources needed or developed for the proposed expansion project, and no need to hook-up to any public or private water providers in the area.

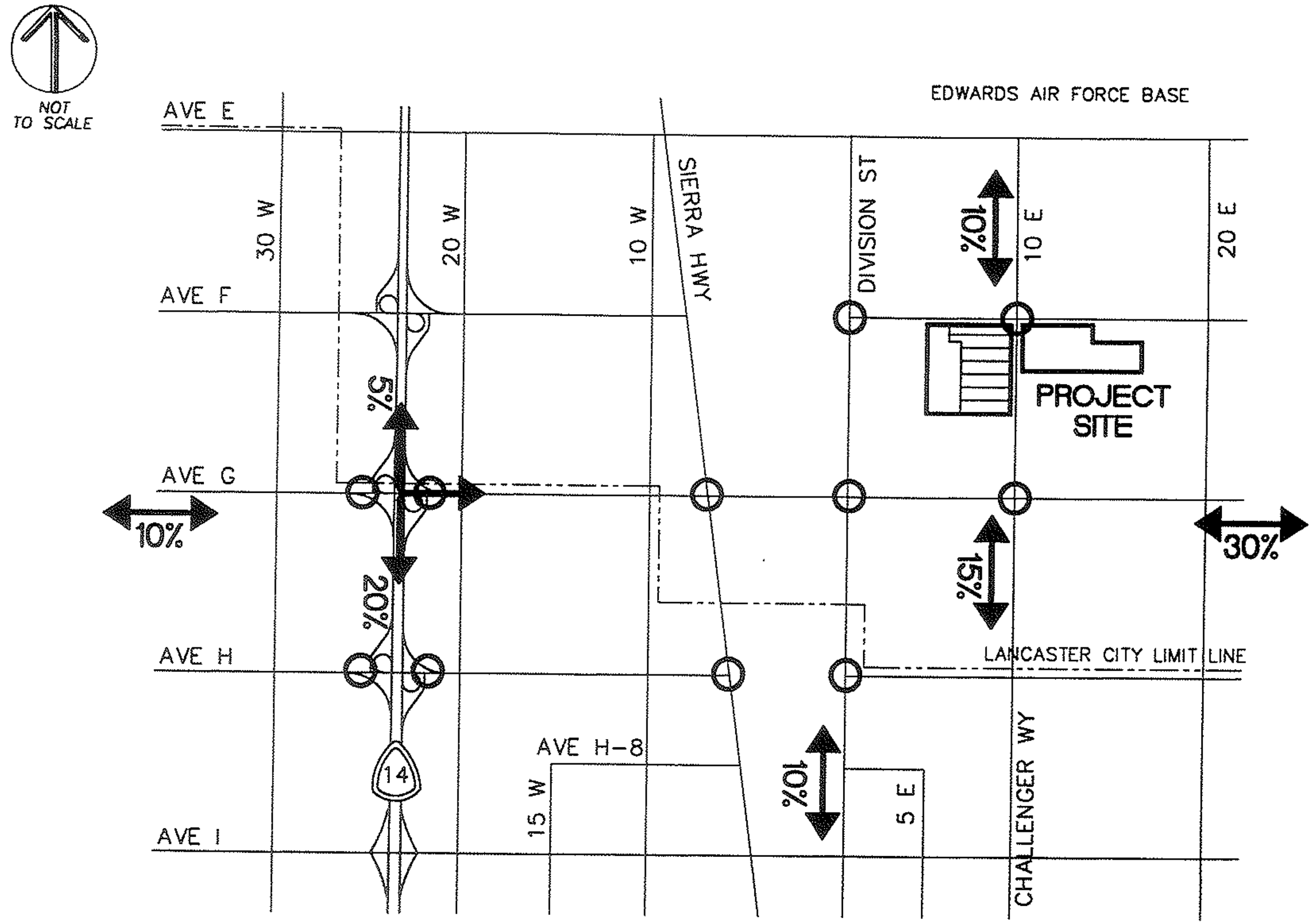
3.6 PROJECT DESIGN FEATURES

Construction of the landfill expansion will include new entrance facilities, haul roads and engineered containment systems (i.e., base liner, leachate management systems, etc.) for most of the expansion to separate and completely isolate the new areas. The new western expansion refuse face will not be completely isolated from the existing refuse face. The following describes the proposed infrastructure, liner design including the excavation plan, fill sequencing plans and cover design as well as landfill stability. The environmental control and monitoring systems are discussed separately in Sections 3.7 and 3.8.

3.6.1 ACCESS ROADS/SITE SECURITY

The existing site is currently accessible via Avenue F, a two-lane County highway. The entrance is a 40-foot wide all-weather access. The site entrance plan is shown in Figure 3-3. Road improvements which may be undertaken in the future include addition of left-turn lanes at 10th Street East and East Avenue F as a safety measure. Access to the landfill is restricted by security fencing surrounding the site and a gate which is attended during operating hours and locked when the site is closed. "No Trespassing" signs are posted at minimum 250-foot intervals along the landfill perimeter. The site entrance is located on East Avenue F approximately 2,450 feet west of the East Avenue F and 10th East Street intersection.

Refuse truck traffic going to the landfill currently uses the routes indicated on Figure 3-4, Traffic Access Routes, which depicts the percentage of incoming truck traffic which comes to the landfill on various routes. Haul roads to allow refuse



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–4

TRAFFIC ACCESS

Source: DKS Associates Traffic Impact Study, 1996

vehicle access to the active disposal areas will be constructed as shown on the Site Development Plans. Modifications may be made as necessary by the Landfill Manager to allow for safe and efficient operation. These roads will be constructed at grades no steeper than ten percent.

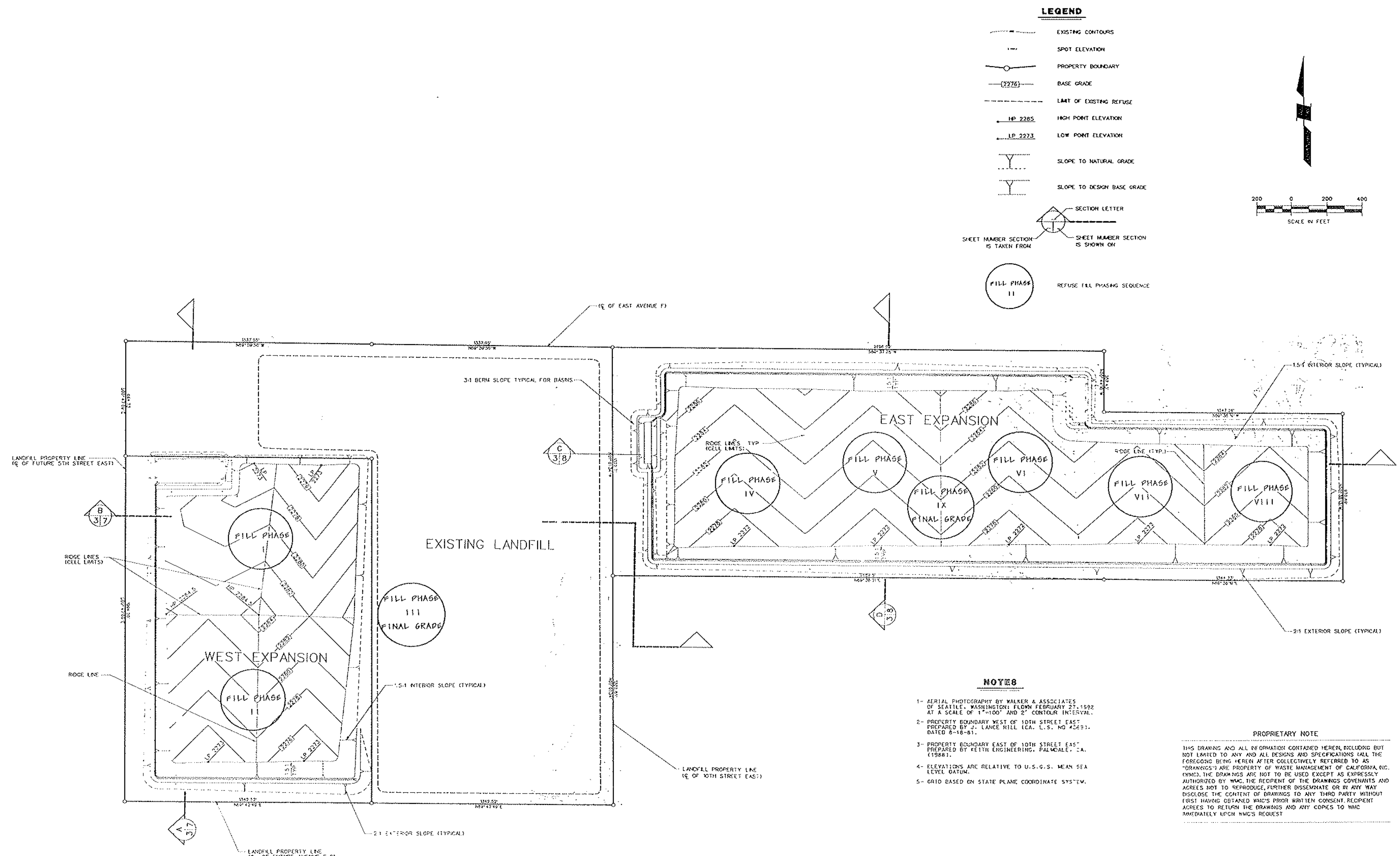
The temporary roads generally will be abandoned as landfilling progresses and these roads are covered by advancing lifts of refuse. Traffic will be directed by site personnel, road signs, barricades, and/or pylons.

3.6.2 ENTRANCE AND SUPPORT FACILITIES

A new facility area will be provided in the northwest corner of the EEA (see Figure 3-2). This new facility area will be constructed concurrently with the development of Phase IV in the EEA (see Excavation Plan, Subsection 3.3, below). Two paved access ways will be provided for the EEA landfill operation, one on the east side of 10th Street East, south of East Avenue F and one south of the existing dirt road access to the Antelope Valley Model Airfield on 10th Street East (See Figure 3-2). The existing facilities (office trailers, maintenance facilities) will be relocated to this new facility area. All construction will be performed in compliance with applicable local, State and Federal building requirements, including applicable requirements for a methane gas protection system in accordance with Los Angeles County Building Code, Section 110.3.

3.6.3 EXCAVATION PLAN

The base excavation plan for the landfill is shown on Figure 3-5. The landfill expansion fill phasing sequence begins with Fill Phases I and II in the WEA. Fill Phase III will be over the top of the Fill Phases I and II and the existing landfill and will bring the entire area up to final grades. Concurrent with Fill Phase III in the WEA, Fill Phase IV in the EEA will be excavated to provide daily and final cover for Fill Phase III. The EEA will be developed from west to east (Fill Phases IV through VIII). Fill Phase IX will be over the top of Phases IV through VIII and will bring the entire EEA to final grade. Earthwork for construction of the landfill will include large-scale excavation of on-site soils for use as daily landfill soil cover, intermediate soil cover, and construction of earth fills (i.e., berms and foundations for access roads and drainage facilities over refuse) and soil liners. Excavated soils will be suitable for



NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27,1992 AT A SCALE OF 1"=100' AND 2' CONTOUR INTERVAL.
2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4069). DATED 8-18-81.
3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1988).
4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.
5- GRID BASED ON STATE PLANE COORDINATE SYSTEM.

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–5

BASE EXCAVATION PLAN

Source : Rust Design Report 1994

direct use as daily and intermediate soil cover. Selected earth fills and soils intended for use as final cover or for constructing soil liners will be soils having a permeability to meet Federal Subtitle D requirements sufficiently.

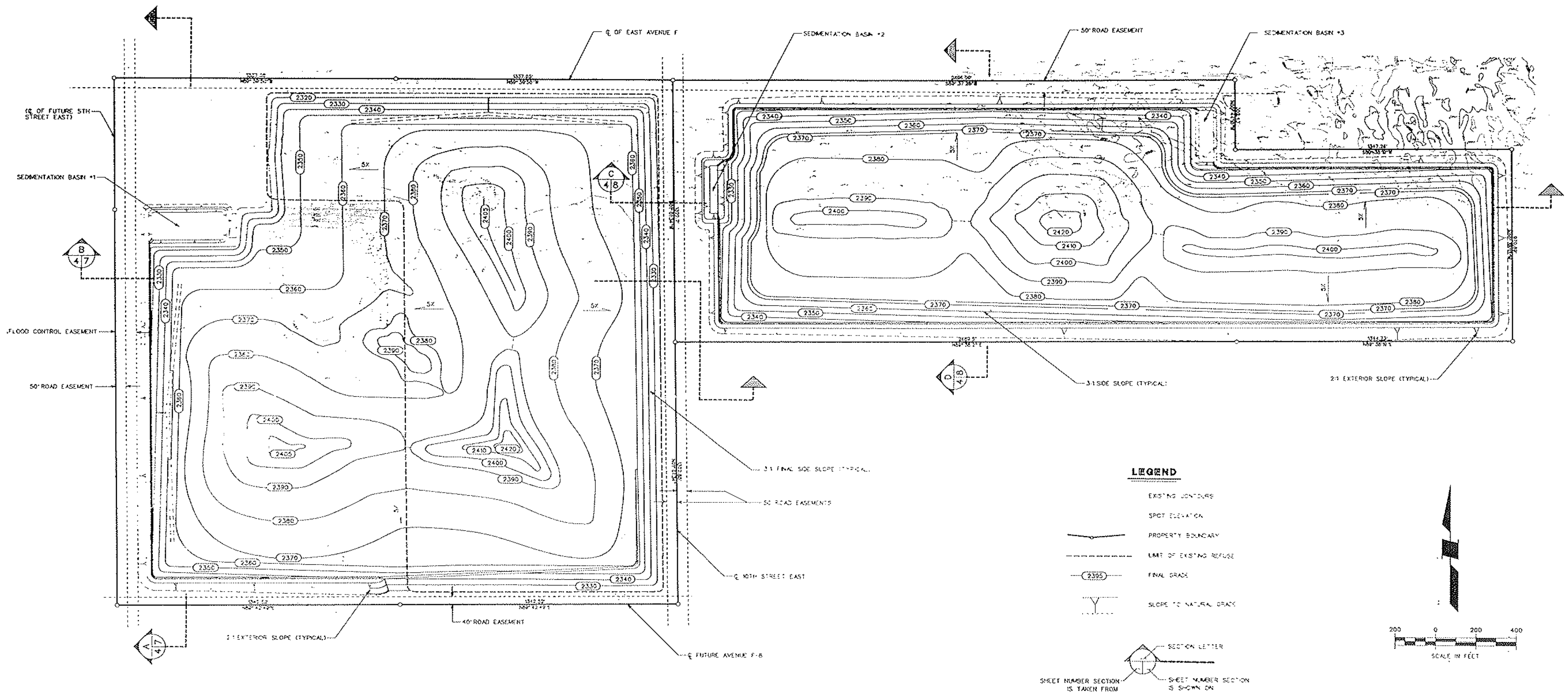
Areas to receive earth fill will be stripped of vegetation and topsoil, scarified, and compacted prior to placing the initial layer of earthfill. Earthfill then will be placed by spreading the specified soil in uniform layers and watering or drying them, as necessary. The layers will be compacted with suitable equipment.

During the excavation and landfill operations, soils needed for construction of both low-permeability soil liners and vegetated final cover will be selectively stockpiled. Soil materials excavated from each landfill phase will be stockpiled in an inactive area within the landfill footprint. This material will be used when appropriate for drainage construction, soil cover, or clay liner.

3.6.3.1 MATERIAL NEEDS

The base excavation plan (Figure 3-5) and final grade configuration (see Figure 3-6) will yield a gross airspace of approximately 23.2 million cubic yards (mcy) gross airspace being the volume between the bottom of excavation and the top of the final closure cover. The net airspace is the gross airspace minus the volume taken by the drainage and protective liner and the final closure cover system. The net airspace is that volume available for solid waste and the associated daily and intermediate cover. The design configurations for this project will yield a net airspace of approximately 21.9 mcy. The total volume of daily and intermediate cover will be 4.4 mcy. The resulting airspace available for waste, therefore, will be 17.5 mcy.

The operation's daily working face for placement of waste was assumed to be 100 feet by 200 feet. Twelve inches of intermediate cover will be placed over the top and side slope of the waste and six inches of daily soil cover, or an approved ADC, will be placed over the working face at the end of each day.



NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27, 1992 AT A SCALE OF 1"=400' AND 2' INTERVAL CONTOUR.

2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4089), DATED [illegible].

3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. [illegible]

4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3 - 6

FINAL GRADES

Source: Rust Environment & Infrastructure

A summary of the total material needs follows:

Closure Cover	1.0 mcy
Leachate/Liner System	0.3 mcy
Daily and Intermediate Cover	4.4 mcy
Construction Material	0.8 mcy
Total Materials Needed	**6.5 mcy**

On-site drainage materials have not yet been identified. If on-site drainage materials will not meet the specifications, 0.3 mcy of this material will be imported from the nearest available commercial quarry operation. Total excavation, or "embankment excavation", will be 6.5 mcy. In order to obtain the on-site materials, WMC proposes to excavate to a maximum depth of approximately 45 feet within the landfill footprint. The depth of excavation will be limited to four to nine feet above the depth to ground water. Refuse will be placed at a minimum of two feet above the maximum excavation over a leachate drainage system and composite liner system.

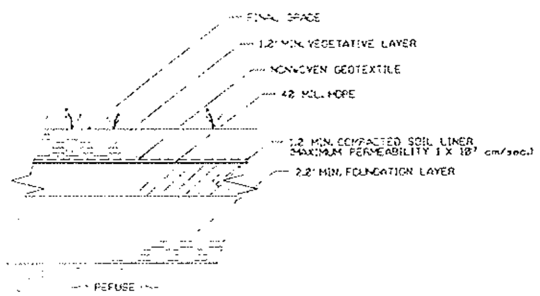
3.6.3.2 MATERIAL AVAILABILITY

All of the material needs for construction of the west and east expansion landfill areas will be excavated within the landfill footprints with the possible exception of drainage materials as previously noted. However, additional excavation of the EEA will be required to supplement daily and final cover needed on the WEA. The design of the excavation plan balances material needs with the excavation volumes.

3.6.4 LINER DESIGN

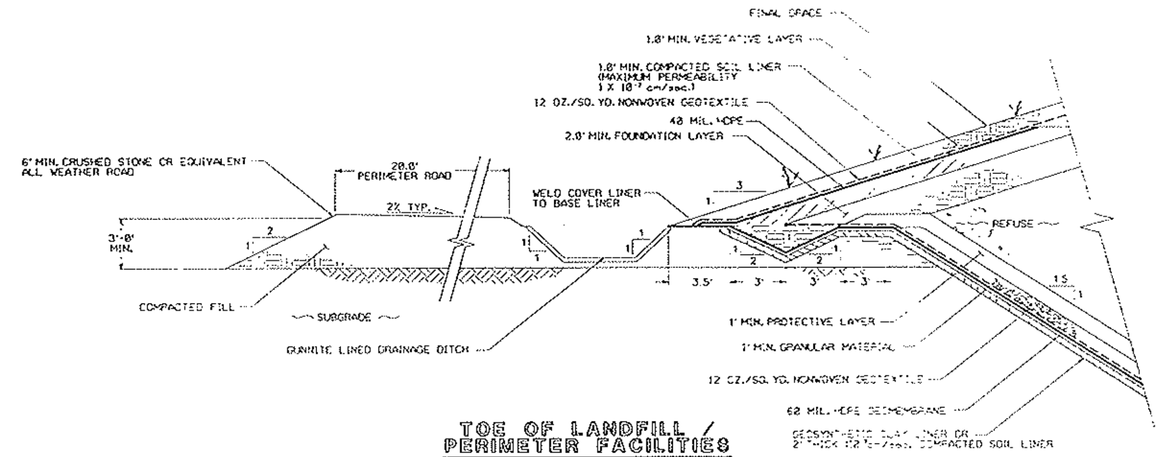
The purpose of the base liner is to contain leachate within the landfill so that it can be channeled, collected and properly disposed. Both the base and sideslope liners will be constructed of a layer of high-density polyethylene (HDPE) (60 mil) over a geosynthetic clay mat (Base Liner Option A) or a minimum two-foot layer of compacted clay (Base Liner Option B). Both of these options are depicted graphically on Figure 3-7. Both options will have permeability ratings of 10^{-7} centimeters per second or less.

A one foot layer of clean, coarse granular material will be placed over the synthetic liner before refuse is placed. The granular material placed over the liner will protect



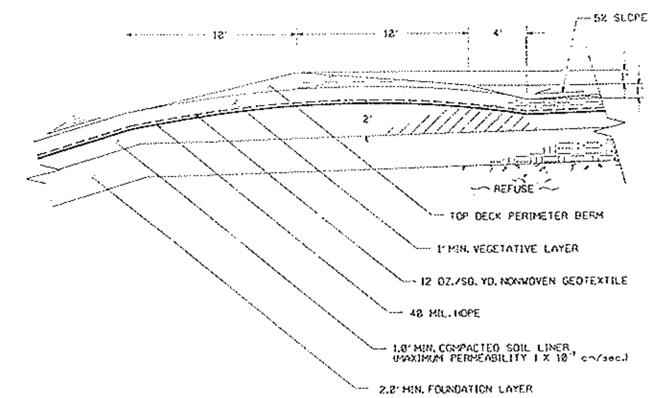
FINAL COVER

N.T.S.



TOE OF LANDFILL / PERIMETER FACILITIES

N.T.S.



TOP OF LANDFILL / PERIMETER DRAINAGE BERM

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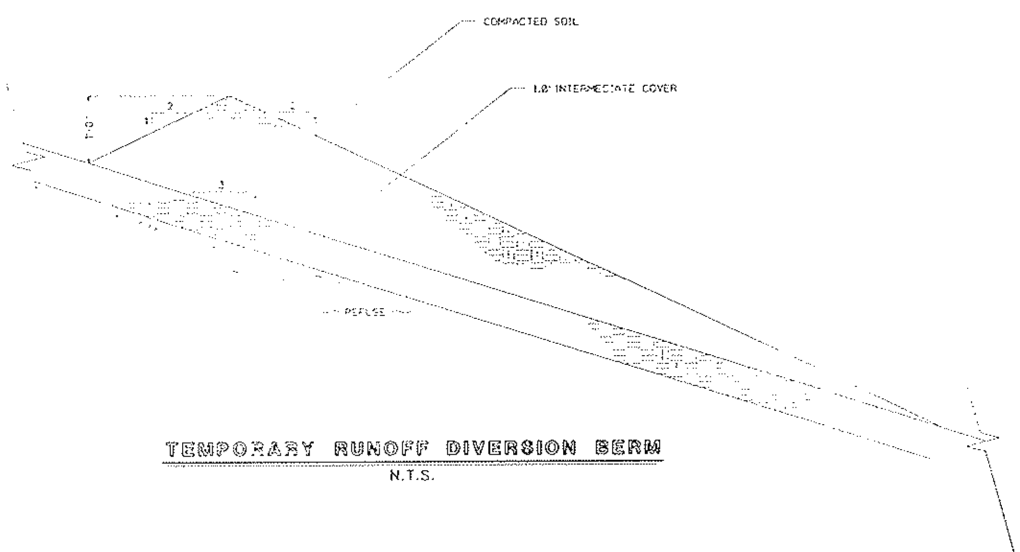

TEMPORARY RUNOFF DIVERSION BERM

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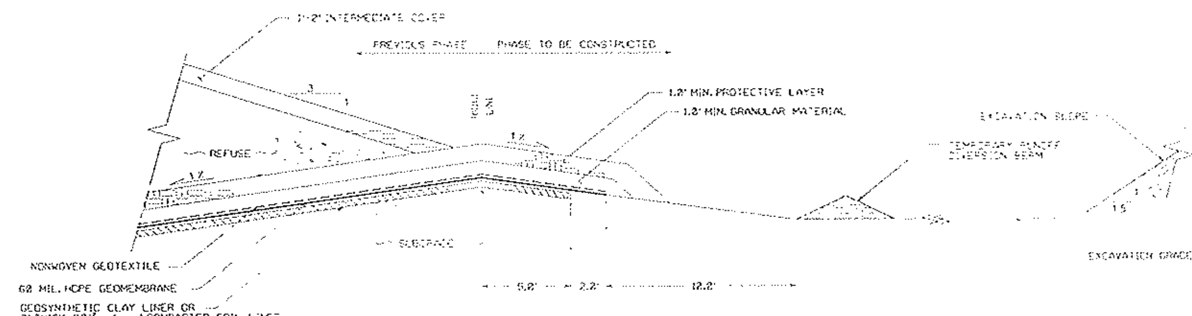

LINER INTERFACE BETWEEN PHASES

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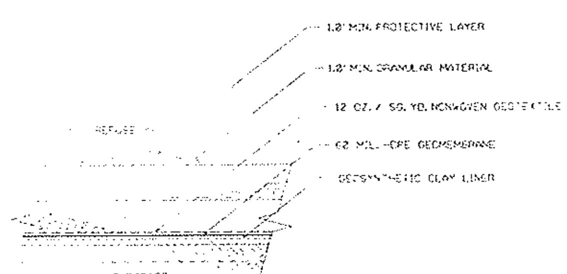

BASE LINER OPTION A

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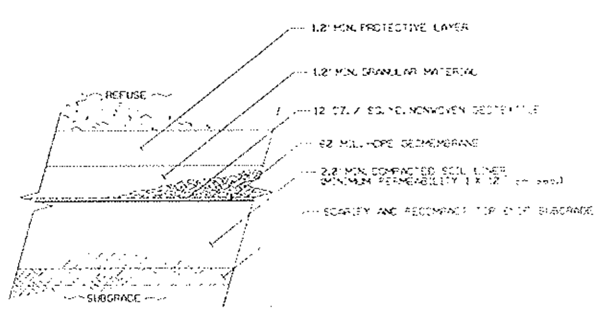


BASE LINER OPTION B

N.T.S.

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 3–7

BASE LINER and FINAL COVER DETAIL

Source : Rust Design Report 1994

the liner from accidental damage by landfill equipment. This protective layer will also act as a drainage layer to facilitate leachate movement toward the collection sumps, thus reducing the potential head build-up on the liner.

Special care and precaution will be taken when placing and compacting the first cell of refuse over the bottom protective layer, the sidewall liner and collection sumps. The first cell to be placed over the liner areas will consist only of select solid waste, devoid of materials that could damage or penetrate the liner.

To further reduce the potential for damage to the protective layer, only moderate compaction will be applied to the first cell. In addition, the first waste layer will be relatively thick (at least ten feet), as compared to following layers. Operating equipment will travel on the waste layer only, extending the cell out over the prepared baseliner/sidewall.

3.6.4.1 LANDFILL STABILITY

A preliminary static and seismic stability analysis was completed for the proposed project. Because the landfill expansion will be a Class III, it must be designed for the maximum probable earthquake (MPE). The stability analyses considered both the natural deposits and the proposed landfill materials.

The results of the stability analysis are represented by a ratio called the Factor of Safety (FS). The FS is the ratio of the resisting forces (those forces maintaining stability) to the driving forces (those inducing instability). Thus, a FS equal or greater than one implies stability, whereas a FS less than one implies instability. The static FS is computed under normal static loads, whereas the pseudo-static seismic FS includes an additional driving force to simulate the horizontal acceleration induced by an earthquake. In general, a minimum static FS, of 1.25 during landfill operation and a long-term pseudo-static FS of 1.4 after closure is considered appropriate for landfills.

A hypothetical seismic event along the San Andreas fault, located 11 miles southwest of the site, was used to estimate the stability of the slopes in the event of an earthquake. Assuming a lateral acceleration equal to 16 percent of the pull of gravity (0.16g), the pseudo-static seismic FS was found to be 1.5. The slopes, thus, are stable as designed under the modeled conditions. The assumed lateral acceleration of 0.16

was based on a normalized estimate of peak ground acceleration at the site from a seismic hazard analysis study conducted for the LLRC by Harding Lawson & Associates, 1991 (see Appendix H). Further investigation and liquefaction identification will be required in the final design.

3.6.5 FINAL COVER DESIGN

Figure 3-7 shows details of the proposed final cover to be placed over the landfill. The cover will consist of a sequence of the following layers:

- ❑ A two-foot (minimum) layer of material will be placed as a base for subsequent coverings.
- ❑ A one foot layer of low-permeability soil will cover the base layer, and this material will be capped with a 40-mil HDPE liner.
- ❑ A drainage geotextile will be placed over the HDPE.
- ❑ A one foot layer of topsoil, the vegetative layer, will be placed on the geotextile layer.

The proposed cover design meets all the requirements of the RWQCB, the CIWMB, and EPA Subtitle D.

3.7 ENVIRONMENTAL MONITORING

The applicant proposes to incorporate various environmental monitoring features into the project design to protect human and natural environments from adverse environmental impacts. These will be in addition to CEQA requirements for monitoring of mitigation measures. Elements of the environment to be monitored include: groundwater, surface water, and air. Routine monitoring will assure compliance with regulatory standards and act as an early warning system in the event of a failure of any system.

3.7.1 GROUNDWATER MONITORING

The site currently has ten wells which are used to monitor groundwater elevation and quality as part of the existing Corrective Action Program (CAP). In addition, six groundwater extraction and four groundwater injection wells are also components of CAP. Water quality is monitored on a quarterly basis, while groundwater elevation data is gathered monthly. Site-specific monitoring requirements and analytical parameters established by the California RWQCB are described in the site's WDR's Monitoring and Reporting Program.

The Monitoring and Reporting Program will be supplemented for the expansion areas and the design will be based on the findings of both past and ongoing geologic and hydrogeologic investigations. The system will consist of a series of monitoring wells installed at strategic locations near the expansion perimeter. The monitoring program will identify the number, locations, and completion depth of the proposed groundwater monitoring wells. Well construction details will be included in the program. The monitoring program will monitor the effectiveness of the landfill's environmental control features. Monitoring locations will be chosen so that they will measure the shallowest of groundwater to quickly identify any impacts.

Detailed records of all monitoring results will be maintained on site. Monitoring records will also be forwarded to the RWQCB at intervals specified in the WDRs. If monitoring reveals adverse changes in groundwater quality, assessment and corrective actions will be taken after consultation with the RWQCB.

3.7.2 LEACHATE MONITORING

The leachate collection and removal system (LCRS) sump collecting leachate from the LCRS system provides the means for monitoring leachate generation and accumulation. The system will, therefore, be capable of both monitoring and controlling any leachate generated within the landfill. A riser pipe extending up from the base of the sump will be monitored regularly for indications of leachate buildup. Additionally, the riser also provides access for removing any accumulated leachate. Any leachate collected will be disposed in accordance with all applicable laws and regulations. Permits for disposal will be obtained from the appropriate regulatory agencies.

3.7.3 SURFACE WATER MONITORING

The LLRC monitors storm water runoff in accordance with a Storm Water Pollution Prevention Plan (SWPPP) prepared for the landfill in accordance with the requirements of their National Pollution Discharge and Elimination System General Storm Water

Permit issued by the State Water Resources Control Board. An Annual Report for Storm Water Discharges is prepared each year and is submitted to the RWQCB.

3.7.4 AIR AND GAS MONITORING

Eighteen nested permanent gas monitoring probes are in operation around the perimeter of the existing landfill footprint. These probes are part of the landfill gas monitoring program required by the site's SWFP No. 19-AA-0050.

A monitoring program complying with SCAQMD Rule 1150.1 has been developed and approved by SCAQMD for the site. The program consists of integrated surface sweeps with an organic vapor analyzer (OVA) to detect landfill gas on a monthly basis. Currently, monthly instantaneous surface sweeps are being performed at the landfill. In addition, all landfill structures are equipped with continuous combustible gas detectors.

The expansion areas will supplement the existing monitoring system. Proposed probe locations and frequency of monitoring will be coordinated with SCAQMD at intervals specified in the permit and will be required to meet CCR, Title 14 and Los Angeles County Department of Public Works requirements, as appropriate. Upon completion of fill operations, the results of the monitoring programs will be reviewed, and future monitoring schedules will be determined for closure and post-closure.

3.7.5 NUISANCE AND HAZARD MONITORING

3.7.5.1 DUST

The applicant proposes to control unsightliness, dust and odor by continuing to implement the following control measures: 1) watering haul roads; 2) applying a fine water spray on wastes and soil cover over work areas when conditions cause the formation of fugitive dust; 3) placing daily, intermediate, and final soil cover (or approved alternate material) over the refuse fill; 4) applying water, pallatives or planting temporary vegetative cover on intermediate soil cover and stockpiles when conditions might cause excessive fugitive dust; and 5) planting and maintaining a vegetative cover on completed fill slopes and excavation surfaces.

3.7.5.2 ODOR

Low-permeability clay soils to be used in the final landfill cover and daily cover will be the primary control measure for odor at the landfill. Operation of the landfill gas control system will also minimize odors.

3.7.5.3 LITTER

Litter will be controlled by placing temporary fencing and/or portable litter fences downwind from the working face. The fencing, operational area, and the project site in general will be routinely policed to direct the pick up of any accumulated litter. The operator requires that all loads delivered to the site be covered by a tarp or other effective means to prevent release of litter to the roadways. In the event of accidental releases of litter on the adjacent roadways, litter crews will be dispatched for litter removal.

3.7.5.4 FIRE PROTECTION

Fire protection of landfill equipment and vehicles will be provided by removing debris and dust from undercarriages and engine compartments, checking for and repairing oil leaks, and maintaining portable fire extinguishers. All equipment and support vehicles have fire extinguishers, and all personnel receive training. The gatehouse, maintenance building, administrative building, and landfill equipment building will be equipped with suitable fire extinguishers for minor fires and for personnel safety. Any fire that occurs on the landfill will be extinguished by landfill personnel using water and soil cover stockpiles.

3.7.5.5 VECTOR CONTROL

Site personnel will routinely inspect the site for signs of rodent activity or fly breeding. If such vector activity is observed, a pest control specialist will be consulted to mitigate the vector nuisance.

3.7.5.6 VEHICLE TRAFFIC CONTROL

Most accidents/injury/illness at a landfill are caused by one of the following:

- Inattentiveness
- Horseplay
- Walking behind trucks
- Improper hand signals/backing of trucks
- Heavy equipment movement
- Non-essential vehicles parking in the staging area
- Scavenging
- Excessive Speeds

The LLRC utilizes employees designated as Landfill Spotters to control the active disposal area traffic and to minimize the occurrence of the above activities. The main function of the Landfill Spotter is to direct traffic into and out of the active unloading area, to ensure safe and orderly working conditions and check loads for household hazardous waste or other unacceptable waste streams. This is accomplished by performing many different tasks. These include:

- Interacting with drivers and equipment operations.
- Directing trucks to an open unloading area.
- Being familiar with different types of trucks.
- Keeping the active face free of obstruction
- Directing small vehicles out of the active area and to hand unloading area.
- Notifying Supervisor/Safety Coordinator/Scalehouse of unusual occurrences.
- Maintaining radio communications with supervisor, as needed.
- Notifying Supervisor of any suspected hazardous or unacceptable waste.

By utilizing a spotter at all times to control the active disposal area will minimize the likelihood of accident occurrences at the LLRC.

3.8 LANDFILL CLOSURE

The closure procedure for the LLRC will begin in the northeast corner of the current landfill area and proceed towards the southwest corner of the WEA. This final closure operation for the western site is labeled as Phase III on Figure 3-5. Phase III final closure operations will begin when refuse filling of Phase IV of the EEA is underway. Perimeter slopes will be closed first and vegetated where practical in areas which have already reached final grades prior to the completion of top deck refuse placement. Excess excavation material from Phases IV and V will be used as final cover material for Phase III.

Phase IX closure will proceed from the northwest corner of Phase IV and proceed in a southeasterly direction. The final closure of the EEA is labeled as Phase IX on Figure 3-5. Phase IX will begin while Phases VII and VIII are active. Phase IX will eventually be completed over the southeastern corner of Phase VIII after the refuse limits are reached. Final cover material for Phase IX will be provided by excess excavation material from Phases VI, VII, and VIII.

Final landfill slopes will be constructed no steeper than 3:1 and no flatter than five percent as shown on Figure 3-6. This design will minimize erosion potential and will allow for a sufficient post-settlement landfill slope to encourage surface water sheet-flow drainage. Final cover, in accordance with current regulations, will be applied to final refuse slopes within six months following final refuse grade elevations. The details of the final cover system are shown on Figure 3-7.

In order to verify that the low-permeability soil barrier layer has been properly placed during final cover construction, field tests will be conducted periodically as part of the final cover quality assurance/quality control procedures. Results of all field, construction, and laboratory tests conducted to document compliance with regulatory requirements will be maintained at the facility for future reference.

Revegetation of the site will occur upon placement of final cover to provide open space compatible with the surrounding sparse land use. Vegetation suited to the climate of the area will be utilized including drought tolerant species. All closure measures will be implemented to ensure compliance with 14 CCR, Chapter 3, Article 7.8, and Federal Subtitle D standards.

3.9 LANDFILL POST-CLOSURE

A post-closure maintenance program will be conducted at the landfill so that containment and monitoring facilities retain their integrity. Surface drainage control facilities, vegetated soil cover areas, all monitoring facilities, and access roads will be routinely inspected and repaired as necessary. A post-closure maintenance program will be prepared as part of final closure approvals and will be followed in order to preclude problems associated with: leachate generation due to infiltration of surface water into the landfill, gas venting through the landfill cover or emanating from the perimeter, maintaining access to all site areas, or development of a vector problem (insects or rodents).

3.9.1 FINANCIAL ASSURANCES

During the life of the landfill the applicant will be required to develop a financial fund for closure and post-closure maintenance acceptable to the CIWMB. This will ensure that funds will be set aside for the construction of closure improvements and post-closure maintenance and inspection activities.

3.9.2 POST-CLOSURE LAND USE

Historically, landfills have been returned to open space following final closure. Recently, however, post-closure uses have become more variable. The proposed post-closure land use for this site is open space and wildlife habitat.

SECTION 4.0

ENVIRONMENTAL SETTING

4.0 ENVIRONMENTAL SETTING

4.1 SETTING

4.1.1 REGIONAL SETTING

As previously stated, the proposed project site is located in an unincorporated area of Los Angeles County, California, near the City of Lancaster, in an area known as the Antelope Valley (Figure 3-1). The Antelope Valley is a topographic basin bounded on the north by the Rosamond Hills and the Bissell Hills, on the northwest by the Garlock fault zone and the Tehachapi Mountains, on the southwest and south by the San Andreas fault zone and the San Gabriel Mountains and on the east by low-lying hills which separate the basin from the Fremont and Mojave Valleys.

The main arterial for the Antelope Valley is the Antelope Valley Freeway (SR-14) located to the west of the proposed project site. The project area is in a sparsely developed area two miles northeast of the City of Lancaster and adjacent to Avenue F. Currently, access to the project site is by East Avenue F through the entrance to the existing landfill.

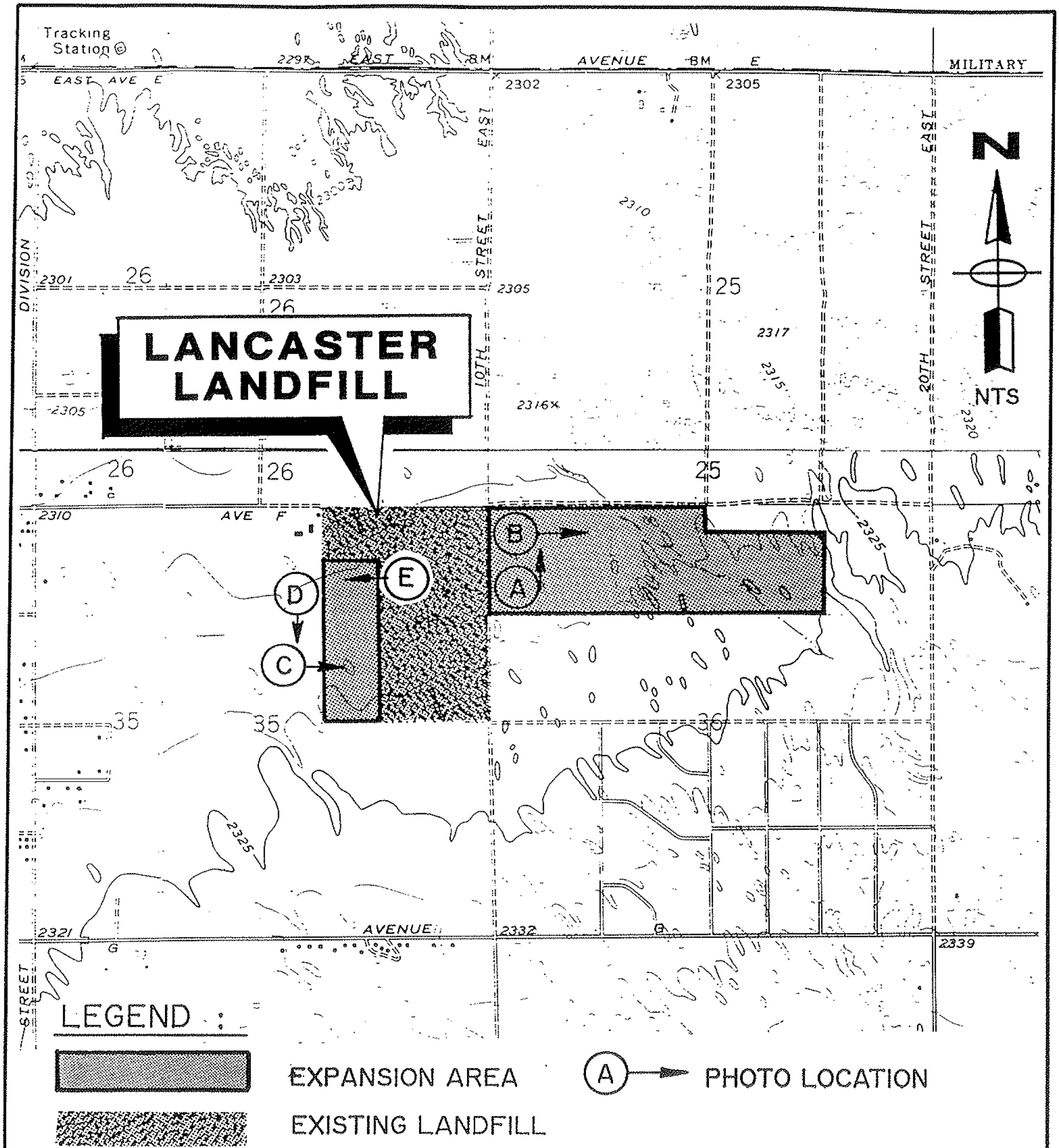
4.1.2 LOCAL SETTING

The existing landfill operation is located in an area two miles northeast of the City of Lancaster. The proposed expansion of the project site is located at and contiguous to the existing landfill which is entirely located within the unincorporated portion of Los Angeles County. The project is located within the jurisdiction of Los Angeles County and the City of Lancaster's sphere of influence.

The proposed project site is composed of the existing landfill and the two expansion areas; the western expansion and the eastern expansion. The WEA consists of approximately 62 acres located directly west of the existing landfill. The EEA encompasses 112 acres of presently undeveloped land and is separated from the existing site by a County road (10th Street East). Figure 4-1 presents photo locations and Figures 4-2a, 4-2b and 4-2c present photos of the proposed project site. Photo A shows the western limit of the EEA. As shown in Photo A, 10th Street separates the existing landfill to the west from the EEA. Photo B is a view from the west of the EEA where typical Mojave desert scrub habitat (e.g., Joshua trees, burro brush and cheat grass) is noted in the photo. Photo C is the view from the WEA looking towards the east at the existing landfill. Photo D shows the western limit of the WEA. Photo E is a view of a portion of the WEA which is currently utilized as a borrow pit for daily cover soils for the operation of the existing landfill.

The existing landfill is operated as an area fill type sanitary landfill. The area fill method involves placement of compacted refuse in cells approximately 20 feet thick. Refuse is spread and compacted in thin layers approximately two feet thick on an approximate 100 by 200-foot sloped working face. Landfill compaction equipment make numerous passes over each layer in order to achieve an in-place refuse density of 1,200 pounds per cubic yard and reduce long-term settlement of the landfill. The landfill currently operates as a Class III solid waste disposal facility.

The landfill facility includes scales and administrative offices at the site entrance, diesel pumps, paint shop, maintenance building and container repair shop. The design and approval of a sanitary landfill involves several State and local agencies. (Refer to the Project Description section under Permitting Requirements for a more detailed description.)



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 4-1

PHOTO LOCATION MAP

SOURCE : BASE MAP FROM UNITED STATES GEOLOGIC SURVEY TOPOGRAPHIC MAPS OF LANCASTER WEST, LANCASTER EAST, ROSAMOND, AND ROSAMOND LAKE.

PHOTO A

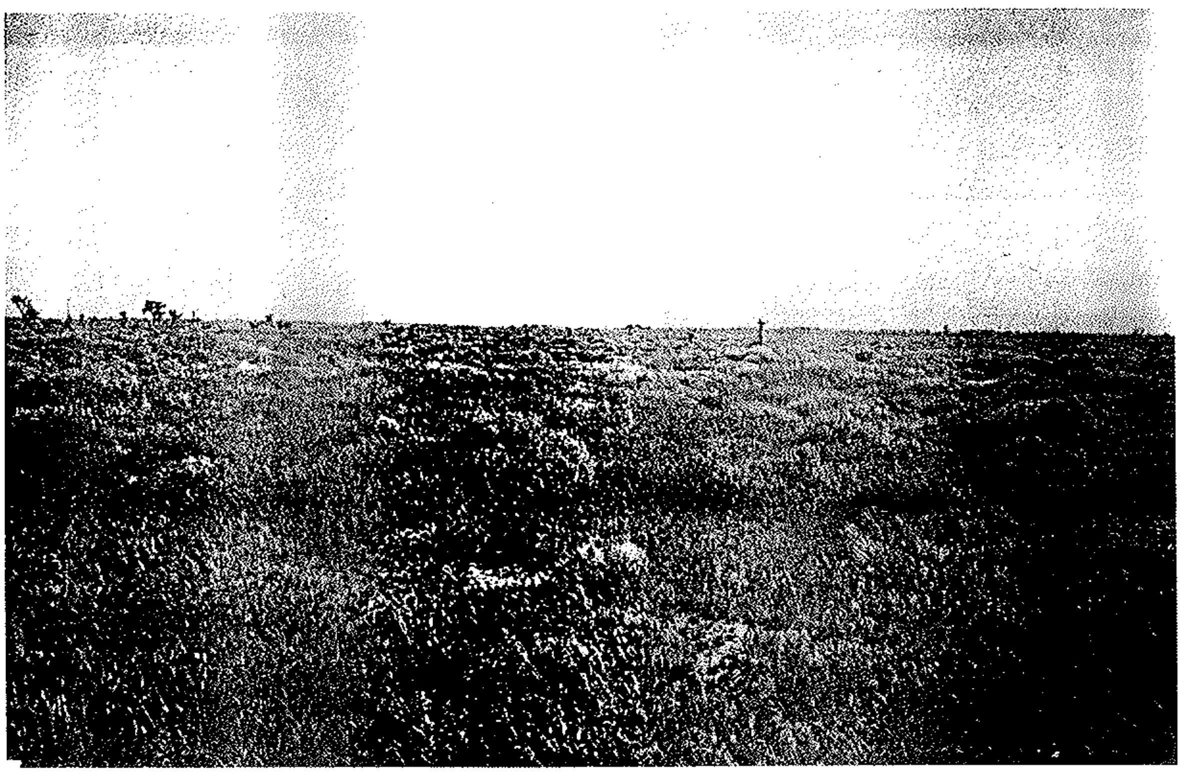


PHOTO B

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 4-2a

PROPOSED PROJECT SITE PHOTOS

PHOTO C

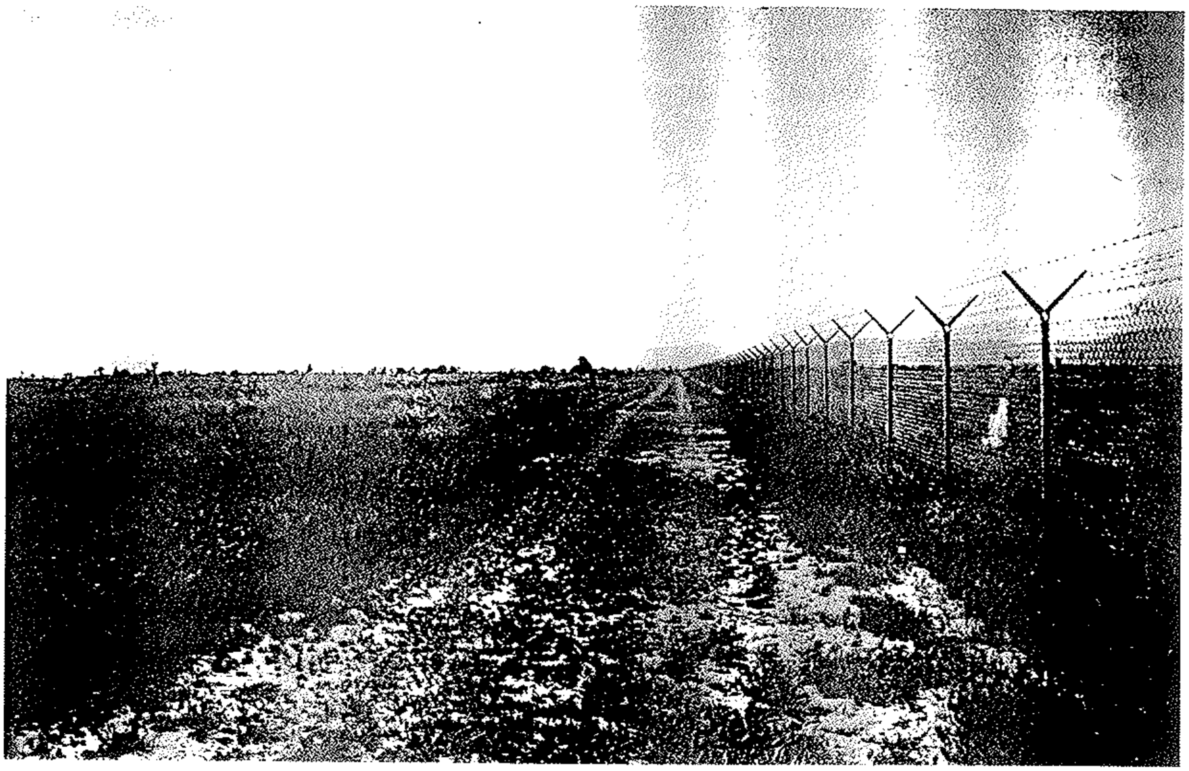


PHOTO D

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 4-2b

PROPOSED PROJECT SITE PHOTOS

PHOTO E

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 4-2c

PROPOSED PROJECT SITE PHOTOS

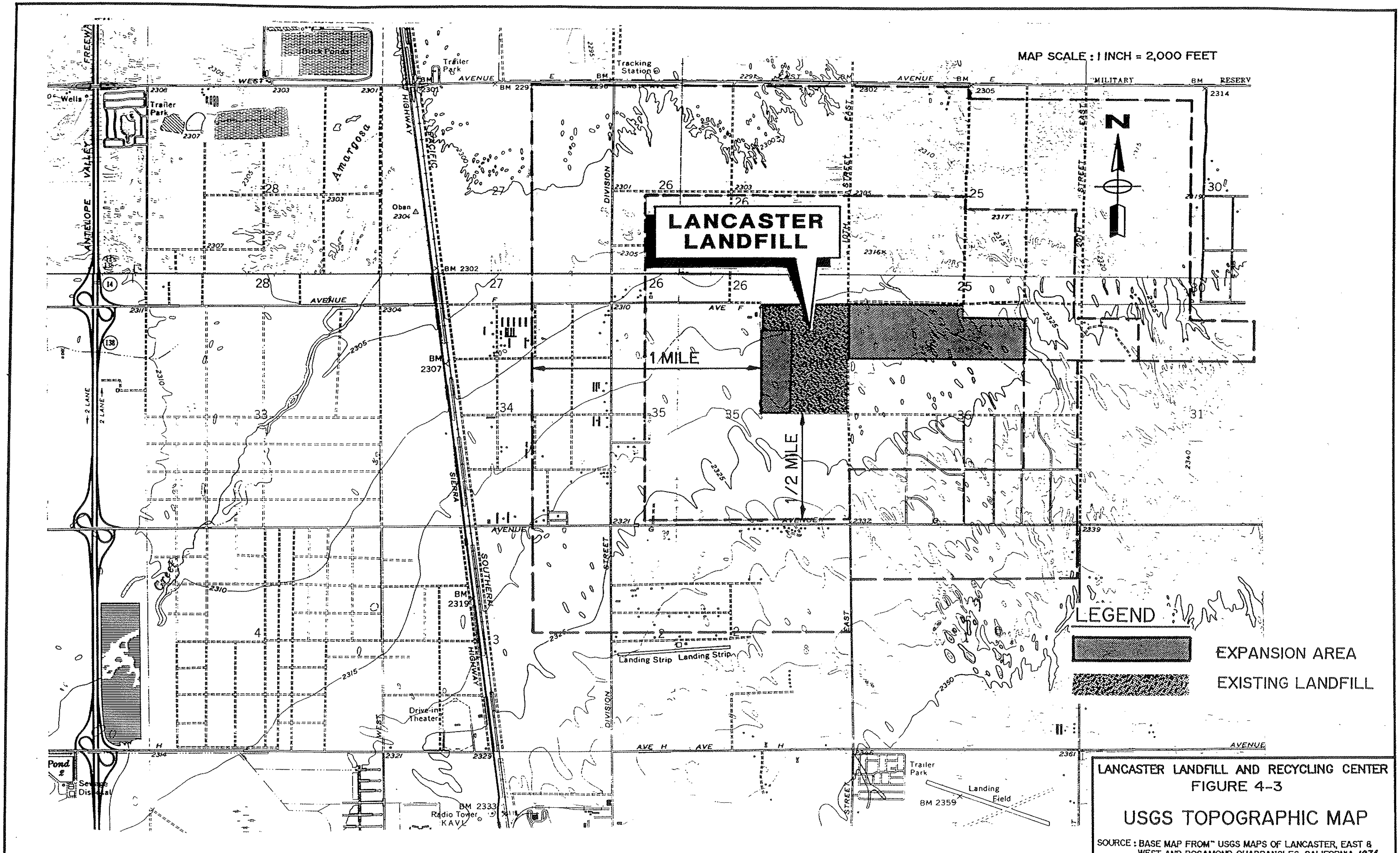
A United States Geological Survey (USGS) topographic map is depicted on Figure 4-3. This figure shows the limits of grading on the existing landfill and the limits of grading for the landfill expansion areas. The topographic relief of the site is relatively flat with a ground surface gradient of 15 to 20 feet over one-half mile. Ground surface elevations at the existing landfill site range from a low of 2,310 feet above mean sea level (AMSL) to the north to a high of 2,325 feet AMSL along the southern boundary. The average surface elevation at the eastern expansion is approximately 2,320 AMSL and the western expansion ranges from 2,310 to 2,315 feet AMSL.

The geology in the Lancaster area consists of alluvial sequences of unconsolidated to moderately indurated gravel, sand, silt and clay eroded from the surrounding hills. Locally the groundwater basin is up to 8,000 feet thick. Neither the existing landfill site nor the expansion areas contain any rock outcroppings or unique visual features.

Surface water hydrology in the area of the proposed project site typically flows northwest. Ultimately, surface water will drain to Amargosa Creek located approximately two miles northwest of the landfill which in turn flows north to Rosamond Lake Playa and EAFB. As shown on Figure 4-3, a USGS designated blue line stream has been mapped through the EEA.

The climate of the Lancaster area is characterized as semi-arid. Mean daily summer and winter temperatures range from 63°F to 93°F and 34°F and 57°F, respectively. The mean annual precipitation in the region is eight inches occurring primarily during the months of November to April. Air Weather Service Records from EAFB indicate an average annual wind velocity of 8.3 miles per hour with a majority of the winds originating from the west, west-southwest and the southwest.

The natural vegetation in the Lancaster area is Mojave desert scrub. Species common to the Mojave desert scrub include creosote, Joshua trees, burrobrush and saltbush.



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 4-3

USGS TOPOGRAPHIC MAP

SOURCE : BASE MAP FROM USGS MAPS OF LANCASTER, EAST & WEST AND ROSAMOND QUADRANGLES, CALIFORNIA, 1974

Very little vegetation occurs on the existing landfill, however, the expansion areas support shadscale scrub dominated by shadscale, Joshua trees and cheat grass. The area is characterized by low hummocks and small depressions. The depressions are mostly unvegetated, but their margins support alkali popcorn flower, pepper grass and schismus grass.

Marginal habitat exists on the expansion areas to support the Desert horned lizard, Mojave ground squirrel and the Desert Tortoise. These species have been reported to be in the region; however, studies performed at the proposed project site have not indicated their presence.

4.2 EXISTING LAND USES

Existing land uses within a three mile radius of the proposed project site were determined through review of the USGS topographic map of the area (Figure 4-3) and aerial photos. Land uses to the north and northeast of the proposed project site include open space, scattered single residences (approximately one and one-half miles from the site), Piute Ponds and EAFB. Land uses to the northwest and west include open space, scattered single residences along Avenue G (one-half mile south of the site), a few mobile homes (one-half mile north of the site), sewage disposal ponds, duck ponds, Sierra Highway and the Southern Pacific Railroad. South of the site is open space, light industrial/commercial, a radio tower, mobile home parks (within one and one-half and two and one-half miles), tract homes (within approximately two and one-half miles) and the District Fairgrounds (approximately three miles from the site). Land uses to the east include open space, a single residence (approximately one mile from the site) and a model airplane landing strip (located on the EEA).

4.3 AREA LAND USE PLANS AND POLICIES

The proposed project site and surrounding area are covered by three General Plans which include the Los Angeles County General Plan, Antelope Valley Areawide Community Plan and City of Lancaster General Plan. Although the proposed project site is not located within the City of Lancaster, it is located within the City's sphere of influence and is therefore affected by the City's General Plan.

The following sections discuss the area land use policies and plans according to Los Angeles County, Antelope Valley and the City of Lancaster.

4.3.1 LOS ANGELES COUNTY GENERAL PLAN

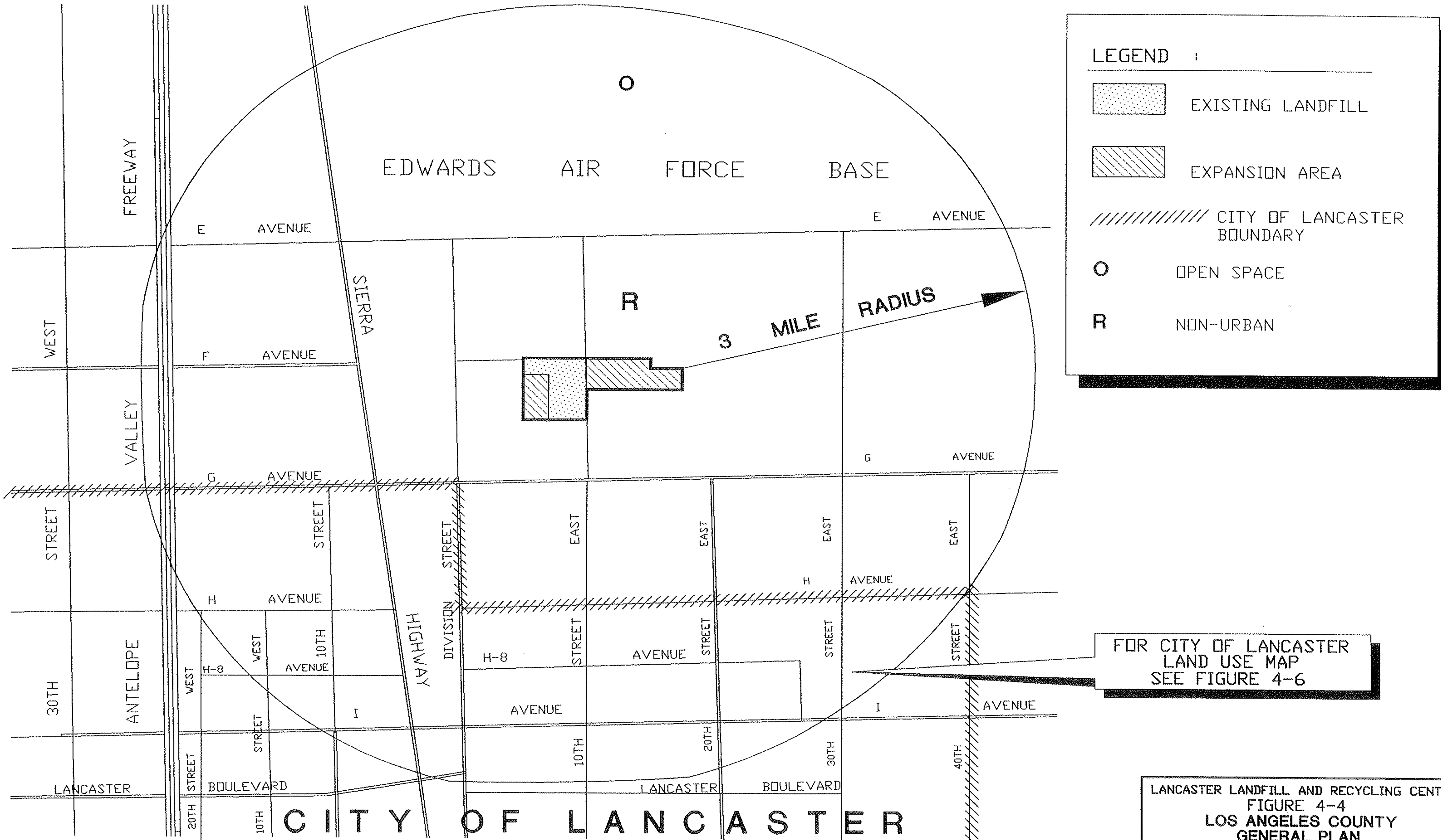
4.3.1.1 INTRODUCTION

The project site and surrounding areas within a three mile radius are primarily designated in the Los Angeles County General Plan as R-Non Urban (Figure 4-4).

Other designated land uses within a three mile radius of the proposed project site include an area approximately two miles southwest of the project site with several land use designations including residential, commercial, industrial, public and semi-public facilities and open space. To the north of the proposed project site is EAFB which is designated as open space.

4.3.1.2 LAND USE ELEMENT

The land use element includes goals and policies that are aimed at protecting communities and using resources wisely. The project site is located within designated



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 4-4

LOS ANGELES COUNTY GENERAL PLAN

LAND USE MAP

Source : Land Use Policy, Los Angeles County, November, 1980.

Non-Urban lands which primarily include mountain, foothill and high desert areas of the County not currently planned for urban use or scheduled to receive an urban level of service. The proposed project is an allowed use within the Non-Urban land use designation and is consistent with the intent of the goals and policies of the land use element.

4.3.1.3 PUBLIC FACILITIES

The public facilities element sets forth goals and policies for water supply and distribution, flood protection, water conservation, sewerage, water reclamation and solid waste disposal. In addition, this element focuses on the need for resource recovery and the protection and conservation of resources.

There is no specific land use classification in the County General Plan for a landfill. The plan provides that in considering a waste disposal facility, the Regional Planning Commission shall be guided by the "expertise" of agencies such as the County Departments of Public Works and Health Services, the State RWQCB and the SCAQMD. "The criteria to be applied by the Commission in considering an application include the regional and local need for the specific waste disposal facility as well as the potential impacts the use will have on the community. These impacts include but are not limited to noise, odor, visual, circulation/traffic, air and water quality, seismic safety, and safety. Regional need should not outweigh the impact on the community. Potential hazards should be given greater consideration than the regional need." (Reference: Public Facilities Element, County of Los Angeles General Plan).

4.3.2 ANTELOPE VALLEY AREAWIDE COMMUNITY PLAN

The Antelope Valley Areawide Community Plan was adopted on December 4, 1986. This plan is a component of the Los Angeles County General Plan and in most instances the policies contained in this document are sufficient for making most land use and other planning decisions affecting the unincorporated areas of the Antelope Valley planning area.

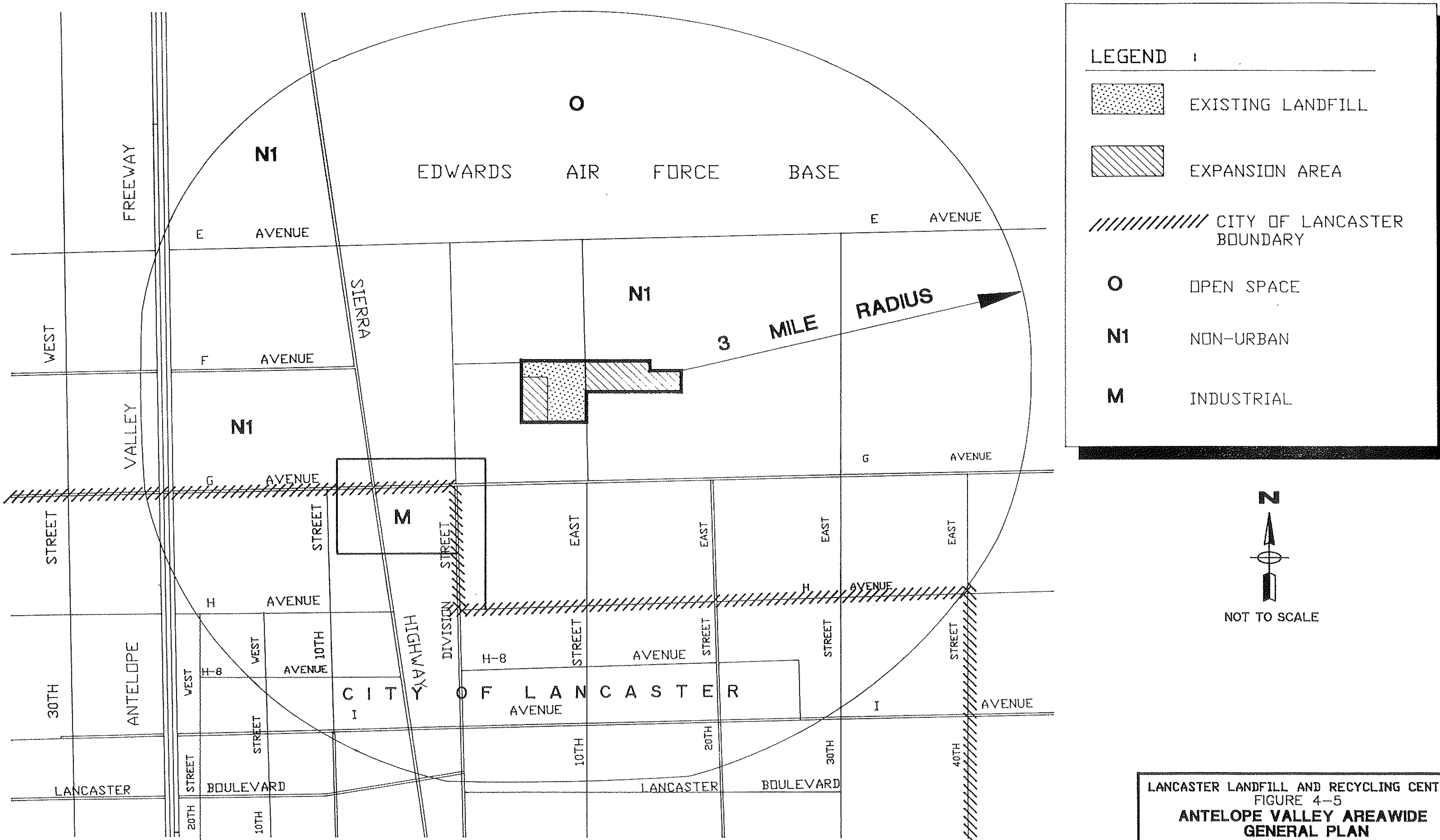
The proposed project site is located within the area encompassed by the Antelope Valley Areawide Community Plan and is designated as "Non-Urban 1" (Figure 4-5). Such areas generally are characterized by highly dispersed settlement or agricultural uses. Within the "Non-Urban" classification, the Antelope Valley Areawide General Plan allows the following:

> "Public and semi-public uses typically located in non-urban environs, such as solid and liquid waste disposal sites, utility and communication installations, and schools and other public facilities necessary to serve non-urban populations."

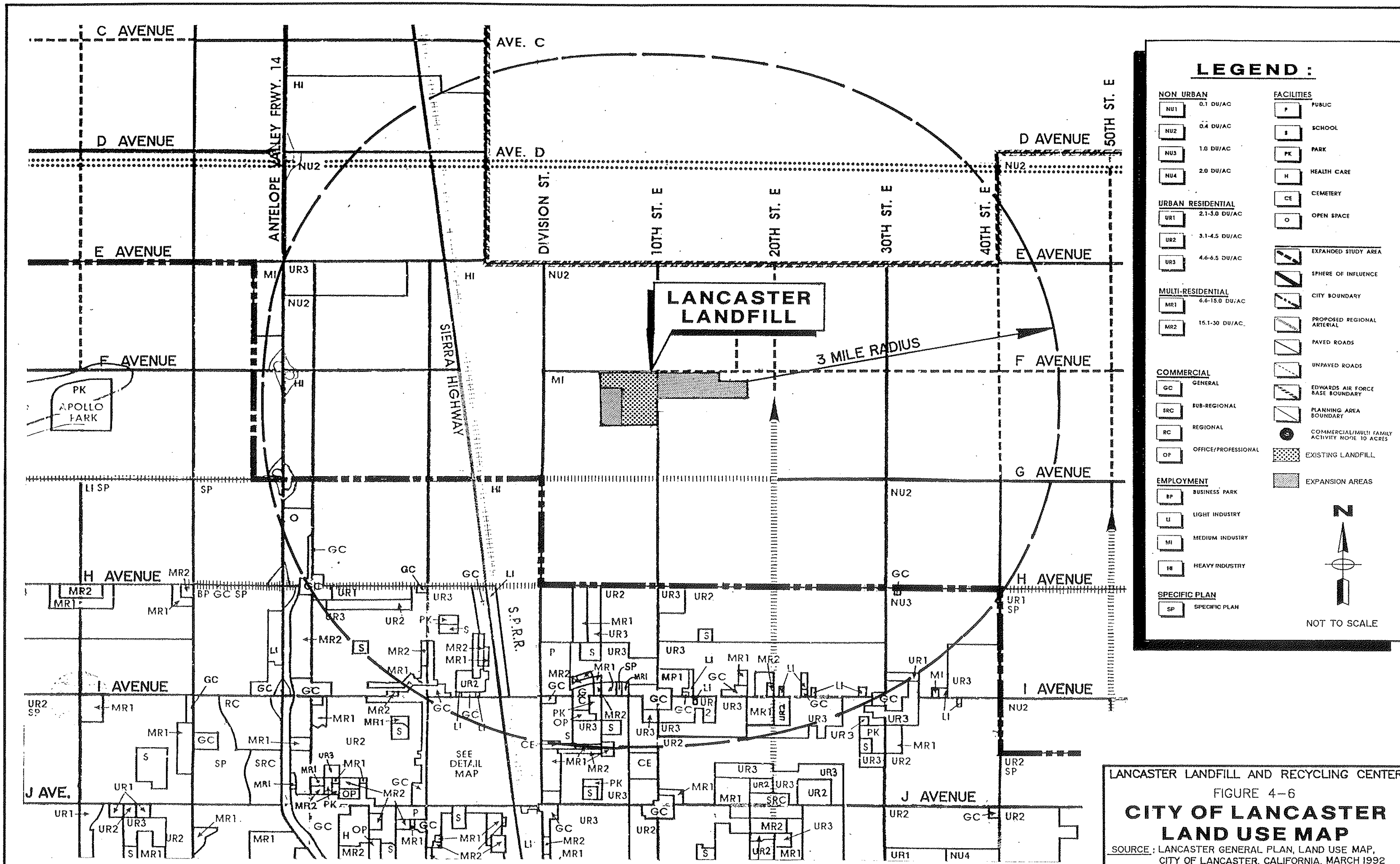
Approved site restoration shall be required at the termination of the disposal site. Such facilities are also required to comply with location, access and design criteria as set forth in the plan. Industrial uses, such as truck storage and maintenance, are not permitted in a "Non-urban" area as a matter of course, but such uses may be maintained at the landfill as long as they are in conjunction with the landfill operation. These criteria are essentially the same as those previously discussed for the Public Facilities Element of the Los Angeles County General Plan (4.3.1.3).

4.3.3 CITY OF LANCASTER GENERAL PLAN

The proposed project is located in the City of Lancaster's Sphere of Influence. Figure 4-6 illustrates the City boundaries and the Sphere of Influence land use designations. The City's General Plan identifies the site as MI, "Medium Industry." Designated land uses within a three mile radius of the project site consist primarily of non-urban. According to the City of Lancaster General Plan, an area approximately two miles southwest of the project site has several land use designations including residential, commercial, industrial, public and semi-public facilities and open space.



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 4–5
ANTELOPE VALLEY AREAWIDE GENERAL PLAN
LAND USE MAP
Source : Antelope Valley Areawide General Plan Land Use Policy Map, Feb. 1989.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 4-6

CITY OF LANCASTER LAND USE MAP

SOURCE: LANCASTER GENERAL PLAN, LAND USE MAP, CITY OF LANCASTER, CALIFORNIA, MARCH 1992

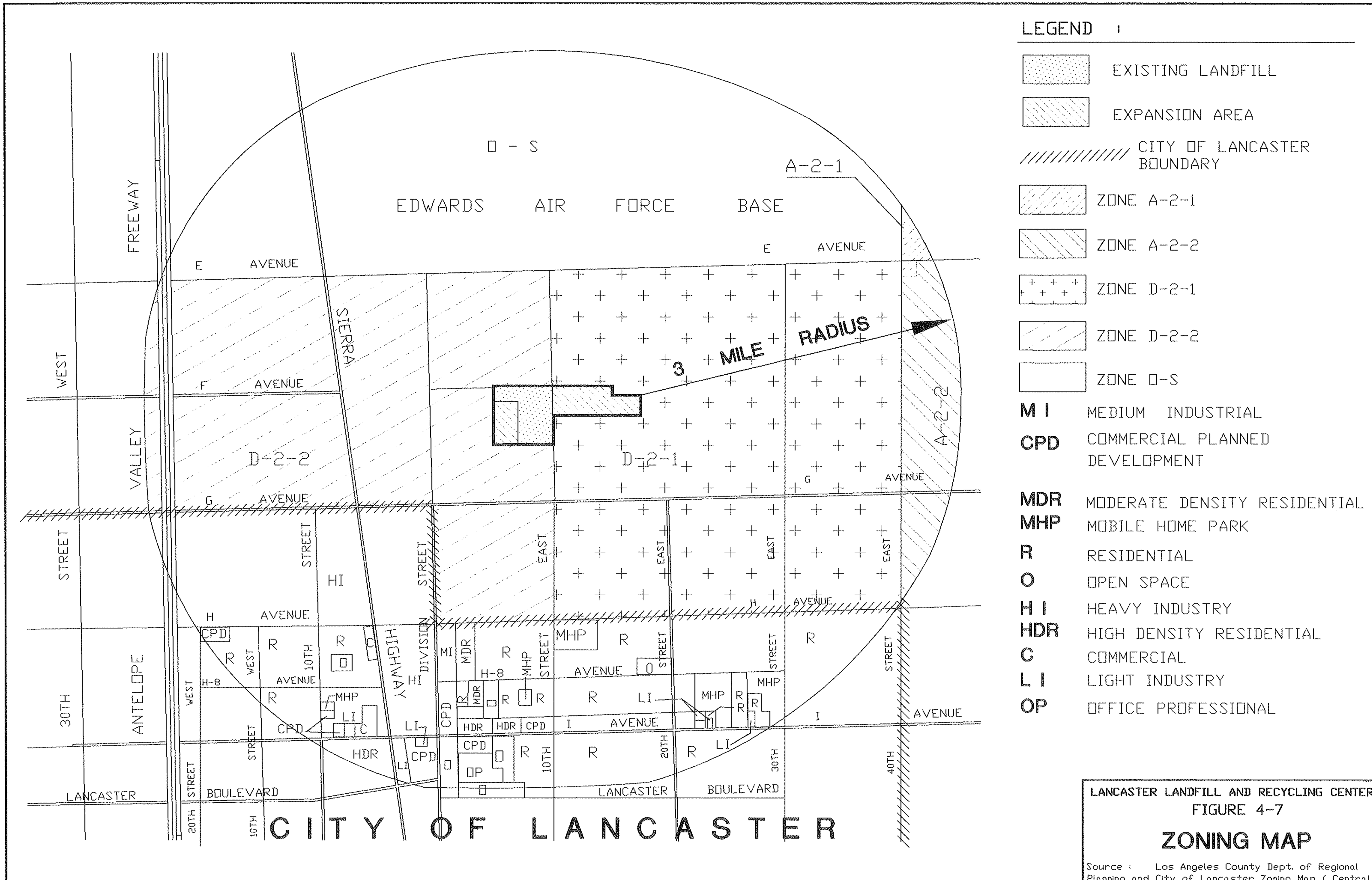
The proposed project is outside the City limits, therefore it is not currently zoned by the City of Lancaster.

4.4 ZONING

4.4.1 LOS ANGELES COUNTY ZONING

Zoning of the proposed project site was reviewed from maps available at the LACDRP (Figure 4-7). According to these maps, the proposed project site is located within a D-2 zone. According to the Los Angeles County Planning and Zoning Code any use permitted in zone A-2 (heavy agricultural) or zone M-1 (light manufacturing) are permitted uses for the D-2 zone. Zone A-2 allows land reclamation projects as a use subject to permits. Land reclamation projects are defined in the Planning and Zoning Code as *"...a project established to restore otherwise unsuitable land to useful purposes through the use of fill materials such as rubbish, waste, soil and other unwanted materials. Land reclamation projects shall include a dump or waste disposal facility."* Zone M-1 also allows land reclamation projects as a use subject to permits. Therefore, the existing landfill is and the expansion would be, a use for which a conditional use permit may be granted in the D-2 zone. The proposed project applicant has applied for a CUP with the LACDRP, Zoning Permits Section for this project. This EIR is required as part of the application.

Zoning within a three-mile radius of the proposed project site was also reviewed (Figure 4-7). The proposed project site and surrounding area is zoned by Los Angeles County as D-2-1 and D-2-2, desert/mountain. Areas located east of 40th Street East are zoned as A-2-1 and A-2-2, heavy agricultural. Zoning to the north of Avenue E is OS, open space; this land is currently occupied by EAFB.



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 4-7

ZONING MAP

Source : Los Angeles County Dept. of Regional Planning and City of Lancaster Zoning Map (Central)

4.4.2 CITY OF LANCASTER ZONING

The majority of the land surrounding the proposed project site is zoned by the County of Los Angeles; however, the City of Lancaster does fall within the three-mile radius south of the proposed project site. Areas south of Avenue H (approximately two miles south of the proposed project site, Figure 4-7) are zoned by the City of Lancaster and include C (commercial), O (open space), CPD (commercial planned development), LI (light industry), MI (medium industry) and residential zones including MDR (medium density residential), R (single family residential), MHP (mobile home park) and RR (rural residential).

4.5 OTHER APPLICABLE PLANS AND POLICIES

4.5.1 COUNTY SOLID WASTE MANAGEMENT PLAN

The Solid Waste Management and Resource Recovery Act of 1972 requires that each county, in cooperation with local jurisdictions and private industry, prepare a Solid Waste Management Plan. The County Solid Waste Management Plan (CoSWMP) dated March 1984 and Revision A, dated August 1985 includes the existing landfill. The CoSWMP identifies the existing LLRC as a Class II site (this classification was subsequently redesignated to be Class III). The CoSWMP has not been updated since the project applicant proposed the expansion of the LLRC, therefore, the proposed project is not included as a proposed landfill expansion in the CoSWMP. The CoSWMP will not be updated as it will be replaced with a County Integrated Waste Management Plan (CIWMP) (further discussed in Section 4.5.2).

The CoSWMP includes a review of the adequacy of the active landfills within the County according to criteria set forth by the Resource Conservation and Recovery Act (RCRA). The criteria addressed the following health and environmental areas: floodplains, endangered species, surface water, groundwater, disease, air quality and safety. According to the CoSWMP, the existing LLRC was found to be in compliance with RCRA criteria.

4.5.2 COUNTY INTEGRATED WASTE MANAGEMENT PLAN

In 1989, the State of California passed the California State Integrated Waste Management Act of 1989 (Assembly Bill 939), as amended by Assembly Bill 2707 (1990), which requires every city and county in the State to prepare and submit a CIWMP to the CIWMB. The CIWMP places primary emphasis on implementation of all feasible source reduction, recycling and composting programs while identifying the amount of landfill transformation capacity that will be needed for solid waste which cannot be reduced at the source, recycled or composted. The CIWMP will consist of all Cities'/County's Source Reduction and Recycling Elements, Household Hazardous Waste Elements, Non-Disposal Facility Elements, the Countywide Siting Element, and the Summary Plan. A preliminary draft of the plan, dated January, 1996, has been prepared.

The Countywide Siting Element (CSE) must address the solid waste disposal need of the County for a 15-year planning period. This must include the management of the residual solid waste that cannot be reduced, reused, recycled, or composted. A preliminary draft siting element, dated January, 1996, has been prepared and was released to the cities in the County for their review and approval in March, 1996. The review period ended on October 17, 1996. The Final Draft CSE is currently being prepared. The Final Draft CSE must be approved by a majority of the cities containing a majority of the incorporated population and by the County. After obtaining these approvals, the CSE will be submitted to the California Integrated Waste Management Board (CIWMB) for approval. Upon approval from the CIWMB, the CSE will become effective. The LLRC expansion is listed in the siting element as a potential expansion site.

The LLRC currently has a Hazardous Waste Exclusion Program in place which will be applied to the expansion operations as well. The Hazardous Waste Exclusion Program implemented at the LLRC includes a special waste implementation plan, load-checking program and hazardous waste storage area policies. The Hazardous Waste Exclusion Program will limit the intake of all hazardous wastes, including those from households. Exclusion programs, however, generally have limited effectiveness upon household hazardous wastes entering landfills. The operators of the LLRC and the proposed expansion have implemented a policy to educate the public to help reduce the illegal disposal of household hazardous wastes and will support the County's household hazardous waste programs identified in the County's Household Hazardous Waste Element (HHWE).

In response to the requirements of AB 939 and the County's Source Reduction and Recycling Element (SRRE), a recycling program has been included in the existing site's recently revised SWFP and will be included as part of the proposed expansion operations. The recycling program includes three categories of recyclables which are collected and stored onsite for transport to processing facilities. The categories include a curbside recycling program to collect commingled recyclables from local residences, cardboard and office paper collection from local businesses and a woodwaste recovery operation which is expected to be part of future operations.

4.5.3 REGIONAL COMPREHENSIVE PLAN AND GUIDE

The Regional Council of the Southern California Association of Governments (SCAG) adopted a Regional Comprehensive Plan and Guide (RCPG) for Southern California in October, 1994. This plan is intended to serve the region as a framework for decision making with respect to the growth and changes that can be anticipated during the next 20 years and beyond. It provides a general view of the plans of the various regional agencies that will affect local governments, or that respond to the significant issues facing Southern California. Additionally, it summarizes the plans which describe how the region will meet certain federal and state requirements with respect to transportation, growth management, air quality, housing, hazardous waste management, and water quality management. The plan consists of three sections: Core chapters, Ancillary chapters, and Bridge chapters. The Core chapters correspond directly to federal and state requirements placed on SCAG and may also contain non-binding advisory materials and guidance. The Ancillary chapters may reflect other regional plans but are strictly advisory and establish no new mandates or policies for the region. The Bridge chapters show the links between the requirements in the Core chapters and the guidance in the Ancillary chapters for other areas of concern. The chapter on Integrated Solid Waste Management which is applicable to the expansion of the LLRC is an Ancillary chapter.

A "Standard of Living" goal has been established for solid waste to develop self-sustaining recycled materials markets and cost-efficient waste management. A "Quality of Life" goal has also been established to provide self-sustaining markets for recycled materials, waste prevention and recycling and an improved process for siting facilities.

The Integrated Solid Waste Management component of the RCPG reiterates the goals, objectives and planning process established in AB 939 which was discussed in Section 4.5.2. It also provides information on years of remaining permitted landfill capacity by County (as of 1990) which allowed less than five years remaining for Los Angeles County at the time of publication (1990). The planned development of new landfill capacity includes expanded and/or new landfills, the most significant of which are proposed large, waste-by-rail facilities. These waste-by-rail facilities are projected to have tipping fees significantly higher ($50 to $55 per ton) than existing landfills (LLRC's current tipping fee is $32.50 per ton).

Several regional solid waste issues are raised in the RCPG which need to be addressed in order to meet the region's solid waste goals. These issues are:

- ☐ Developing recycling industries and self-sustaining markets for recycled materials.
- ☐ Encouraging a reduction in overlap in waste prevention public awareness campaigns.
- ☐ Economic impacts of increased waste management cost.
- ☐ Promoting new technologies.
- ☐ Facilitating regional dialogue on inter-county waste disposal projects.

Expansion of the LLRC is consistent with the RCPG's goals of cost-efficient waste management and will reduce the economic impact of increased waste management costs due to waste-by-rail alternatives as it is a much less costly option to providing additional landfill capacity. It further supports the RCPG's goals for recycling through implementation of it's recycling program included in it's recently revised Solid Waste Facility Permit.

4.5.4 CLOSURE PLAN

In accordance with CCR Title 14, Chapter 3, Article 7.8 and Chapter 5, Articles 3.4 and 3.5, CCR Title 23, Chapter 15 and 40 Code of Federal Regulations (CFR), Part 258, Subpart F, the proposed expansion of the landfill will require a closure and post-closure maintenance plan. The landfill will be closed in accordance with applicable state and federal regulations at the end of its useful life. A final closure plan will be prepared and submitted two years prior to the anticipated date of closure and will require approval of the CIWMB, the State Water Resources Control Board (SWRCB) and the LEA. A preliminary closure plan will be prepared for the SWFP revision required for the proposed expansion.

The closure plan will include final cover design and construction, final drainage, slope protection and erosion control, grading requirements, leachate collection and removal systems, site security, structure removal, decommissioning of environmental control systems, groundwater and landfill gas monitoring system integration, and an established financial assurance plan to cover the costs of closure and post-closure maintenance.

The post-closure maintenance plan will include final cover maintenance and repair, maintenance of all collection systems and monitoring systems, procedures for monitoring and reporting for all control and collection systems, perimeter and structure monitoring, emergency response plan, and a cost estimate for all post-closure maintenance and monitoring.

The end use of the site upon final closure is to be open space. Landscaping will be accomplished through hydroseeding utilizing native, low fuel volume and drought tolerant species of vegetation. Highly flammable and heavy fuel volume plants such as Eucalyptus, Pines, Junipers or Cyprus plant species will not be considered for the site due to the wildland fire hazard surrounding the project. No irrigation or other land use is proposed.

SECTION 5.0

EXISTING CONDITIONS, PROJECT IMPACTS, AND MITIGATION MEASURES

5.1 GEOTECHNICAL

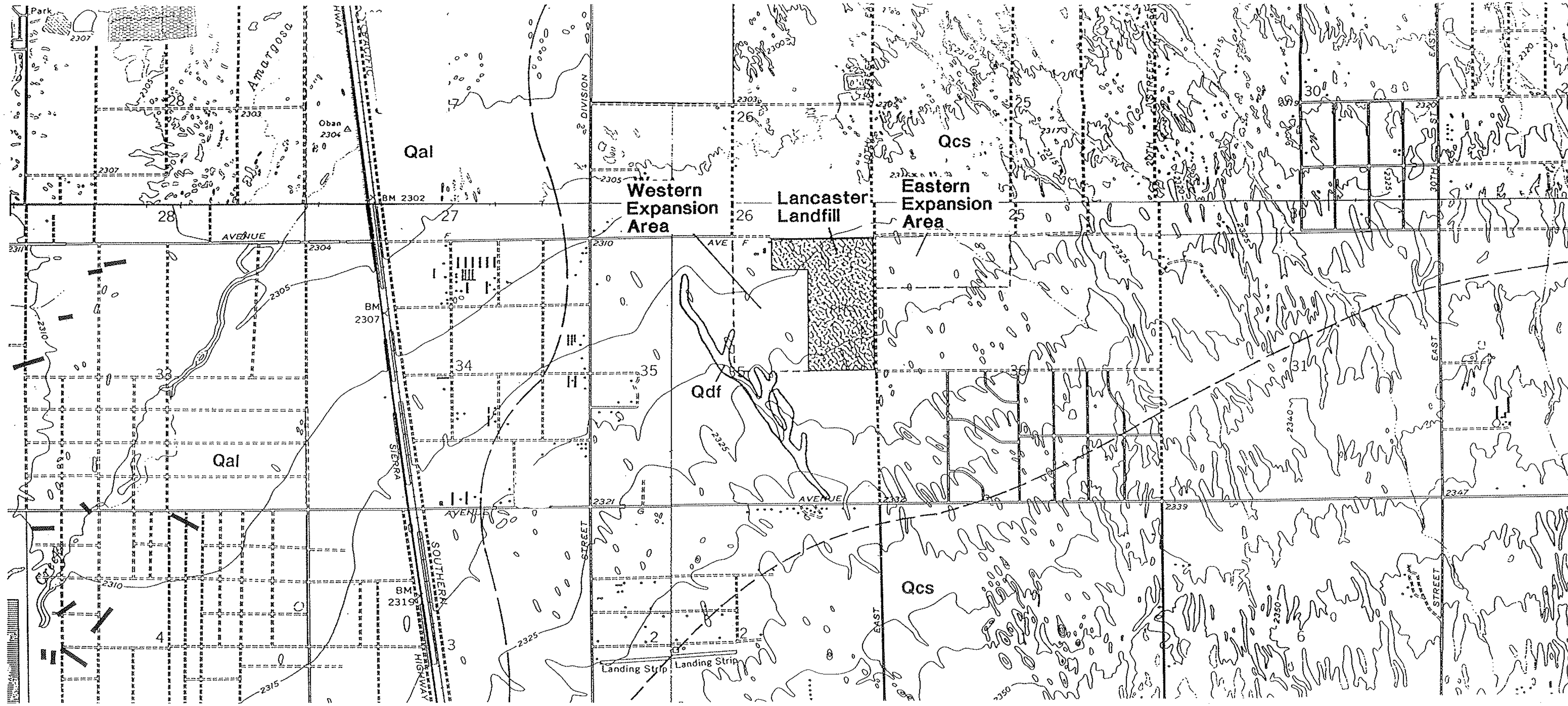
5.1.1 EXISTING CHARACTERISTICS OF PROJECT SITE AND SURROUNDING AREA

The LLRC is located in the Mojave Desert of Southern California, where the lacustrine deposits of Lake Thompson (the Pleistocene predecessor of Rosamond Lake) interdigitate with the distal fringe of the bajada formed off the San Gabriel Mountains (a bajada is a sloping surface formed by the coalescence of alluvial fans). The average slope throughout the property is approximately 0.1 percent toward the northwest.

The site is located at the boundary of two depositional environments (lacustrine and distal bajada), so its stratigraphy is characterized by rapid changes and limited lateral continuity between its units. In general terms, the site is underlain by horizontal sediments that become finer-grained from southeast to northwest.

Fluvial erosional processes appear to be major contributors to the transport of sediment across the site, as indicated by incised gullies and through-going channels on the area of the proposed EEA. On the WEA portion of the site, however, debris levees and deranged fluvial channels suggest predominance of deposition over erosion. A geology map of the site and surrounding region is depicted on Figure 5.1-1. Additional geotechnical information for the site is presented in Appendix C.

Wind erosion can be of local significance, but the mass eroded appears to be in general balance with the mass of sediment deposited. This is suggested by the paucity and incipient nature of blowout erosional structures, and the paucity of depositional structures such as dunes.



LEGEND

Qcs - Thin, irregular veneer of wind-blown sand over lacustrine and alluvial sediments
Qdf - Debrisflow deposits of gravelly sand
Qal - Alluvial deposits of silty sand and clay

—— Geologic contact
---- Inferred high shoreline of Lake Thompson at the end of the Pleistocene (Dibblee, 1960)
▬ Large ground cracks (GeoLabs, 1991)

5000 feet

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 5.1-1

GEOLOGY MAP

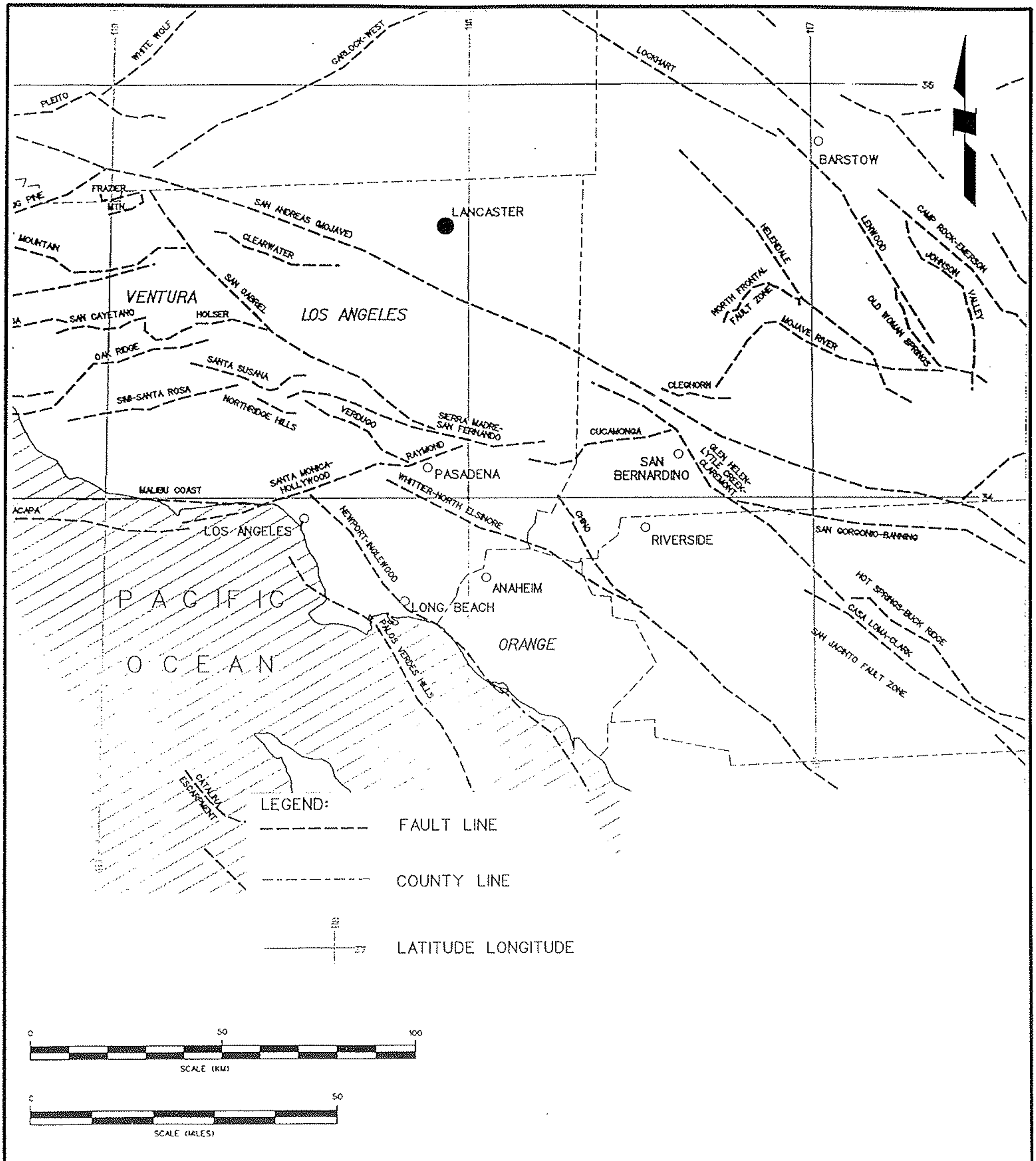
Source : Geologic Associates Geology Report 1994

5.1.1.1 SEISMICITY

The southern Mojave Desert is an area of active faulting and folding. Nearby active faults include the San Andreas fault zone (12.5 miles to the southwest), the Garlock fault zone (20 miles to the northwest), and the Helendale fault (30 miles to the east). The nearest area of active folding seems to be located 12 miles southwest of the site, where the Pliocene Anaverde Formation has been tightly folded by the shear of the San Andreas fault. Figure 5.1-2 depicts the location of known faults in the vicinity of the project site.

The LLRC is located 12.5 miles northeast of the San Andreas fault zone and 20 miles southeast of the Garlock fault zone (Figure 5.1-2). Farther to the northeast are the swarm of oblique-slip faults of the central Mojave (Figure 5.1-2), one of which is the Landers fault, which on June 28, 1992, ruptured over a distance of at least 48 miles and generated an earthquake of momentum magnitude 7.3. The San Fernando fault zone runs 30 miles to the south-southwest of the site, and in 1971 generated an earthquake of magnitude 6.6. The Oak Ridge fault, which on January 17, 1994, generated a magnitude 6.6 earthquake, runs 42 miles south-southwest of the site.

<u>The San Andreas fault</u>. In 1857, movement along the right-lateral, strike-slip San Andreas fault generated an earthquake with an estimated momentum magnitude larger than 8.0 in the Fort Tejon area. It is here assumed that a similar earthquake could be generated in the future, as close as 12.5 miles southwest of the site. Based on the large number of historic earthquakes generated along the San Andreas fault, Wallace (1970) estimated that in any given year there is a 0.2 probability that an earthquake of magnitude 6 would occur somewhere along the 600 miles of the San Andreas fault, and that there is a 0.01 probability that a magnitude 8 earthquake would be generated in any given year. Locally, the trenching and geochronometric studies of Sieh (1978) in Pallett Creek (20 miles southeast of the site) suggest annual probabilities of 0.005 to 0.003 for magnitude 8 earthquakes.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.1-2

FAULT LOCATION MAP

SOURCE: RUST ENVIRONMENT & INFRASTRUCTURE

The Garlock fault. From its intersection with the San Andreas fault, near Tejon Pass, the near vertical Garlock fault can be traced eastward for approximately 160 miles. Through the Tehachapi Mountains (20 miles northwest of the site) it follows a linear topographic depression where fault scarps have been subdued by erosion, whereas farther to the east distinct scarps are present, suggesting recent surface rupture (Dibblee, 1967). Offset dike swarms and matching sequences of metasedimentary rocks suggest a minimum left lateral displacement of 65 km since the late Tertiary (Davis and Burchfield, 1973). The Garlock fault has not been the locus of historical earthquakes, but based on tectonic setting Greensfelder (1972) calculated a magnitude of 7.7 for the maximum credible earthquake.

The Helendale fault. The Helendale fault has a northwest trend and extends over a distance of 55 miles, from the central San Bernardino Mountains to the City of Helendale, 35 miles east of the site. Manson (1986) reported that Pleistocene units have been offset by right-lateral strike-slip displacement as much as ten miles, and that the latest Pleistocene to Holocene alluvium has been locally offset. The Helendale fault has not generated a large earthquake in historic time, but, by analogy with the Landers fault, it is assumed to be capable of generating earthquakes of magnitude larger than seven.

The San Fernando fault. The San Fernando fault zone runs in a general east-west direction 30 miles south-southwest of the site. According to Ziony and Yerkes (1985), this range-front fault zone is formed by five en echelon north-dipping reverse faults. The fault zone is active, as demonstrated by the 1971 San Fernando earthquake, which had a momentum magnitude of 6.6 (USGS, 1971; Oakeshott, 1975).

5.1.1.2 LARGE GROUND CRACKS

The playas of the Mojave Desert are well known for having very large ground cracks or fissures. Fife (1980) described these peculiar features, and concluded the following: (1) Ground cracks in playas can form as a result of faulting, subsidence, or massive desiccation (massive desiccation means extensive loss of moisture from clayey sediments or evaporites, either through evaporation or groundwater pumping); (2) Large ground cracks often form polygonal sets, in which the polygons can be up to 1,500 feet across. Individual cracks may be up to one foot wide, 30 to 300 feet deep, and up to 1.5 miles in extent. During wet periods, these cracks tend to heal, but upon new desiccation they tend to reopen along pre-existing polygons. Some cracks have been observed to widen considerably shortly after heavy rainfall (e.g., Knott, 1992; Molinari et al., 1992), probably due to piping (i.e., erosion of the walls of a previously existing crack by downward seepage of water); (3) Ground cracks have also been observed around pumping wells, and in these cases it is assumed that lowering of the water table, rather than evaporation, is the main process responsible for cracking; (4) Finally, seismic forces can trigger the initial opening of a ground crack (such as the fissures that developed after an earthquake of magnitude 5 that shook Erickson Playa in 1977).

Swift (1991) described a swarm of fissures along the broad valley of Amargosa Creek, about 2.5 miles west of the landfill site (Figure 5.1-1). According to Swift (1991), the valley floor in this area is underlain by late Pleistocene lake bed deposits, probably related to ancient Lake Thompson (Dibblee, 1960; 1967), that consist predominantly of silt and clay. The fissures found in this area range in width from one inch to slightly over one foot, generally exhibit a gently arcuate aspect, and have no appreciable vertical displacement. The longest continuous fissures were on the order of 600 to 700 feet in length, although most are covered by wind-blown sand and as a result can only be traced for up to 50 to 200 feet. Swift (1991) concluded that the observed fissuring was due to tensional forces created by regional subsidence in excess of five feet, which may be related to groundwater withdrawal.

Molinari et al. (1992) reported the results of a trenching study of fissures in a small area located five miles west-southwest of the landfill site. The fissures in this area ranged in length between three and 125 feet, and were expressed as aligned, discontinuous shallow surface depressions and holes. At the surface these features were typically two to six inches wide, and trenching demonstrated that they extended several feet into the underlying clay and sandy soil layers, albeit most were filled with soil within five feet of the surface. The field investigation demonstrated that playa deposits of medium stiff, slightly sandy to clayey silts were present to depths of five to eight feet, and were underlain by medium dense to dense, silty sands with interbeds of medium stiff to hard sandy and silty clays.

To estimate the potential for the existence of ground cracks at the LLRC site, four sets of historical aerial photographs were reviewed, spanning the period 1928 to 1993. Very few linear or curved features were identified in the photographs, and none of them had the subparallel or polygonal patterns characteristic of regional ground cracks. Ten suspect features were located and were inspected by a professional geologist during a field reconnaissance of the site. Three of these features turned out to be man-made (an abandoned trench and two eroded blind roads), four proved to be shallow ravines with small-scale dendritic patterns, and three were edges of small levees formed by a debris flow. Small discontinuous cracks were observed on the dry bottoms of some depressions, but their vertical extent was restricted to less than one inch. In conclusion, there is no evidence that might suggest that the site is susceptible to ground cracking.

5.1.1.3 STRATIGRAPHY

The topsoil in the project area belongs to the Tray Series (Woodruff et al., 1970.). The permeabilities of these soils are moderate, their water holding capacity ranges between 5.5 and 6.5 inches, and their shrink-swell potential is low. Runoff is very slow and the potential hazard of water erosion is very low. Eolian (wind) erosion, however, can be significant.

The LLRC site may be underlain by lacustrine clays that could be potential sources of industrial clays (bentonite), firing clays, or borates. Based on the regional data, it would be expected for the Pleistocene clays to be about 300 feet thick in the area of the LLRC, and to extend between depths of 200 and 500 feet.

5.1.1.4 EROSIONAL PROCESSES

Water erosion processes appear to be major contributors to the transport of sediment across the east expansion area of the project, as indicated by incised gullies and through-going channels. In addition, wind erosion can be of local significance, as demonstrated by the presence of incipient blowouts on those portions of the site that have not been disturbed by landfill activities. Lanphier (1993) has estimated the mass of local soil loss due to wind erosion at eight tons/acre per year for disturbed and unvegetated ground, and less than one ton/acre per year for undisturbed ground.

5.1.1.5 DEPOSITIONAL PROCESSES

Water erosion processes are probably dominant on the area of the proposed EEA. On the WEA portion of the site, however, debris levees suggest predominance of deposition over erosion. As is common in desert environments, most of the deposition seems to take place during rare, intense thunderstorms which generate large quantities of runoff in very short periods of time. These "flash-flood" types of events are so powerful that the load of sediment causes the creeks to turn into debris flows. Disruption of the drainage pattern of the WEA portion of the site seems to have been caused, to a large extent, by repeated flash flood type of events. Unconsolidated and poorly sorted gravely sand deposits of the most recent of these events form the levee-like ridges that are identifiable along the south edge and southwest corner of the WEA. Based on a review of available historical aerial photographs, it appears that these debris flow levees were formed sometime between 1928 and 1940.

The mass of sediment deposited by wind erosion cannot be estimated with the information available, but is probably in long-term balance with the mass eroded. This is suggested by (1) the scarcity of blowout erosional structures; and (2) the scarcity of depositional structures such as dunes.

5.1.1.6 GROUNDWATER

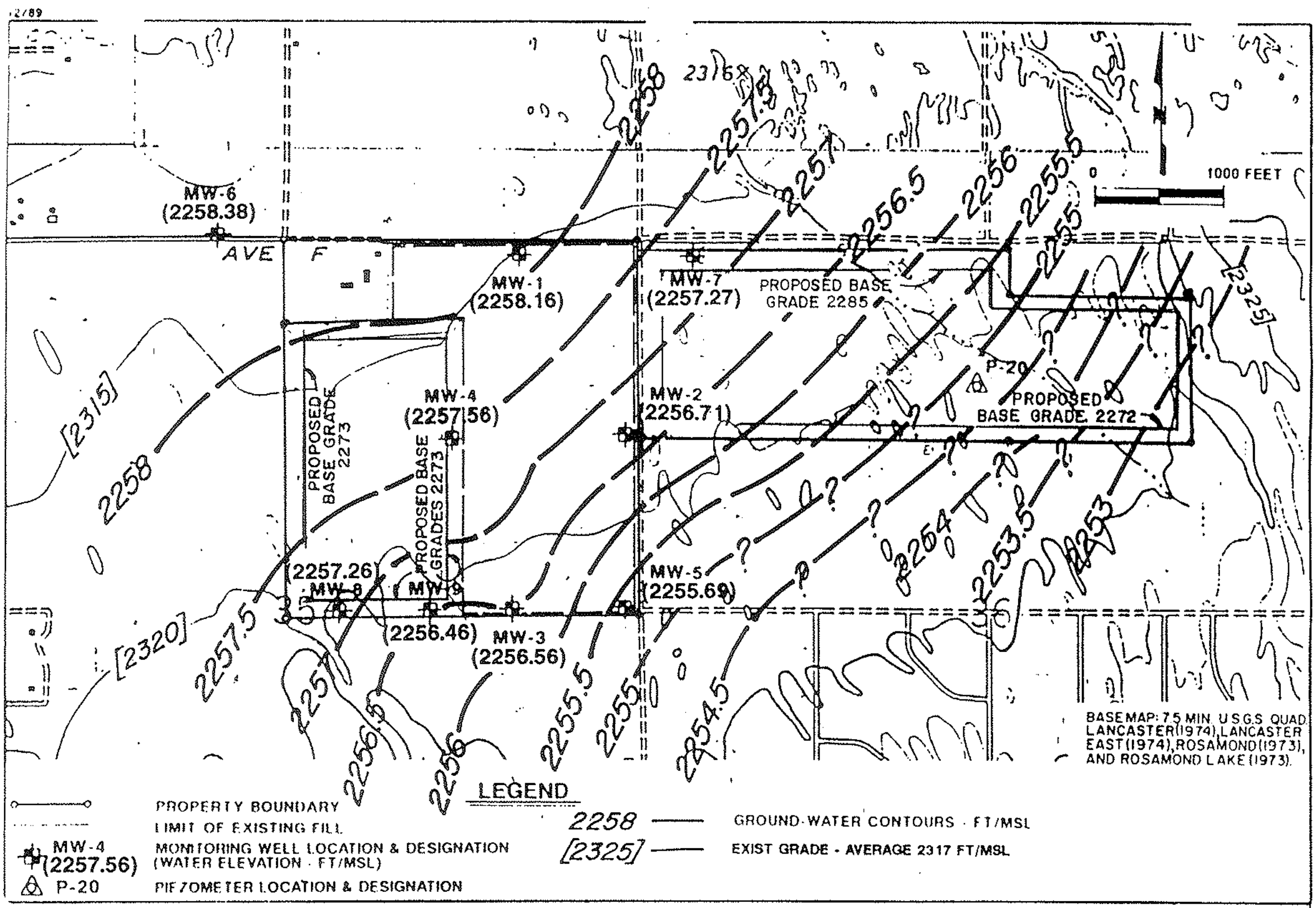
The site is located in the Antelope Valley. The Antelope Valley is underlain by the Antelope Valley groundwater basin, a name given to two large alluvial aquifers that are separated by thick Pleistocene lacustrine clays in the central part of the Lancaster sub-basin. Below these clays is the lower, confined "deep" aquifer, in which artesian wells were developed earlier in the century. Above the clay is the upper, unconfined "principal" aquifer, whose water table is at an average depth of 60 feet in the area of the landfill.

The main source of groundwater recharge to the Lancaster sub-basin is runoff from the San Gabriel Mountains. The two principal streams which drain this mountain area are Big Rock Creek and Little Rock Creek, which together have a mean annual runoff of 40,000 acre-feet. A secondary component of recharge is direct precipitation on the basin floor, where the average annual precipitation ranges from about ten inches along the toe of the San Gabriel Mountains to less than five inches at Rogers playa lake. Because of the meager precipitation, any recharge that may occur on the basin floor is confined to infrequent "wet" years when rainfall exceeds 15 inches throughout the valley.

Prior to extensive agricultural development in the Lancaster sub-basin, groundwater movement in both the "principal" and "deep" aquifers was to the north, from the highlands toward Rosamond Lake, where it was discharged primarily through springs and surface evaporation. Heavy agricultural pumpage since the 1950s, however, has resulted in the artificial diversion of the groundwater movement. In the LLRC area, the water table of the "principal" aquifer presently slopes to the southeast, toward a cluster of irrigation wells developed on the alluvial fan of Little Rock Creek.

Based on aquifer pumping tests performed in the area of the project, the transmissivity of the unconfined aquifer has been estimated at 7,400 gpd per foot, and the hydraulic conductivity has been estimated at 70 feet per day (ft/day). Based on a hydraulic conductivity of 70 ft/day, a hydraulic gradient of 0.0008, and an effective porosity of 0.2, groundwater flow velocity at the site has been estimated at 106 feet per year toward the southeast.

The groundwater contour map of August 1992, Figure 5.1-3, indicates a water depth of approximately 55 feet or greater beneath the site, representative of a drought condition. Historical water levels from 1990 through 1992 depict a gradual linear decrease over time at a rate of approximately 0.7 feet per year. Projection of this rate of change ten years into the past, through drought conditions, yields a calculated pre-drought water level seven feet above current levels in the area of the landfill. Therefore, a reasonable conservative design estimate of the maximum expected future water table rise in the vicinity of the landfill is ten feet. This would equate to a depth to groundwater from the surface of approximately 43 to 45 feet. This does not take



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.1-3

GROUNDWATER CONTOUR MAP 1992

Source : Rust Design Report 1994

into account future groundwater demand in the region which would be expected to increase with future development which would lead to decreases in groundwater levels.

5.1.2 THRESHOLDS OF SIGNIFICANCE

Any of the following impacts on the geologic environment, or of geologic hazards in the proposed project, would be considered a potentially significant impact:

- ❑ Expose people, structures, or property to major geologic hazards such as earthquakes, landslides, mudslides, or ground failure.
- ❑ Location within an Alquist-Priolo Special Studies Zone, or within a known active fault zone, or an area characterized by surface rupture that might be related to a fault.
- ❑ Contain substrate consisting of material that is subject to liquefaction or other secondary seismic hazards in the event of ground shaking.
- ❑ Result in unstable earth conditions or changes in geologic substructure.
- ❑ Display evidence of static hazards, such as landsliding or excessively steep slopes, that could result in slope failure.
- ❑ Location in the vicinity of soil that is likely to collapse, as might be the case with karst topography, old mining properties or areas of subsidence caused by groundwater drawdown.
- ❑ Exhibit soils characterized by shrink/swell potential that might result in deformation of foundations or damage to structures.
- ❑ Location next to a water body that might be subject to tsunamis or seiche waves.
- ❑ Location in a Mineral Resource Zone identified by the California Department of Mines and Geology or within an area designated as Important Farmland identified by the Soils Conservation Service (U.S. Department of Agriculture).
- ❑ Result in disruptions, displacements, compaction or over-covering of the soil.

- ❑ Result in change in topography or ground surface relief features.
- ❑ Increase wind or water erosion of soils, either on or off the site.
- ❑ Result in changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake.
- ❑ Alter the direction or rate of flow of groundwater.
- ❑ Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations.
- ❑ Substantially reduce the amount of water otherwise available for public water supplies.

5.1.3 IMPACTS

The site is located 12.5 miles from the San Andreas fault, and could experience strong shaking in case an earthquake were to be generated along this fault. Because of its use for refuse disposal, however, the project per se does not increase the exposure of people, structures, or property to earthquake hazards. The structures that might become exposed are limited to the water treatment plant, landfill gas collection system and three office trailers. Property that might become exposed is limited to construction equipment and refuse trucks. The maximum probable earthquake for the design of the proposed landfill was defined as that earthquake event having an average return period of 100 years. An earthquake having an average return period of 100 years at this site would generate a maximum horizontal bedrock acceleration of approximately 0.16g, resulting in moderate groundshaking. This is considered a less than significant impact.

The final expansion of the refuse prism into the west and east expansion areas will not result in unstable earth conditions. Temporary unstable earth conditions could happen, however, in the course of excavation operations for the acquisition of daily cover and subgrade preparation for the expansion areas. To minimize the likelihood of such temporary unstability, interim slopes have been designed to have gradients of no more than 1.5:1. This is considered a less than significant impact.

Implementation of the proposed project will result in a change in topography and ground surface relief as a result of the building up of two new refuse prisms. This change in relief will block existing drainage patterns in the EEA. This impact could be mitigated by construction of a peripheral channel. In the WEA, the increase in topography is not anticipated to have a significant impact on drainage, as the latter has already been deranged by debris flows. Project drainage features have been designed to mitigate the changes to natural drainage features. Changes to drainage patterns are therefore considered to be less than significant impacts.

It is estimated that the mass of local soil loss due to wind erosion is eight tons/acre per year for disturbed and unvegetated ground, and less than one ton/acre per year for undisturbed ground. At the maximum erosion rate, the development of the 62 acres of the WEA and the 112 acres of the EEA could result in a total eroded mass of 1,392 tons per year if all 174 acres of expansion areas were disturbed at the same time. The actual mass eroded would be much less than this figure, however, due to implementation of the dust-control measurements included in the design of the operation, and the development of the landfill in phases, which will minimize the acreage of disturbed land. This is considered to be a less than significant impact based on the relatively small volumes involved.

The installation of a low-permeability liner over the landfill expansion area will result in reduced infiltration over the footprint of the site. This will not trigger significant changes in the configuration of the water table, however, as the main source of groundwater recharge to the Lancaster sub-basin is runoff from the San Gabriel Mountains, rather than direct infiltration through the valley floor.

5.1.4 MITIGATION MEASURES

- ❑ * Prepare an Earthquake Preparedness Plan as part of the site's Emergency Response Plan.
- ❑ * Ensure that interim slopes during landfill development do not exceed gradients of 1.5:1.
- ❑ * Develop the landfill in phases. Limit the acreage of disturbed ground during each phase.
- ❑ * Construct peripheral drainage channels around the EEA to route drainage around the refuse prism.
- ❑ * Continue to implement dust control program to minimize wind erosion at the site.

These mitigation measures are technically and economically feasible, and have been incorporated in the design plans of the project.

* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

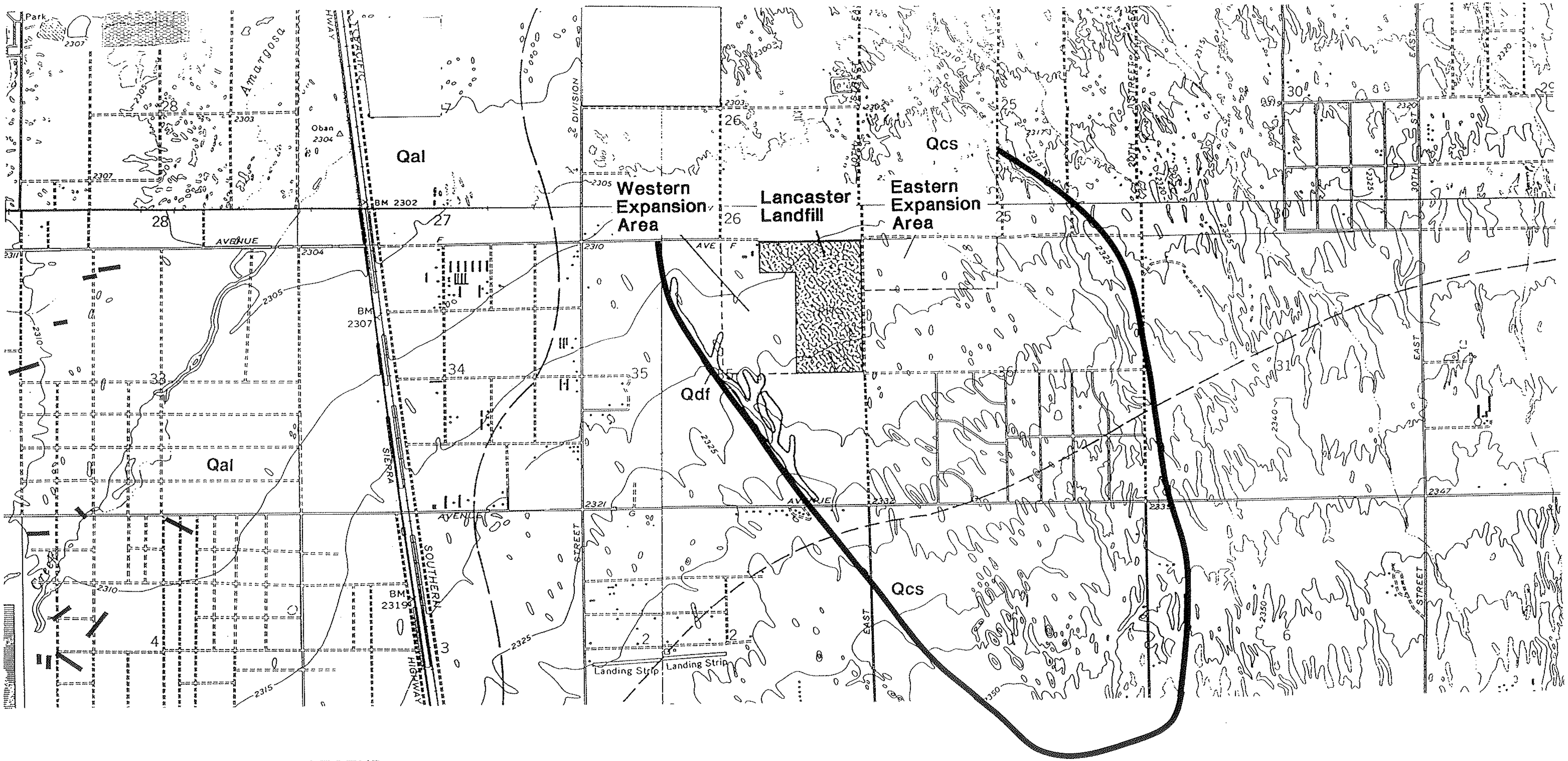
5.2 FLOOD HAZARD

5.2.1 EXISTING CHARACTERISTICS OF PROJECT SITE AND SURROUNDING AREA

The project is located on the distal fringe of a bajada formed off the San Gabriel Mountains (a bajada is a sloping surface formed by the coalescence of alluvial fans). The average slope throughout the site is about 0.1 percent to the northwest, toward the broad valley of the intermittent Amargosa Creek (upper left corner of Figure 5.2-1).

The surface of the west portion of the site has been partly modified by the existing landfill, but in general is characterized by a hummocky morphology, caused by segmentation of an original network of creeks by eolian blowouts and debris flow levees. In the east portion, the channels of the creeks are continuous and better preserved, and slope toward the northwest (i.e., toward Rosamond Lake). The fluvial channels have low sinuosity and are through-going.

The topographic map on Figure 5.2-1 shows, by the frequency of convolution of the contour lines, that the area to the east of 10th Street East has well-defined, through-going fluvial channels, and is thus not susceptible to flooding or emplacement of debris flows (i.e., storm runoff can be efficiently "transmitted" to Rosamond Lake by the network of fluvial channels). West of 10th Street East, in contrast, there are very few well-defined fluvial channels, so runoff from high intensity rainstorms may not be efficiently transmitted across the area. This in turn may lead to small-scale flooding and generation of debris flows. To mitigate future flood hazards, the Antelope Valley Flood Control and Water Conservation Plan contemplates construction of a flood control channel adjacent to the WEA of the landfill, along the east side of future 5th Street East.



LEGEND

Area of the sub-basin where run-off to the Lancaster Landfill Site would be collected.

Qcs - Thin, irregular veneer of wind-blown sand over lacustrine and alluvial sediments

Qdf - Debrisflow deposits of gravelly sand

Qal - Alluvial deposits of silty sand and clay

— — Geologic contact

– – – – Inferred high shoreline of Lake Thompson at the end of the Pleistocene (Dibblee, 1960)

▬ Large ground cracks (GeoLabs, 1991)

5000 feet

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 5.2–1

STORMWATER RUN-OFF SUB-BASIN AREA

Source: Geologic Associates Geology Report 1994

Total annual precipitation in the Lancaster area averages five to seven inches per year, but uncommon events of short-term precipitation can vary over wide ranges (0.7 to 1.8 inches for a six-hour rain event). The National Oceanography and Atmospheric Agency (NOAA) has estimated (1988) that short-term precipitation during any given year might reach the following values:

Probability of occurrence in any given year	Duration of rain in hours	Precipitation in inches
0.5	6	0.7
0.2	6	1.0
0.1	6	1.2
0.01	6	1.8
0.5	24	1.0
0.2	24	1.6
0.2	24	1.7
0.01	24	3.0

The surface area of the sub-basin where runoff to the LLRC is located (Figure 5.2-1) is approximately 1,600 acres. Thus, the worst case scenario of a 24-hour rainfall with an annual probability of occurrence of 0.01 (equivalent to a recurrence interval of 100 years) would yield a runoff volume of 400 acre-feet over a 24-hour interval. A six hour rainfall with an annual probability of occurrence of 0.01 (recurrence interval of 100 years) would yield a runoff volume of 240 acre-feet over a six hour interval.

5.2.2 THRESHOLDS OF SIGNIFICANCE

Any of the following impacts regarding drainage or potential flooding would be considered a potentially significant impact:

- ❑ Cause substantial flooding, erosion, or siltation.
- ❑ Result in changes in currents, or the course of direction of water movements, in either marine or fresh waters.

- ☐ Result in changes in absorption rates, drainage patterns, or the rate and amount of surface runoff.
- ☐ Alter the course or flow of flood waters.
- ☐ Change the amount of surface water in any water body.
- ☐ Expose people or property to water related hazards such as flooding or tidal waves.
- ☐ Propose facilities that would be located in flood-prone areas.
- ☐ Propose facilities that would increase off-site flood hazard, erosion or sedimentation.

5.2.3 IMPACTS

Implementation of the proposed project will result in a change in topography and ground surface relief as a result of the building up of two new refuse prisms. Because the WEA is characterized by a deranged drainage, the construction of the west expansion is not likely to interfere with fluvial processes. The EEA, in contrast, has well-defined drainages that would be blocked by the east refuse prism, mitigation measures including stormwater drainage controls are discussed in Subsection 5.2.4.

Given its small size, the project is not likely to change the local climate of the region or to alter precipitation patterns. The rates of infiltration of fluvial water, however, might change slightly with respect to existing conditions, though the very small precipitation rates characteristic of the Mojave make it hard to quantify the magnitude of such negligible changes. Qualitatively, we can foresee two different conditions. First, when rain is of low intensity, under "existing conditions" the water infiltrates quickly, very little runoff occurs, and the high evaporation rates of the desert remove this water from the soils through evaporation prior to its migration to the deep zone of groundwater saturation. In the "development scenario" water that falls on the landfill would be incorporated into the refuse cells, and runoff or deep infiltration would again be negligible.

The second condition would result from high intensity rain. Under "existing conditions" some of this water might flow away from the site by channel flow (particularly on the EEA), but most of it will remain in depression storage, and will infiltrate through cracks to depths of a few inches. Under the "development scenario" most of this water would move away from the site through peripheral diversion channels, and eventually become stored at Rosamond Lake. A credible, worst-case scenario would be a 24-hour storm that delivers three inches of rain. Given the area of the site and assuming perfect efficiency (i.e., runoff with no absorption into the soil), this precipitation rate would contribute a total of 43.5 acre-feet of additional water to the inflow of Rosamond Lake. A more normal event might be a six-hour storm delivering one inch of rain, which would contribute a total of 14.5 acre-feet of additional water to the inflow of Rosamond Lake.

The rates of surface runoff toward Rosamond Lake might increase slightly on account of the project. Rosamond Lake has a surface area of approximately 16,000 acres, so the addition of 14.5 acre-feet of water (in the case of a six-hour storm) or 43.5 acre-feet of water (in the case of the 24-hour storm) would result in negligible increases in the level of the lake of 0.01 to 0.03 inch, respectively.

The assumption of perfect efficiency, i.e., 100 percent runoff of all precipitation, is very conservative in light of the very dry climate in the area. In reality, no runoff will reach Rosamond Lake in all but the most severe storms, due to the high rate of infiltration that would be expected between the site and Rosamond Lake.

5.2.4 MITIGATION MEASURES

Interim drainage controls are designed to prevent stormwater from entering the active working area, and prevent surface water ponding and soil cover erosion within the landfill limits. Stormwater will be managed during filling activities through the construction of temporary and permanent diversion ditches and sedimentation ponds.

* Inspection and maintenance of all drainage facilities will be periodically conducted to ensure continual and proper operation.

* In accordance with the fill phasing plan shown on Figure 3-5, a diversion ditch will be constructed in stages around the landfill expansion perimeter to carry surface water to designated discharge points. Temporary diversion ditches will be constructed as necessary around each individual landfill phase while it is operational. Surface runoff will be diverted and collected in one of the proposed sedimentation ponds. Any stormwater entering the active working area and contacting exposed refuse will be contained at the active face with the construction of temporary containment berms to prevent potentially contaminated run-off from being discharged offsite.

* Permanent stormwater and erosion controls will be provided during landfill construction through completion of the final grades, as shown on Figures 5.2-2 Drainage Plan, 5.2-3 Cross Sections - West Expansion and 5.2-4 Cross Sections - East Expansion.

Figure 5.2-2 indicates the locations, sizes and grades of drainage ditches, terraces, downdrains, and sedimentation ponds, all of which will serve the completed WEA and EEA. As depicted, surface water will be carried to the perimeter drainage ditch via drainage terraces and downdrains during each phase of landfill development. The perimeter drainage ditch will convey surface water to the appropriate sedimentation

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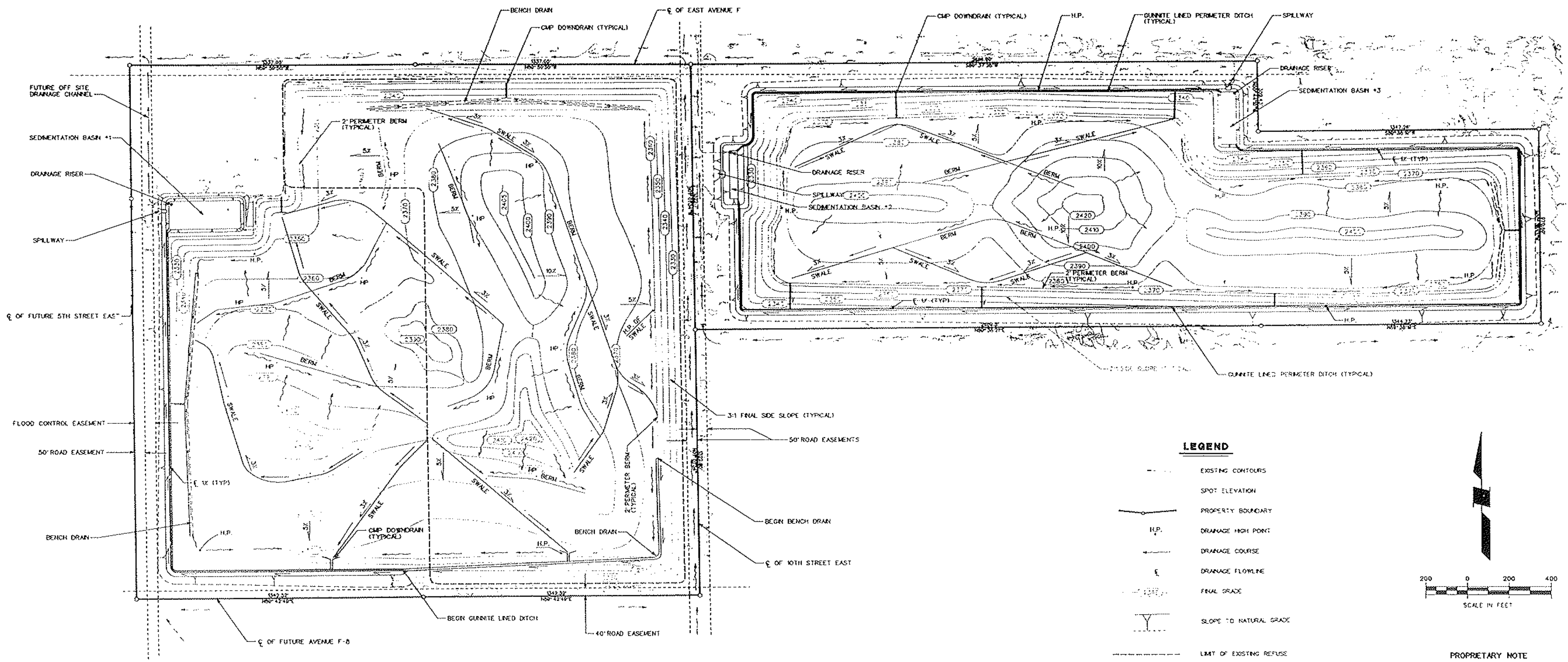
* Measures required per current Federal, State and Local landfill regulations pertaining to operations.



LEGEND

- EXISTING CONTOURS
- SPOT ELEVATION
- PROPERTY BOUNDARY
- H.P. DRAINAGE HIGH POINT
- DRAINAGE COURSE
- ℄ DRAINAGE FLOWLINE
- FINAL GRADE
- SLOPE TO NATURAL GRADE
- LIMIT OF EXISTING REFUSE
- BENCH AND BERM FLOW LINE
- SWALE AND CHANNEL FLOW LINE

200 0 200 400

SCALE IN FEET

PROPRIETARY NOTE

NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27, 1992 AT A SCALE OF 1"=100' AND 2' CONTOUR INTERVAL.

2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO. 4089), DATED 8-18-81.

3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1988).

4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.

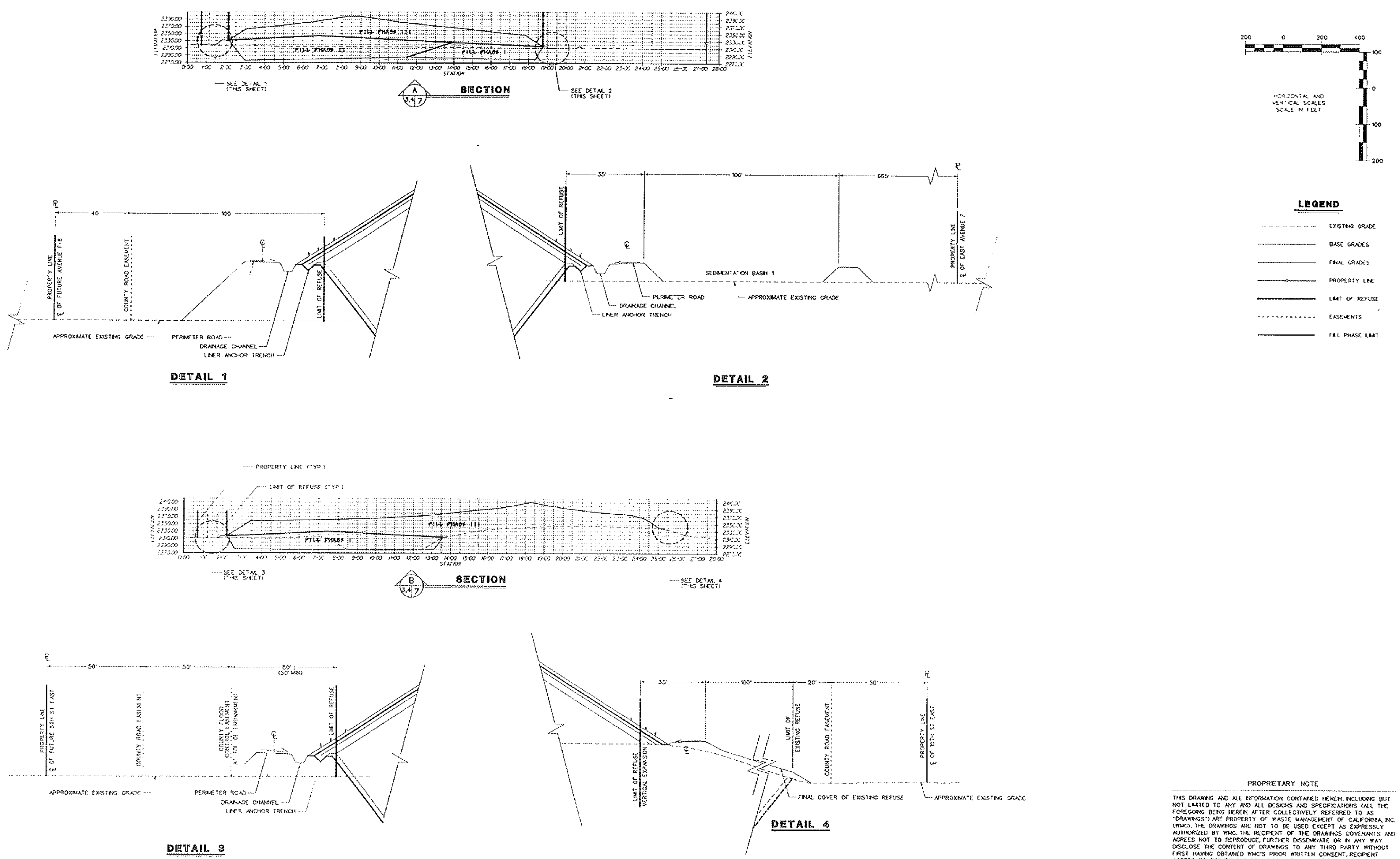
5- ALL SWALES TO BE LINED WITH 15' WIDE 40 MIL HDPE AND COVERED TO 6" MIN. DEPTH WITH COBBLE (AGGREGATE).

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.2-2

DRAINAGE PLAN

Source : Rust Design Report 1994



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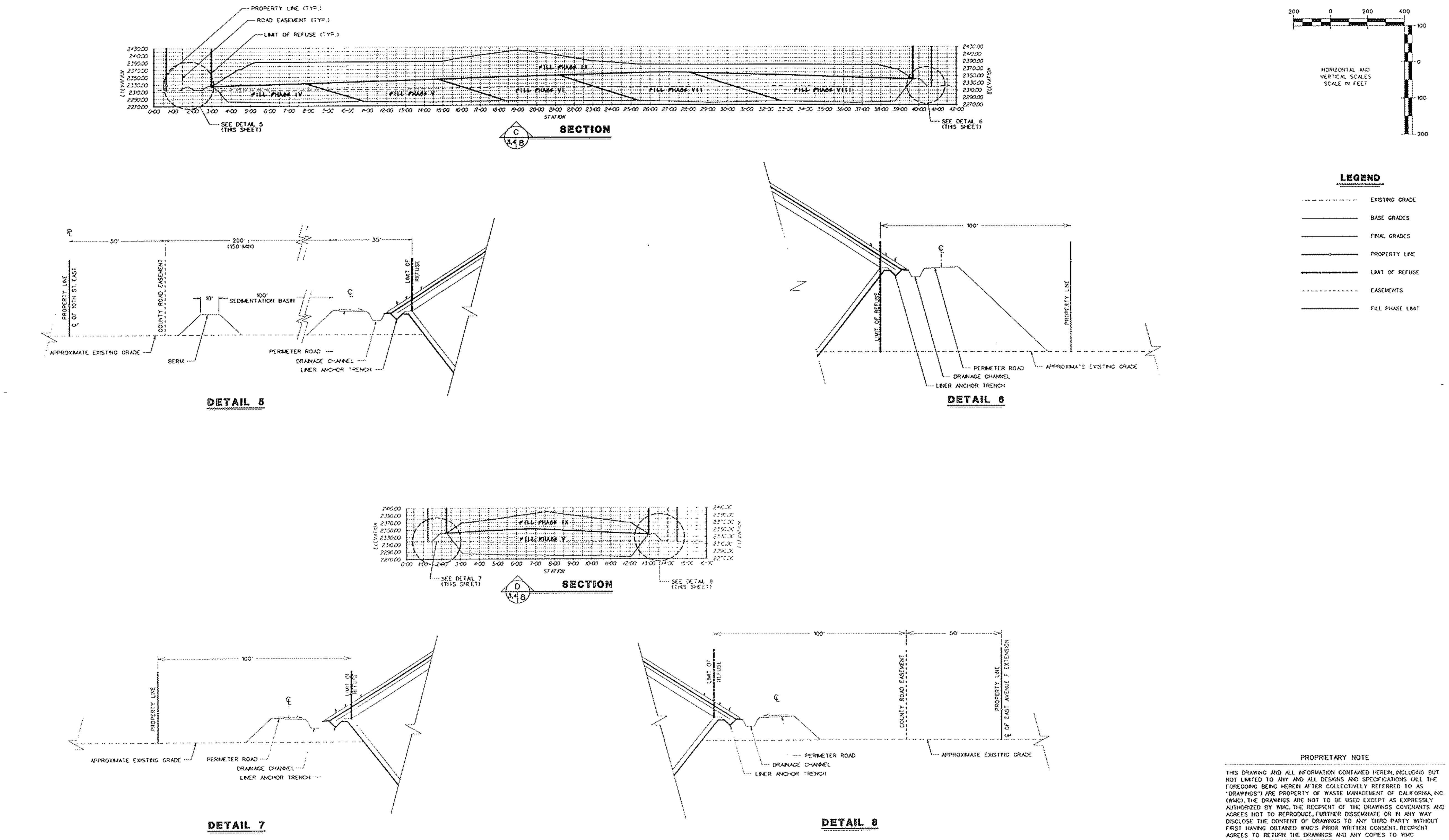
LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.2-3

CROSS SECTIONS WEST EXPANSION

Source : Rust Design Report 1994



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LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.2-4

CROSS SECTIONS EAST EXPANSION

Source : Rust Design Report 1994

pond (one basin will be located on the WEA and two basins will be located on the EEA). Erosion protection will be provided as necessary on all drainage routes, as discussed below.

* Surface drainage facilities, vegetated soil cover areas, intermediate fill surfaces, and on-site access roads will be inspected routinely and at least daily during high-intensity rainfall periods. Any necessary repairs will be completed as soon as possible. When and where erosion is a problem, ditches, temporary berms, or other erosion control measures will be used as necessary to mitigate the problem. Damaged areas will be repaired as soon as weather conditions permit.

* Sealing of cracks caused by settlement in the intermediate and final cover, and repairing any erosion damage that may occur as a result of extremely heavy rainfall or wind will be a primary focus of the on-site maintenance program. Such action, to be undertaken as part of routine site operations, should preclude problems associated with 1) leachate generation due to infiltration of surface water; 2) attraction of insects or rodents to exposed wastes; and 3) potential landfill gas emissions.

* Off-site drainage will be separated from on-site drainage and will be controlled by earth berms and channels that will direct it away from the site to the respective existing natural water courses. A 100-foot wide drainage easement along the east side of future 5th Street East will be used for the construction of a flood control channel, in accordance with the Antelope Valley Flood Control and Water Conservation Plan.

* Figure 3-5 depicts the fill phasing sequence for the landfill expansion. Phases I-III in the WEA will be developed first, followed by Phases IV-IX in the EEA. As development of Phase I progresses from north to south, grading of daily and intermediate cover will maintain a minimum three percent slope to promote sheet

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* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

flow drainage towards Sedimentation Basin 1 (see Figure 5.2-2) for percolation and evaporation and/or used for dust control or irrigation water onsite.

* Development of Phase II will proceed from south to north, with sheet flow draining to the southern perimeter channel and/or to the northwesterly detention basin. Development of Phase III will proceed from north to south with drainage flowing to outer perimeter channels and ultimately to Sedimentation Basin 1.

* The development of the EEA will commence from west to east with Phases IV through VIII. Fill operations for each of the EEA phases will proceed from south to north, with three percent minimum slopes maintained to direct flow to the adjacent excavated cell and to the southerly channel. Ponded water from excavated cells will be pumped to the southerly channel which flows to Sedimentation Basin 2 for Phases IV and V, and to Sedimentation Basin 3 for Phases VI, VII, and VIII. Excavation material from each adjacent cell will be used as daily cover for each phase of the EEA.

These mitigation measures are technically and economically feasible, and have been incorporated in the design plans of the project. Implementation of these mitigation measures will reduce all potential flood hazard impacts to a less than significant level.

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* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

5.3 FIRE HAZARD

5.3.1 EXISTING CONDITIONS

The LLRC is located within the Los Angeles County Fire Zone and is an undeveloped area sparsely vegetated by shadescale scrub and Joshua trees. This vegetation community provides a low fuel-load fire hazard. The area receives an average annual precipitation of five to seven inches, while evapotranspiration is approximately 60 inches per year.

Landfills typically experience minor fires each year. These minor fires are usually caused by the dumping of "hot loads" into the landfill. "Hot loads" occur when smoldering materials (e.g., coals) are present or enclosed in containers such as a collection vehicle, and re-ignited when stirred by dumping. Glass and other shiny material can reflect the sun and generate enough heat to start a small fire. Ashes may also restart if not covered promptly. Small fires are handled by on-site personnel. Waste Management of Lancaster has indicated that there have been only minor on-site occurrences related to truck fires which have required the assistance of the Los Angeles County Fire Department.

As noted in the air quality analysis (Section 5.6), landfill gas (methane) is produced by the decomposition of organic refuse. The flammable gas can migrate to the surface of a landfill and be released into the atmosphere if not collected. Landfill gas emissions can be controlled in two ways. Operational practices including sufficient cover and repair of cracks, fissures and settling can greatly minimize surface emissions. Gas emissions are also controlled by the landfill gas extraction system. Collected gas is a renewable resource, and when recovered by a gas extraction system, can either be sold for energy use or flared into the atmosphere for disposal.

An extraction system, with a flame arrest in the flare station, is now in place at LLRC. The system is designed to operate 24 hours a day and collect gas which is drawn from the system by blowers. This system currently operates intermittently due to the low quantities of gas being generated by the disposed refuse. The gas is fed into a flare station for combustion. Current procedures for this system include system leak checks and the flare arrest equipment.

The LLRC maintains one 3,500-gallon water truck and two bulldozers on-site that are available 24 hours per day for fire prevention and protection. All trucks, bulldozers and heavy equipment at the landfill have a fire extinguisher, as required by law. A fire extinguisher is also in every vehicle and building on-site.

5.3.1.1 FIRE PROTECTION SERVICE

Fire protection service for the LLRC is provided by the Los Angeles County Fire Department. The site is within the area served by Station 33, located at 44806 North Cedar Avenue in Lancaster and Fire Station 117, located at 44851 30th Street East in Lancaster. Fire Station 33 has a light task force consisting of a two-person engine and a four-person quint (a hybrid engine/ladder truck apparatus) as well as a two-person paramedic squad. Fire Station 117 has a four-person engine company.

5.3.2 THRESHOLDS OF SIGNIFICANCE

Any of the following impacts regarding fire hazards would be considered a potentially significant impact:

- ❑ Substantially increase the potential for landfill fires.
- ❑ Require additional fire protection staff or equipment to maintain an acceptable level of service.

5.3.3 IMPACTS

The LLRC will continue to accept and process combustible waste under the proposed expansion. Potential impacts associated with fire and fire hazard at the proposed landfill expansion operations are considered adverse, but less than significant after mitigation. Mitigation measures listed in the following section have been included to ensure that standard fire prevention and control measures currently implemented at the existing landfill will continue to be implemented in the expansion areas.

The landfill expansion project will not require additional fire protection staff or equipment to maintain acceptable levels of fire protection service. The Los Angeles County Fire Department has indicated that they would be able to adequately handle the project.

5.3.4 MITIGATION MEASURES

All operations personnel are trained annually in fire prevention, fire extinguisher use, and emergency response procedures.

Fire prevention for landfill equipment and vehicles would be provided by frequent removal of debris and dust from undercarriages and engine compartments, and checking for, and repairing oil and fuel leaks. Portable fire extinguishers are provided on all landfill equipment. The entrance facilities and maintenance buildings are also equipped with suitable fire extinguishers for extinguishing any minor fires and for maintaining personnel safety.

Any fire that occurs in a refuse fill area would be extinguished by landfill personnel using appropriate landfill equipment, stockpiled soil cover, and when necessary, a water truck. The Los Angeles County Fire Department would be summoned if necessary. The Fire Department has indicated that they would be able to adequately handle the expansion. There are no significant fire hazards associated with the proposed project.

A Spill Countermeasure and Control Plan (SCCP) and Emergency Management Plan has been prepared for the RWQCB and CIWMB in accordance with Title 14 and Title 23, outlining fire hazard reduction procedures and actions to be taken in case of a fire. The following measures would be taken if a fire occurs in a refuse area:

1. Burning refuse will be excavated and separated from the fill area and covered immediately with on-site soil.

2. If necessary, water will be applied to the burning refuse using the on-site water truck.

3. The Los Angeles County Fire Department will be summoned if site personnel and equipment cannot extinguish the fire.

The following actions will be taken if a fire occurs in the 100-foot buffer zone areas surrounding the landfill:

1. Maximum effort will be made to prevent the fire from reaching refuse fill areas by utilizing on-site assets to:

    - ❑ Excavate a fire break between the landfill and the oncoming fire. Excavated soils will be bermed on the fire side of the fire break for additional protection.

    - ❑ Wet down areas between the fire break and refuse area using the on-site water truck.

2. Notify the Los Angeles County Fire Department.

The following actions will be taken if a fire occurs in a site structure:

1. Notify the Los Angeles County Fire Department.

2. Site personnel will prevent fire from spreading to surrounding area by using on-site equipment to construct fire breaks, and by using the water truck to wet down adjacent areas.

In addition to the landfill's Emergency Response Plan, the following procedures are required by Los Angeles County Fire Department's Fire Prevention Regulation No. 10 (dated September 25, 1986) to ensure that adequate access and fire protection facilities are established and maintained at the proposed landfill. This regulation specifically addresses combustible waste disposal sites. Compliance is verified by the Fire Department during their routine inspections:

a. A water supply shall be provided which meets Fire Department standards as determined by the Fire Department Protection Engineering Section of the Prevention and Conservation Bureau. Future expansion of the facility should be considered when determining the size and placement of water mains and hydrants.

b. Class II Standpipe System shall be provided and located within 200 feet of dumping operations and shall have sufficient one and one-half inch hose with a variable fog nozzle to reach all portions of such operations. In lieu of a Class II Standpipe System, the use of water tender trucks may be permitted, provided each is equipped with two and one-half-inch outlets for fire department use. The LLRC uses water trucks for fire fighting.

c. Approved access roads shall be provided and maintained at all times around the dumping areas to provide access for fire fighting equipment. Weeds, grass and combustible vegetation shall be removed for a distance of ten feet on both sides of all access roads used by rubbish trucks or the public.

d. A firebreak or clearance of all dry weeds and grass shall be provided around the dumping areas. Secondary firebreaks, as required by the Fire Department, shall be provided and maintained in order to prevent the spread of fire beyond the dump facility. Such secondary firebreaks shall be not less than 60 feet in width.

e. The property shall be adequately fenced to prevent entry of unauthorized persons and gates shall be locked at all times when the facility is not supervised. An attendant shall be on duty when the site is open to the public.

f. All on-site driveways shall provide a minimum unobstructed width of 26 feet clear to sky to within 150 feet of all portions of the exterior walls of the first story of any building.

g. "NO SMOKING" signs shall be posted on the facility and at all entrances to the facility. Smoking regulations shall be strictly enforced.

h. Dumping operations shall be carried on in such a manner as to minimize the possibility of fires occurring in the waste material. Under no circumstances shall any exposed surface or face of combustible materials be left uncovered at the close of daily operations.

i. Any fire which occurs on the premises shall be reported immediately to the Fire Department and it shall be the responsibility of the operator to immediately extinguish any such fire. A telephone shall be installed for the purpose of notifying the Fire Department in case of fire.

j. Provisions shall be made to control or prevent the blowing of papers or other combustible waste materials into the brush or outside the established dumping areas. The premises shall be kept free of any accumulations of waste combustible material which might constitute a fire menace.

The applicant shall participate in an appropriate financing mechanism to provide funds for fire protection facilities which are required by new commercial, industrial or residential development in an amount proportionate to the demand created by this project.

Continued implementation of the mitigation measures listed above will reduce potential fire hazard impacts to a less than significant level.

5.4 NOISE

5.4.1 EXISTING CONDITIONS

The existing noise environment in the vicinity of the LLRC site is determined primarily by haul truck traffic on adjacent roadways and by noise generated by landfill operations. Haul truck traffic and earth moving equipment (e.g., dozers, scrapers, and compactors) are the most significant noise sources associated with the landfill operations (Appendix D). Currently the areas surrounding the landfill have fairly quiet existing ambient noise environments.

5.4.1.1 BACKGROUND

Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Table 5.4-1 provides examples of various noises and their typical A-weighted noise level.

The "equivalent noise level," or Leq is the average noise level on an energy basis for any specified time period. The Leq for one hour is the energy average noise level during the hour, specifically, the average noise based on the energy content (acoustic energy) of the sound. It can be thought of as the level of a continuous noise which has the same energy content as the fluctuating noise level. The equivalent noise level has the units of dBA.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on man, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. The predominant rating scale now

SOUND LEVELS AND LOUDNESS OF ILLUSTRATIVE NOISES IN INDOOR AND OUTDOOR ENVIRONMENTS

(A-Scale Weighted Sound Levels)

dB(A)	OVER-ALL LEVEL Sound Pressure Level Approx. 0.0002 Microbar	COMMUNITY (Outdoor)	HOME OR INDUSTRY	LOUDNESS Human Judgement of Different Sound Levels
130	UNCOMFORTABLY	Mil. Jet Aircraft Take-Off w/ After-burner From Aircraft Carrier @ 50 Ft. (130)	Oxygen Torch (121)	120 dB(A) 32 Times as Loud
120 110	LOUD	Turbo-Fan Aircraft @ Take Off Power @ 200 Ft. (90)	Riveling Machine (110) Rock-N-Roll Band (108-114)	110 dB(A) 16 Times as Loud
100	VERY	Jet Flyover @ 1000 Ft. (103) Boeing 707. DC-8 @ 6080 Ft. Before Landing (106) Bell J-2A Helicopter @ 100 Ft. (100)		100 dB(A) 8 Times as Loud
90	LOUD	Power Mower (96) Boeing 737, DC-9 @ 6080 Ft. Before Landing (97) Motorcycle @25 Ft. (90)	Newspaper Press (97)	90 dB(A) 4 Times as Loud
80		Car Wash @ 20 Ft. (89) Prop. Airplane Flyover @ 1000 Ft. (88) Diesel Truck, 40 MPH @ 50 Ft. (84) Diesel Train, 45 MPH @ 100 Ft. (83)	Food Blender (88) Milling Machine (85) Garbage Disposal (80)	80 dB(A) 2 Times as Loud
70	MODERATELY LOUD	High Urban Ambient Sound (80) Passenger Car, 65 MPH @ 25 Ft. (77) Freeway @ 50 Ft. From Pavement Edge, 10:00 AM (76 +or- 6)	Living Room Music (76) TV-Audio, Vacuum Cleaner	70 dB(A)
60		Air Conditioning Unit @ 100 Ft. (60)	Cash Register @ 10 Ft. (65-70) Electric Typewriter @ 10 Ft. (64) Dishwasher (Rinse) @ 10 Ft. (60) Conversation (60)	60 dB(A) 1/2 as Loud
50	QUIET	Large Transformers @ 100 Ft. (50)		50 dB(A) 1/4 as Loud
40		Bird Calls (44) Lower Limit Urban Ambient Sound (40)		40 dB(A) 1/8 as Loud
	JUST AUDIBLE	(dB[A] Scale Interrupted)		
10	THRESHOLD OF HEARING			

SOURCE: Reproduced from Melville C. Branch and R. Dale Beland, Outdoor Noise in the Metropolitan Environment. Published by the City of Los Angeles, 1970, p.2.

Source: Mestre Greve Associates Noise Assessment Report, 1997

LANCASTER LANDFILL AND RECYCLING CENTER

TABLE 5.4-1

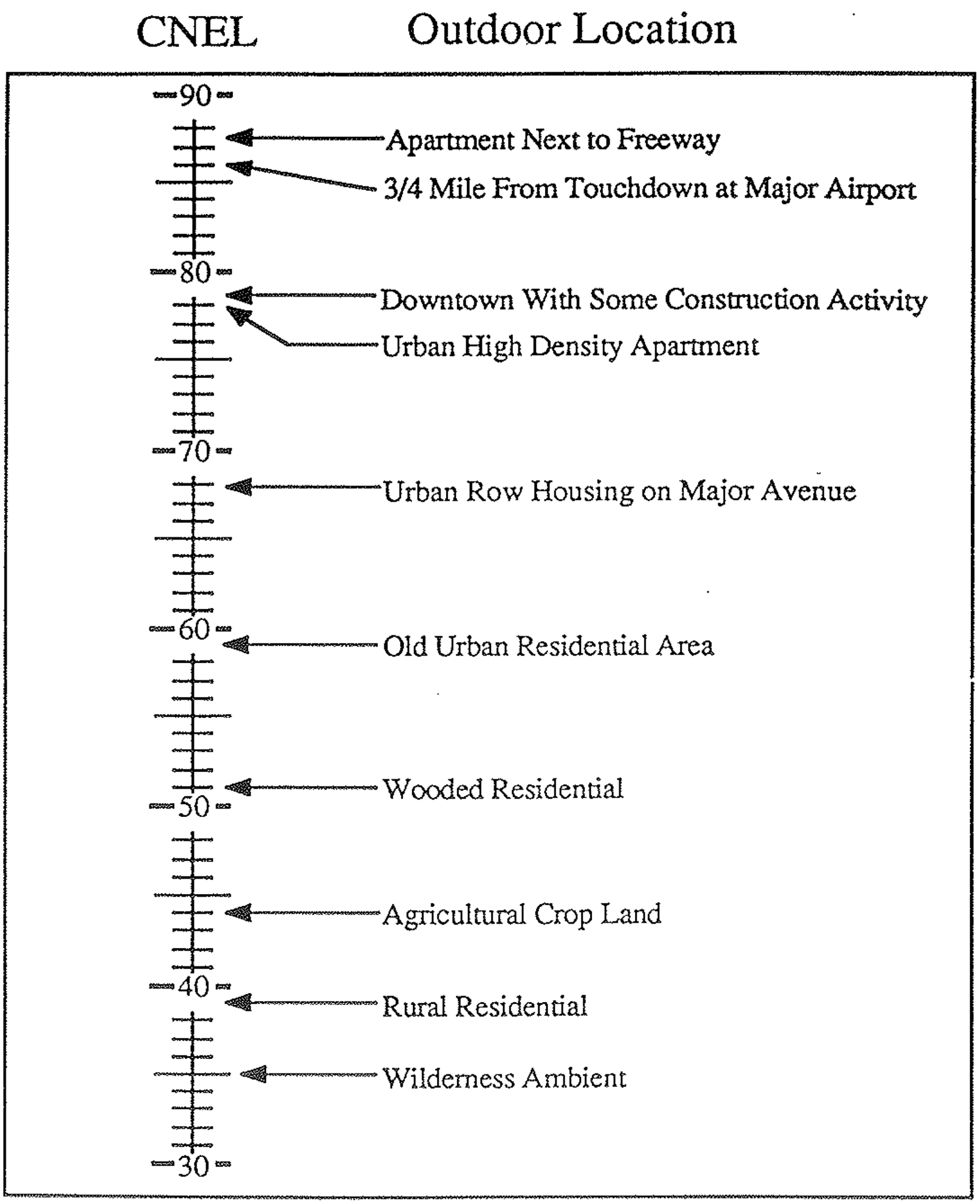
EXAMPLES OF TYPICAL SOUND LEVELS

in use in California for land use compatibility assessment is the Community Noise Equivalent Level (CNEL). The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that the noise levels during certain hours are adjusted for increased sensitivity of hearing during these hours, by adding 5 dB to each of the evening hour readings (7:00 p.m. to 10:00 p.m.) and 10 dB to each reading during the nighttime hours (10:00 p.m. to 7:00 a.m.). These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. The day-night or Ldn scale is similar to the CNEL scale except that evening hour readings are not adjusted. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Table 5.4-2.

5.4.1.2 COMMUNITY NOISE ORDINANCES

Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Intermittent or occasional noises such as those associated with certain types of mining operations are not of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale. A common method of characterizing these noise levels is with the "percent noise level" or L%. The percent noise level describes the noise level which is exceeded during a certain percentage of the measurement period. For example, L50 is the noise level exceeded 50 percent of the time and represents the average noise level. Similarly, L1 is the noise level exceeded 1 percent of the time and represents the peak noise level, and L90 is the noise level exceeded 90 percent of the time and represents the background noise level.

The County of Los Angeles Noise Ordinance is designed to protect noise sensitive areas such as residential areas from non-transportation related noise sources. Table 5.4-3 presents the exterior noise standards contained in the County of Los Angeles



Source: Mestre Greve Associates Noise Assessment Report, 1997

LANCASTER LANDFILL AND RECYCLING CENTER

TABLE 5.4–2

TYPICAL OUTDOOR NOISE LEVELS

Noise Ordinance. The Noise Ordinance is designed to control unnecessary, excessive and annoying sounds generated from a stationary source impacting an adjacent property.

The noise ordinance requirements can not be applied to mobile noise sources such as heavy trucks when traveling on public roadways or to motor vehicles on private property. Control of the mobile noise sources on public roads is pre-empted by Federal and State laws.

TABLE 5.4-3
LOS ANGELES COUNTY
NOISE ORDINANCE EXTERIOR NOISE STANDARDS

Maximum Time of Exposure	Noise Metric	Noise Level not to be Exceeded	
		7 a.m. to 10 p.m. (daytime)	10 p.m. to 7 a.m. (nighttime)
Residential Areas			
30 Minutes/Hour	L50	50 dBA	45 dBA
15 Minutes/Hour	L25	55 dBA	50 dBA
5 Minutes/Hour	L8.3	60 dBA	55 dBA
1 Minute/Hour	L1.7	65 dBA	60 dBA
Any Period of Time	Lmax	70 dBA	65 dBA

The County of Los Angeles Noise Ordinance is important because it provides noise levels which are deemed to be acceptable in residential areas. By comparing the noise levels generated by the landfill activities to the Noise Ordinance, the acceptabilities of the noise levels can be determined.

Additionally, the County of Los Angeles and most cities in the area have adopted noise standards for new residential developments impacted by transportation noise sources (e.g., roadways). The standards are 65 CNEL (or 65 LDN) for private outdoor living areas (e.g., rear yards), and 45 CNEL (or 45 LDN) for indoor areas.

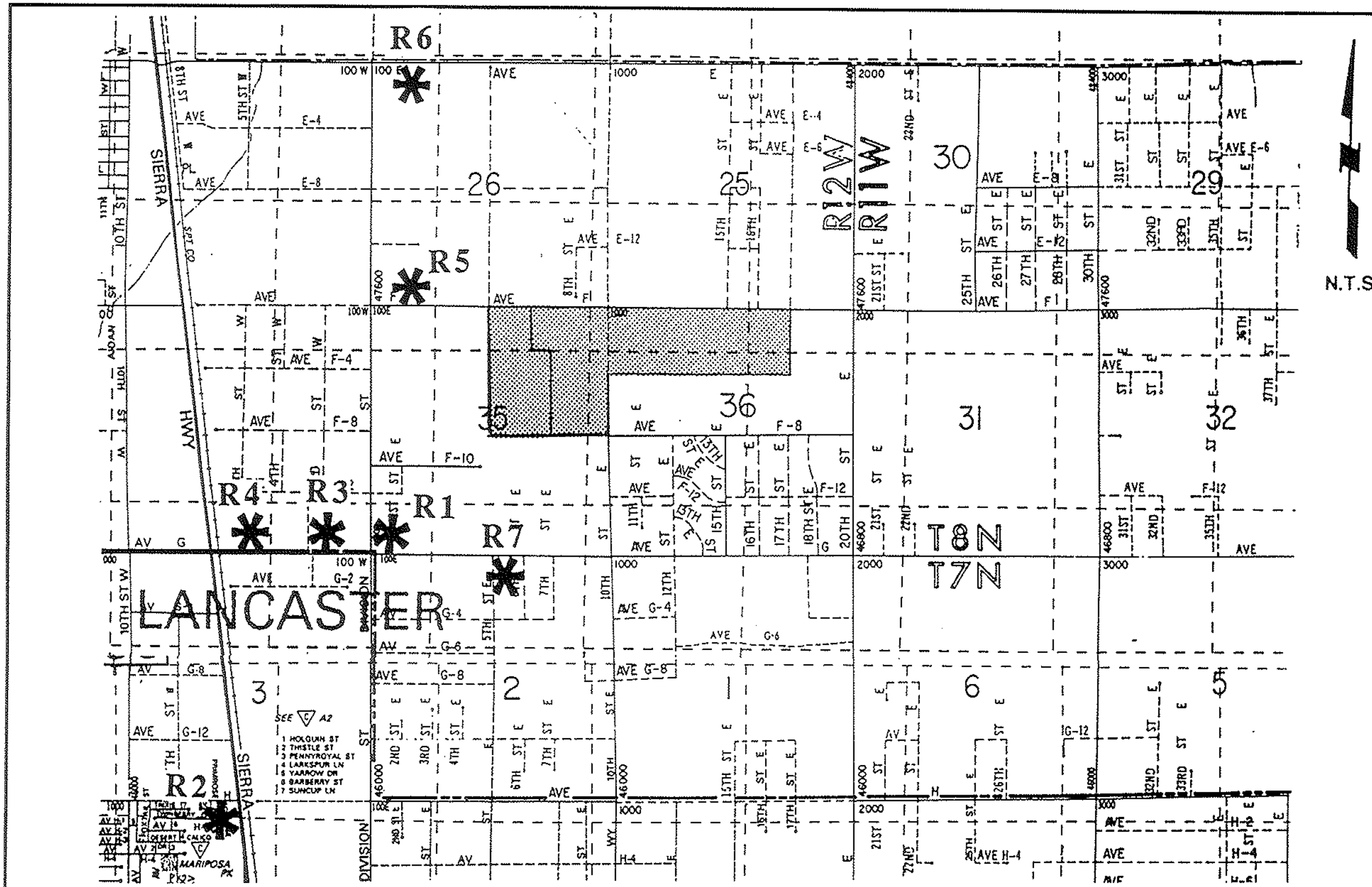
While these standards do no apply directly to this project, they are used as a guideline for assessing off-site landfill traffic impacts.

5.4.1.3 AMBIENT NOISE MEASUREMENTS

Noise measurements were made at seven locations in the existing residential areas surrounding the LLRC. The measurement locations are depicted in Figure 5.4-1. Measurements of the traffic noise levels were made during and after the operation hours. The measurements were made during the daytime hours (between 10:00 a.m. and 6:00 p.m.) and evening hours (between 7:00 p.m. and 8:00 p.m.) on January 13, 1994. (The current operation hours are Monday through Friday between 6:00 a.m. and 4:45 p.m.) The wind speed during the time of measurements was light (0 to 5 miles per hour).

The measurements were made with a Bruel & Kjaer Type 2231 Sound Level Meter, and calibrated before and after each measurement series. At least two 15 minute measurement periods were made on each of the measurement locations. The noise measurement results presented in Table 5.4-4. The results are presented in terms of the Leq, maximum noise levels (Lmax), minimum noise levels (Lmin) and L%. The L50 percentile level for example, represents the noise levels exceeded 50 percent of the time. The L90 levels represent the most quiet noise levels experienced, or the background noise levels. The L50 noise levels are comparable with the ambient noise levels. These noise levels were usually due to traffic as well as other urban noise sources.

The data in Table 5.4-4 represent the existing ambient noise levels in the residential areas surrounding the LLRC. The noise environment in the existing residential areas are mainly due to the traffic noise from the nearby roadways. Additionally, existing landfill haul trucks also contribute to the noise environment. Designated landfill haul truck routes are along Challenger Way, Avenue E, Avenue F, Avenue G, Division



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 5.4–1
AMBIENT NOISE MEASUREMENT LOCATIONS

Source: Mestre Greve Associates Noise Assessment Report, 1997

Street and Antelope Valley Freeway (SR-14). Therefore, all the measurement sites are being affected by noise levels from the existing landfill haul trucks. According to the measurements, the existing average ambient noise levels are generally in the range of low 40 dBA to low 50 dBA. For most daytime cases, trucks from the nearest roadways were the cause of Lmax noise levels. (The Lmax of 93.9 dBA from Site R5 and 79.4 dBA from Site R4, however, were due to a police siren and a truck horn). For all measurement sites, the landfill activities were audible only at Site R5 and faintly audible at Site R6. The distant landfill noise depict the background noise levels at these two sites. Other urban noise sources in the area include distant traffic, aircraft, helicopter, people, and dog barking.

TABLE 5.4-4
AMBIENT NOISE MEASUREMENT RESULTS (dBA)

Percentile Noise Levels (dBA)								
Site Number (1)	**Leq**	**Lmax**	**Lmin**	**L1.7**	**L8.3**	**L25**	**L50**	**L90**
Residential Areas (Daytime hours between 10 a.m. to 6 p.m.)								
R1. N.W. Division/G Street	53.8	70.3	34.5	66.0	56.5	48.0	42.5	37.0
	50.7	66.9	32.8	60.5	55.5	47.0	43.0	37.5
R2. S.W. Sierra Hwy/H Street	53.2	68.3	38.7	61.5	56.5	53.5	50.0	43.5
R3. G Street - West of Division	53.8	65.9	36.9	65.8	58.5	48.0	44.5	40.0
	51.8	66.8	42.6	54.6	62.0	55.0	47.5	44.5
R4. G Street - East of Sierra Hwy	60.0	79.4	36.1	71.0	60.0	53.5	47.0	39.0
	59.2	73.3	39.6	69.0	64.0	58.0	52.5	44.5
R5. F Street - East of Division	69.7	93.9	33.4	74.0	63.5	57.0	50.0	36.5
	55.2	73.8	33.4	66.5	57.5	48.5	42.5	37.0
R6. S.E. Division/E Street	35.5	44.0	30.9	39.5	38.0	36.5	64.5	33.0
	42.2	48.6	36.0	47.5	45.5	43.5	41.0	38.0
R7. G St-Between 10th & Division	61.7	76.8	39.2	72.5	67.5	57.5	48.0	40.5
	62.9	79.0	40.6	73.0	68.0	59.0	51.0	43.0
(Evening hours between 7 p.m. to 8 p.m.)								
R2. S.W. Sierra Hwy/H Street	51.2	69.7	35.2	60.9	55.4	52.0	48.1	41.0
R5. F Street - East of Division	51.0	66.0	32.0	62.1	54.2	47.0	41.3	35.3

(1) See Figure 5.4-1.

5.4.1.4 EXISTING TRAFFIC NOISE LEVELS

An estimate of highway noise levels in terms of CNEL were computed for the roadways leading directly to the landfill, and most affected by landfill traffic. The Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December, 1978) was utilized. The model was used in conjunction with the roadway measurements.

Estimates of traffic volumes, estimated speeds, and truck volumes were used with the FHWA Model to estimate noise levels in terms of CNEL. The existing traffic volumes and truck distribution were obtained from the Traffic Impact Study for Lancaster Landfill and Recycling Center, prepared by DKS Associates, December, 23, 1996 (herein referred to as DKS Traffic Study). The existing noise projections include the existing landfill haul trucks. As a worst case scenario, it is assumed that most of the landfill haul trucks, other than employee vehicles, are heavy trucks.

The distances to the 60, 65 and 70 CNEL contours for the roadways in the vicinity of the project site are given in Table 5.4-5. These represent the distance from the centerline of the road to the CNEL value shown. Note that the values given in Table 5.4-5 represent existing noise levels and these do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

The results in Table 5.4-5 indicate that areas in the immediate vicinity of Sierra Highway experience unmitigated noise levels in excess of 65 CNEL. Areas adjacent to Avenue F, Avenue G, Avenue H, Division Street and 10th Street also experience noise levels of 60 CNEL or greater.

TABLE 5.4-5
EXISTING NOISE LEVELS (dBA)

		Distance of CNEL Contour from Centerline of Roadway (Feet)		
Roadway	**Link**	**70 CNEL**	**65 CNEL**	**60 CNEL**
Avenue F				
	East of SR-14 NB Ramps	RW *	RW	59
	East of Division Street	RW	RW	RW
Avenue G				
	East of SR-14 NB Ramps	RW	RW	72
	East of Sierra Highway	RW	RW	77
	East of Division Street	RW	RW	53
Avenue H				
	East of SR-14 NB Ramps	RW	RW	69
	East of Division Street	RW	RW	RW
Division Street				
	North of Avenue G	RW	RW	71
	South of Avenue G	RW	RW	69
Sierra Highway				
	North of Avenue G	RW	54	117
	South of Avenue G	RW	54	116
10th Street				
	North of Avenue F	RW	RW	48
	South of Avenue F	RW	RW	59

* RW: Contour within roadway.

5.4.1.5 EXISTING LANDFILL OPERATIONS NOISE LEVELS

Noise measurements were made at the existing LLRC in the morning (8:00 a.m.) and afternoon hours (between 2:00 p.m. and 5:00 p.m.) of January 13, 1994. The measurements were made with a Bruel & Kjaer Model 2231 Sound Level Meter, and calibrated before and after each measurement series. The maximum noise level, minimum noise level, equivalent noise level and percentile levels for the measurement periods are presented.

According to the landfill operator, typically one dozer and one compactor will be operating in any one area at a time. Occasionally, if other equipment is in operation, it will be in another area of the landfill.

Noise measurements were made at the existing LLRC at approximately 170, 200 and 230 feet from the landfill activities (see Table 5.4-6). Noise levels at Location 1 represent a typical scenario. During the noise measurements, it appeared that the landfill was at normal landfill activities.

Measurements for Locations 4 and 5 were made along G Street which is an existing landfill haul truck route. Measurements were made at ten feet and 100 feet from single haul truck pass-bys. The data in Table 5.4-6 shows that the noise levels due to the haul trucks can be as loud as 76.5 dBA Leq at 100 feet. As a result, the haul trucks associated with the LLRC are significant sources of noise in the existing residential areas.

TABLE 5.4-6
NOISE MEASUREMENT RESULTS

				Percentile Noise Levels (dBA)				
Location	**Leq**	**Lmax**	**Lmin**	**L1.7**	**L8.3**	**L25**	**L50**	**L90**
Lancaster Landfill								
1. 200 feet from dozer and compactor	70.4	77.6	58.0	75.5	74.0	72.0	69.5	63.5
2. 200 feet from compactor	64.5	67.3	55.2	67.0	66.5	66.0	65.0	59.0
3. 170-230 feet from dozer	68.0	74.3	60.1	73.0	70.5	69.0	67.5	64.0
Haul Truck Single Pass-By								
4. 10 feet from G Street	87.9	84.8	--	--	--	--	--	--
5. 100 feet from G Street	76.5	71.0	--	--	--	--	--	--

5.4.2 THRESHOLDS OF SIGNIFICANCE

Any of the following noise related impacts would be considered a potentially significant project impact:

- ❑ Increase substantially the ambient noise levels for adjoining areas.
- ❑ Expose people to severe noise levels.

- ❑ Propose land uses that substantially increase noise levels in areas of sensitive receptors.
- ❑ Propose land uses incompatible with the baseline noise levels.

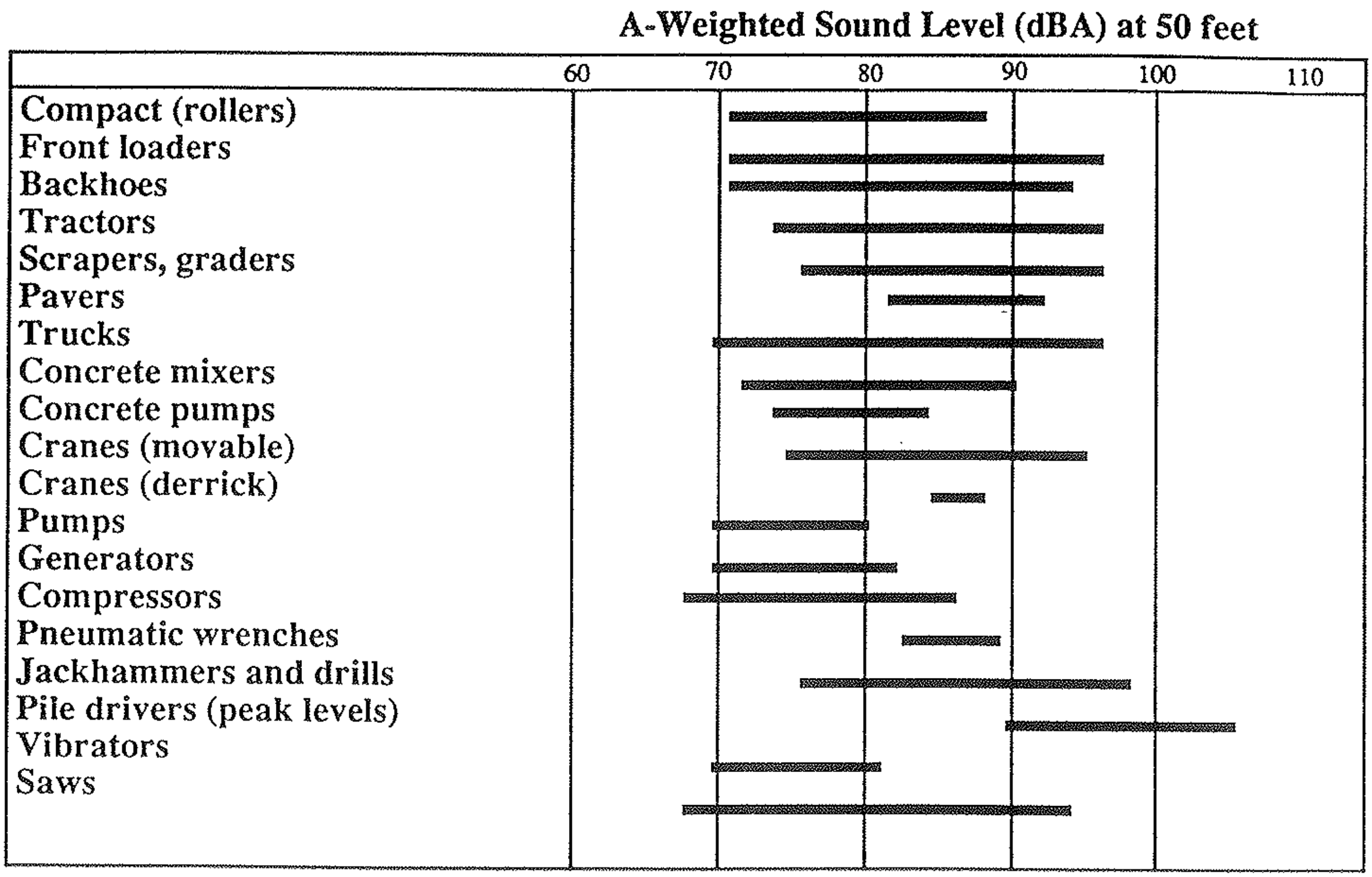
5.4.3 IMPACTS

Potential noise impacts are commonly divided into two groups; temporary and long term. Temporary impacts are usually associated with noise generated by construction activities. Long-term impacts are further divided into impacts on surrounding land uses generated by the project and those impacts which occur at the project site.

Construction Noise

The construction activities for the LLRC are divided into nine separate construction phases. Phases I, II and III will be developed at the WEA. Phases IV through IX will be developed at the EEA. According to the phasing schedule, near closure of one phase will coincide with the construction of the next phase. In general, each of the construction/excavation activities may last three weeks up to four months depending on the nature of the activities.

Worst case examples of construction noise at 50 feet are presented in Figure 5.4-2. The equipment directly involved in the excavation of the site could produce high noise levels. According to the information presented in Figure 5.4-2, the peak noise level for most of the equipment that will be used during the construction is 70 to 95 dBA at a distance of 50 feet. Construction noise typically has a drop off rate of 6 dB per doubling of distance. Therefore, at 100 feet the peak construction noise is approximately 64 to 89 dBA. At 200 feet the peak construction noise is approximately 58 to 83 dBA. Note that these noise levels are based upon worst case conditions. Typically noise levels on the site will be less.



Source: "Handbook of Noise Control," by Cyril Harris, 1979.

Source: Mestre Greve Associates Noise Assessment Report, 1997

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FIGURE 5.4-2

TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS

The closest existing residential area was estimated to be approximately 1,500 feet from the potential construction site. The unmitigated peak noise levels due to construction at the nearest existing residences are estimated to range between 41 and 66 dBA. Again, it is important to note that these noise levels are based upon worst case conditions. Noise could be more subdued at the construction site. This noise level does not take into consideration any mitigation that might occur as a result of the area's topography. The peak noise impacts from construction activities will be slightly audible at the nearest residences and would be a short term noise impact. This is a less than significant impact.

Traffic Noise

The proposed expansion project will generate some additional traffic, and as a result may alter noise levels in the surrounding areas. To assess the impact of the proposed project on land uses adjacent to streets that will serve the project, a determination was made of the change in noise along these roadways based on the DKS Traffic Study information. Due to other planned development in the area, there will be an increase in traffic in the surrounding area with or without the project. The change in noise levels generated by the additional traffic due to the landfill expansion was calculated for these roadways and are shown below in Table 5.4-7. Column 1 shows the change in future noise levels with project over future noise levels without the project. This column represents the increase in noise solely attributable to the additional traffic generated by the proposed expansion project. Column 2 shows the change in the future noise levels over existing noise levels. The future noise levels are noise levels generated from existing traffic and cumulative development in the surrounding area including the project. The change in noise levels in Column 2 represent the ultimate noise increase due to the cumulative development in the area. Assumptions for future cumulative noise levels were based on the Lancaster Traffic Model prepared by DKS Associates. This model incorporates the expected population increases projected to occur in the North County, the landfill expansion project, and all cumulative projects in the study area expected to be constructed by the year 2010 as identified through the LACDRP Development Monitoring System and discussions with the City of Lancaster.

TABLE 5.4-7
INCREASED TRAFFIC NOISE LEVELS
PROJECT AND CUMULATIVE

Roadway	Link	Noise Increase due to Project (dBA)	Noise Increase over Existing (dBA)
Avenue F	East of SR-14 NB Ramps	0.0	0.2
	East of Division Street	4.9	5.9
Avenue G	East of SR-14 NB Ramps	0.6	1.7
	East of Sierra Highway	0.5	1.9
	East of Division Street	0.0	0.2
Avenue H	East of SR-14 NB Ramps	0.3	1.4
	East of Division Street	0.0	1.1
Sierra Highway	North of Avenue G	0.0	1.1
	South of Avenue G	0.0	1.1
Division Street	North of Avenue G	1.1	2.3
	South of Avenue G	0.6	1.8
10th Street East	North of Avenue F	0.3	1.3
	South of Avenue F	1.5	2.6

In community noise assessment, changes in noise levels greater than 3 dBA are often identified as significant, while changes less than 1 dBA will not be discernible to local residents. In the range of 1 to 3 dBA, residents who are very sensitive to noise may perceive a slight change. No scientific evidence is available to support the use of 3 dBA as a significance threshold.

The future noise increases due solely to the additional traffic generated by the proposed expansion project are identified in Column 1 of Table 5.4-7. The data shows that the noise increases will range between 0.3 and 4.9 dBA. All of the noise increases are less than the 3 dBA threshold of significance, with the exception of one location. A maximum noise increase of 4.9 dBA is projected to occur along Avenue F, east of Division Street. This is due to an increase in haul trucks utilizing Avenue F. However, the noise projections for Avenue F show that the future noise levels will be less than 65 CNEL, and therefore, the noise increases due solely to the project are not considered to be significant. No adverse impacts are anticipated due to the proposed project.

The data in Column 2 indicate that the future noise levels will increase for some roadways over existing noise levels in the vicinity of the project. This is due to the relatively low amount of traffic currently in the area. The future noise increases over existing are projected to range between 0.2 and 5.9 dBA, and are all less than the 3 dBA threshold with the exception of one location. A noise increase of 5.9 dBA is projected to occur on Avenue F. However, the future traffic noise is projected to be less than 65 CNEL, and therefore, the future noise increases over existing are not projected to be significant. The future noise levels are likely to increase slowly over the years rather than immediately due also to other developments throughout the area.

Traffic volumes reported in the traffic study were used with the FHWA Highway Traffic Noise Model to project future unmitigated noise levels for all of the roadways. The modeling results are reported in Table 5.4-8 in the form of distances to the 60, 65, and 70 CNEL contours. These projections do not take into account any barriers or topography that may reduce noise levels. Table 5.4-8 presents the ultimate future noise levels.

TABLE 5.4-8
FUTURE NOISE LEVELS (dBA)

		Distance of CNEL Contour from Centerline of Roadway (Feet)		
Roadway	**Link**	**70 CNEL**	**65 CNEL**	**60 CNEL**
Avenue F				
	East of SR-14 NB Ramps	RW *	RW	73
	East of Division Street	RW	RW	53

TABLE 5.4-8
FUTURE NOISE LEVELS (dBA)
(continued)

		Distance of CNEL Contour from Centerline of Roadway (Feet)		
Roadway	**Link**	**70 CNEL**	**65 CNEL**	**60 CNEL**
Avenue G				
	East of SR-14 NB Ramps	RW	RW	86
	East of Sierra Highway	RW	41	92
	East of Division Street	RW	RW	56
Avenue H				
	East of SR-14 NB Ramps	RW	RW	83
	East of Division Street	RW	RW	RW
Division Street				
	North of Avenue G	RW	RW	92
	South of Avenue G	RW	RW	87
Sierra Highway				
	North of Avenue G	RW	67	144
	South of Avenue G	RW	66	142
10th Street				
	North of Avenue F	RW	RW	57
	South of Avenue F	RW	RW	85

* RW: Contour within roadway.

The data in Table 5.4-8 indicates that noise levels of greater than 65 CNEL are projected to occur along Sierra Highway and a portion of Avenue G. However, noise increases due to the project in those areas are less than 1.0 as shown on Table 5.4-7. Areas adjacent to Avenue F, most of Avenue G, Avenue H, Division Street and 10th Street will be in excess of 60 CEL.

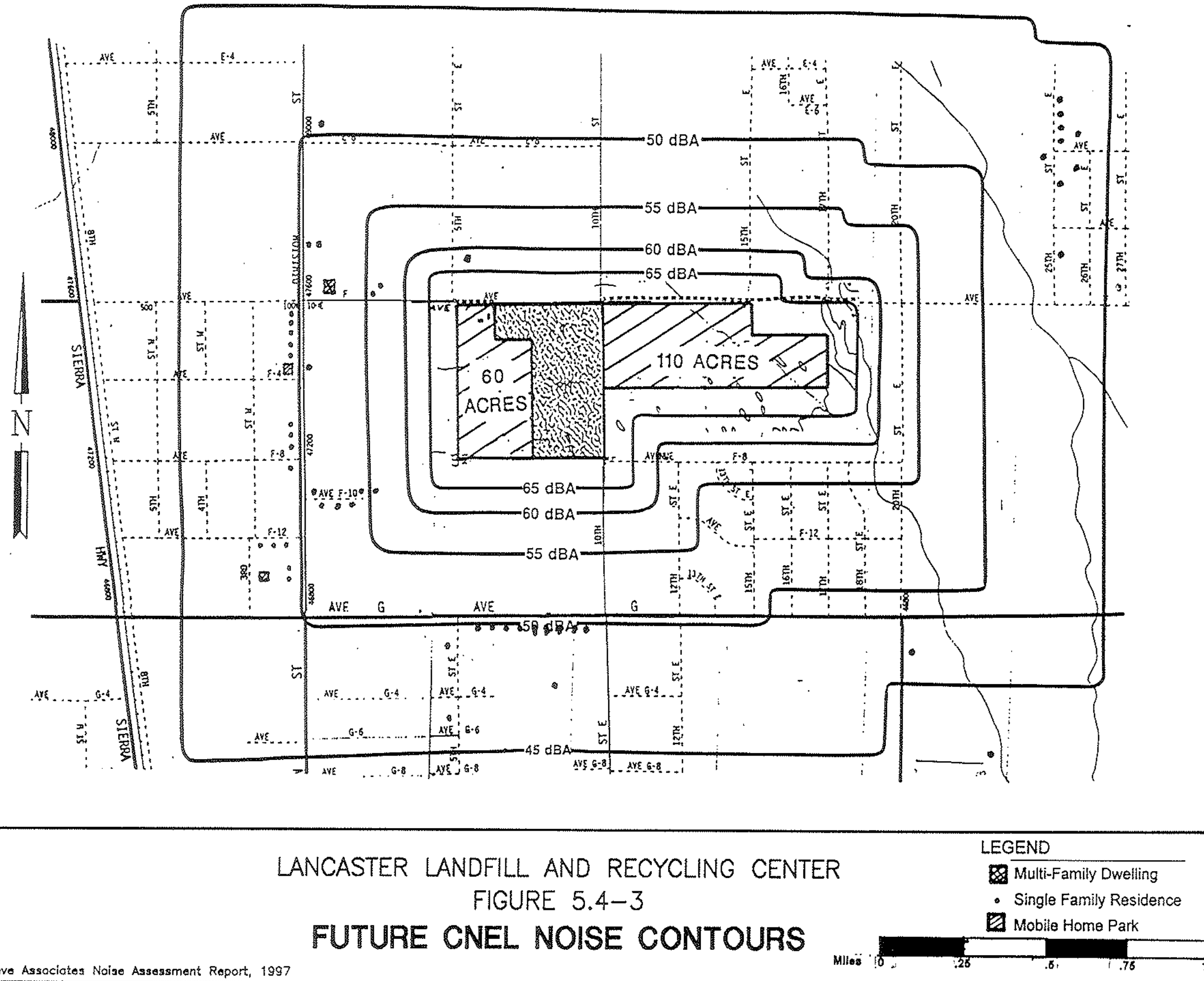
Landfill Operations

Using the noise measurement data due to the existing LLRC operations including haul truck single pass-by noise (Table 5.4-6), projections were made for the proposed landfill expansion. The existing landfill equipment currently maintained on-site includes a minimum of one trash compactor, one loader, two bulldozers, two scrapers, one motor grader and one water truck. It is anticipated that similar landfill equipment will be used for the landfill expansion.

Noise projections for the landfill operations, which are stationary noise sources, are based on the measurement data shown previously in Table 5.4-6. According to Table 5.4-6, base noise levels of 69.5 dBA (L50) and 77.6 dBA (Lmax) will be used to interpolate the worst case potential noise levels for the landfill expansion project due to operations. The noise sources typically have a decrease rate of 6 dB per doubling of distance. For example, a noise level of 69.5 dBA at a distance of 200 feet will be reduced to 63.5 dBA at 400 feet.

The existing residential areas surrounding the LLRC expansion project are: residential areas along Avenue F, east and west of Division; residential areas along Division south of Avenue F; residential areas along Avenue G between Division and East 10th Street, as well as between Division and Sierra Highway and residential areas along east 25th Street north of Avenue F. These existing residential areas will be located at distances ranging between approximately 1,500 and 6,600 feet from the proposed LLRC expansion. Based on these distances, the analysis indicates that the potential landfill noise levels may range between 43 and 55 dBA (L50) at these residential areas. Some of these areas may be exposed to future landfill noise levels above the daytime standard of 50 dBA and the nighttime L50 standard of 45 dBA (before 7:00 a.m.). Nevertheless, traffic will continue to be the predominant noise sources. Since the future L50 noise levels may potentially impact the nearest residential areas, mitigation measures are recommended in Section 5.4.4.

The L50 noise contour generated by landfill operations, including haul truck noise, is shown graphically in Figure 5.4-3. Please note that the location of the noise source was placed at the visible area boundary on all sides of the site. Since the landfill operation will be moved to different locations, the noise contour represents a worst case condition assuming simultaneous landfill operations at the boundary on all sides. The potential peak Lmax noise levels from the landfill expansion are estimated to range approximately between 47 and 60 dBA, and are projected to comply with the daytime Lmax noise ordinance standard of 70 dBA. The peak Lmax noise levels may



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.4–3

FUTURE CNEL NOISE CONTOURS

Source: Mestre Greve Associates Noise Assessment Report, 1997 occasionally be audible, however, they are not projected to be a source of annoyance at the nearest residential areas.

The proposed gas recovery facilities and recycling center were also evaluated for noise impacts. The proposed gas recovery facilities for the expansion areas will be a similar design as the existing facility. Therefore, no new noise sources are anticipated. It is anticipated that the new gas recovery/flare facilities will have similar noise levels as the existing facility. It is further anticipated that the gas recovery/flare facilities will be designed and constructed so that the County of Los Angeles Noise Ordinance will not be violated and acceptable noise levels will result.

In the future, sort line and balers may be added to the on-site recycling activities to increase efficiency and local control of recyclable tracking. In comparison with other landfill activities, the sorting operations will be relatively quiet. The landfill equipment such as dozers, graders, scrapers and compactors will be the dominant noise sources. It is projected that the noise generated from the recycling center will not be discernible at the nearest residential area. Therefore, no significant noise impacts from the recycling center are expected.

In summary, the traffic on the nearby roadways will be the predominant noise sources and the landfill expansion operations noise levels are considered to be a less than significant impact.

5.4.4 MITIGATION MEASURES

Construction Noise Impacts

Construction activities associated with development of new landfill cells which occurs adjacent to existing residential development should be limited to the hours of

Monday through Friday, 7:00 a.m. to 7:00 p.m. Construction should not be allowed on weekends or federal holidays.

Off-Site Traffic Noise Impacts

The proposed landfill traffic will contribute slightly, but insignificantly, to the ultimate future noise levels in the landfill vicinity. Noise increases due solely to the project are not considered to be substantial. Therefore, no off-site impacts are identified for the proposed landfill project.

Off-Site Noise Impacts Due to Landfill Operations

Development of new landfill cells will begin with construction of earthen berms between the landfill boundary and the new cell. Landfill operations will occur behind these berms, which will provide mitigation for potential off-site noise impacts to residential areas.

All operations equipment noise mufflers will be properly maintained and equipment tuned to minimize noise generation.

Implementation of these mitigation measures will reduce off-site noise impacts due to landfill operations to a less than significant level.

5.5 WATER QUALITY

5.5.1 EXISTING CHARACTERISTICS OF PROJECT SITE AND SURROUNDING AREA

5.5.1.1 GROUNDWATER

The site is located in the Antelope Valley. The Antelope Valley is underlain by the Antelope Valley groundwater basin, a name given to two large alluvial aquifers that are separated by thick Pleistocene lacustrine clays in the central part of the Lancaster sub-basin. Below these clays is the lower, confined "deep" aquifer, in which artesian wells were developed earlier in the century. Above the clay is the upper, unconfined "principal" aquifer, whose water table is at an average depth of 60 feet in the area of the landfill.

The main source of groundwater recharge to the Lancaster sub-basin is runoff from the San Gabriel Mountains. The two principal streams that drain this mountain area are Big Rock Creek and Little Rock Creek, which together have a mean annual runoff of 40,000 acre-feet. A secondary component of recharge is direct precipitation on the basin floor, where the average annual precipitation ranges from about ten inches along the toe of the San Gabriel Mountains to less than five inches at Rogers playa lake. Because of the meager precipitation, any recharge that may occur on the basin floor is confined to infrequent "wet" years when rainfall exceeds 15 inches throughout the valley.

Groundwater quality in both the "principal" and "deep" aquifers in the Lancaster area is generally suitable for domestic, irrigation, and most industrial purposes. However, water quality decreases toward the north, as the groundwater migrates through playa and lacustrine deposits, which contribute dissolved solids, hardness, and alkalinity. Groundwater throughout most of the area has total dissolved solids (TDS) concentrations of approximately 200 to 800 parts per million (ppm), though TDS concentrations can be as high as 28,000 ppm toward the northernmost portions of the sub-basin. In general, water with TDS contents higher than 450 ppm are undesirable for agricultural purposes, and water with TDS contents higher than 3,000 ppm are unsuitable for municipal and domestic consumption (State Water Board, 1988). We note that there is no California Drinking Quality Standard for TDS.

Prior to extensive agricultural development in the Lancaster sub-basin, groundwater movement in both the "principal" and "deep" aquifers was to the north, from the highlands toward Rosamond Lake, where it was discharged primarily through springs and surface evaporation. Heavy agricultural pumpage since the 1950s, however, has resulted in the artificial diversion of the groundwater movement. In the LLRC area, the water table of the "principal" aquifer presently slopes to the southeast, toward a cluster of irrigation wells developed on the alluvial fan of Little Rock Creek.

Based on aquifer pumping tests performed in the area of the project, the hydraulic conductivity of the aquifer has been estimated at 70 feet per day. Based on a hydraulic conductivity of 70 feet per day, a hydraulic gradient of 0.0008 feet per feet, and a porosity of 20 percent, groundwater flow velocity at the site has been estimated at 106 feet per year toward the southeast. Hydraulic conductivity is a measure of the rate at which groundwater moves within an aquifer in response to a gradient in hydraulic pressure, hydraulic gradient is a measure of the difference in hydraulic pressure between two points, porosity is the proportion of open voids in a unit volume of the aquifer, and groundwater flow velocity is the average velocity at which groundwater moves through the pores of an aquifer.

A Quarterly Groundwater Monitoring Program for the site is currently implemented to meet the general requirements of Title 23, Chapter 15, Section 2550.8. The initial groundwater monitoring program at the LLRC consisted of four monitoring wells, MW-1 through MW-4, that were installed in 1986. Three additional monitoring wells

(MW-5 through MW-7) were installed in 1988, and two more wells (MW-8 and MW-9) were installed in 1988.

The groundwater contour map of August 1992, Figure 5.5-1, shows that the elevation of the water table varies from 2,258 feet amsl on the northwest portion of the site, to 2,253 feet amsl on the southeast portion. Subtracting these end-member values from the average 2,317 feet amsl elevation of the ground surface yields a range of depths to groundwater of 59 to 64 feet beneath the site. Implementation of the project will involve excavation of the west and east expansion areas to a base grade of 2,273 feet amsl, at which point the depth from the bottom of the new refuse prisms to the water table would range from approximately 14 to 19 feet.

The 1992 groundwater levels are representative of a drought condition. A historical groundwater elevation of 2,260.69 feet amsl in well MW-1 was noted in 1988, whereas the MW-1 groundwater level recorded in 1992 was 2,258.16 feet. Projection of this trend ten years into the past, through drought conditions, suggests a pre-drought water level approximately seven feet higher than that depicted in the 1992 map (Figure 5.5-1). Therefore, a reasonable conservative design estimate of the maximum expected future water table rise in the vicinity of the landfill is ten feet. This would equate to a depth to groundwater from the surface of approximately 49 to 54 feet, and a depth from the bottom of the new liner systems to the water table of approximately four to nine feet.

Groundwater samples from monitoring wells MW-1 through MW-7 are currently collected on a quarterly basis by the landfill operator. Wells MW-8 and MW-9 were sampled only once in November, 1988. VOCs have not been detected in groundwater samples collected from MW-6 through MW-9, but have been detected in groundwater from wells MW-2 through MW-5. Prior to 1990, groundwater samples from MW-2, MW-4, and MW-5 contained perchloroethylene (PCE), whereas

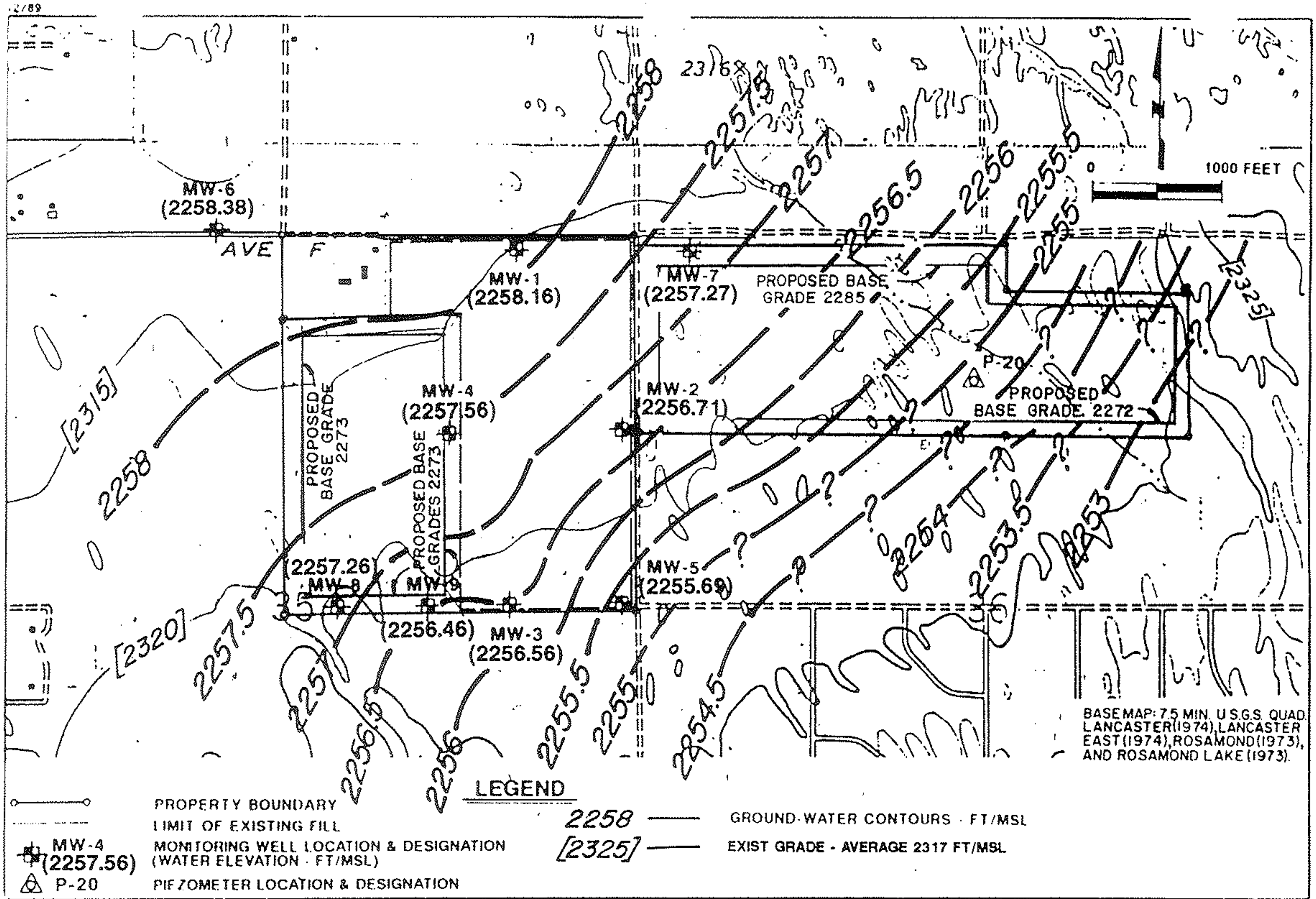


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FIGURE 5.5-1

GROUNDWATER CONTOUR MAP 1992

Source : Rust Design Report 1994

groundwater samples from MW-3 did not. PCE was detected in groundwater samples from MW-3, for the first time, in the second quarter of 1990 and again in the third quarter. Historically, toluene and vinyl chloride have been detected only in MW-3, which has also had higher concentrations of inorganic chemicals than the other wells.

In order to define the extent of identified VOC contamination, 25 temporary monitoring wells (TC-1 through TC-25) were installed in 1990 to the southeast of the landfill site. Based on a review of the data available, two primary plumes of impacted groundwater have been identified in the unconfined aquifer. According to the landfill operator, the source of the northerly plume may be the former truck washing area located south of the maintenance yard. The current truck washing area is underlain by a concrete pad, and washwater is collected in a sump to be recycled and reused. No used washwater drains off of the truck wash area, precluding any further potential groundwater impacts.

The source of the southerly plume appears to be located in the landfill, northwest of MW-3 and MW-5. The presence of detectable VOCs in the deeper groundwater samples from TC-10, TC-12, TC-14, TC-15, TC-16 and TC-21 indicates that the vertical extent of contamination may not be fully defined.

Existing degradation of groundwater is being remediated through a pump-and-treat system, in which contaminated water is pumped out of the ground, and treated for reuse in dust control and/or reinjected into the aquifer. Treatment is based on the activated carbon column technique: Contaminated groundwater is pumped from five extraction wells to the top of two columns, and allowed to flow downward through the granulated activated carbon that fills the columns. VOCs are absorbed into the carbon. As noted above, the treated groundwater is currently used for dust control at the landfill. Treated groundwater that is not used for dust control is reinjected into the underlying aquifer by means of five groundwater recharge wells located on the EEA.

The existing groundwater remediation program began in February 1994 and is expected to continue for the next three to ten years. The program will be terminated when the groundwater contamination has been cleaned-up to the satisfaction of the regulatory agencies.

5.5.1.2 SURFACE WATER

Surface water in the surrounding area is allowed to flow freely into Rosamond Lake. Within the landfill, however, run-on from the outside is diverted along a peripheral channel, and runoff from precipitation falling within the footprint is diverted into a detention basin, where it is allowed to infiltrate and evaporate.

The quality of surface water at the landfill is monitored in accordance with a SWPPP prepared in accordance with the requirements of the site's General Storm Water Permit. Surface water entering the footprint of the landfill is monitored after two major rainstorms each rainy season at one upgradient location, and that of the surface water leaving the footprint is monitored at two downgradient locations. Data collected over the last five years has not disclosed contamination of surface waters by landfill activities.

5.5.2 THRESHOLDS OF SIGNIFICANCE

Any of the following impacts related to water quality would be considered a potentially significant project impact:

- ❑ Substantially degrade water quality.
- ❑ Contaminate a public water supply.
- ❑ Substantially degrade or deplete groundwater resources.
- ❑ Interfere substantially with groundwater recharge.

- ☐ Discharge into surface waters, or result in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity.
- ☐ Alter the direction or rate of flow of groundwaters.
- ☐ Change in the quantity of groundwaters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations.
- ☐ Substantially reduce the amount of water otherwise available for public water supplies.

5.5.3 IMPACTS

Groundwater Quality

When the absorptive capacity of refuse is exceeded, the excess water containing soluble substances is known as leachate. Leachate is generated within landfills during operations and after closure.

The Hydraulic Evaluation of Landfill Performance (HELP) computer model was used to estimate the leachate production during various stages of operation and after closure. HELP is a water balance model developed for the EPA to provide site and design-specific estimates of leachate volumes.

The HELP model was used to analyze landfill conditions both during operations and after closure. The operational conditions assumed the higher infiltration parameters associated with interim cover. The model was used to simulate 20 years of weather for the site using climatological data which closely reflects the yearly rainfall of Lancaster. The site-specific geometry and design of the project site were also incorporated into the analysis.

The results of the model indicate that the leachate production maximum peak rate will be 80 gpd for the largest collection area of approximately 630,000 square feet (sf) before final cover is installed (5.5 gallons per day per acre). A maximum peak of six inches over the liner system was predicted using the program. After the final cover is in place, the leachate production rate will decrease to a very low rate (near zero gallons/day).

Based on the results of the HELP model, the estimated leachate rate was an average of 50 gpd.

The five groundwater recharge wells in the EEA will be abandoned prior to landfill development activities in that area. These abandoned wells could provide direct conduits to the underlying aquifers and could accelerate groundwater contamination if there were any leachate leakage through the landfill liner system. This is a potentially significant impact that will be mitigated by strict adherence to the protocols for well destruction mandated by the California Department of Water Resources.

<u>Groundwater Recharge</u>

Reduced infiltration over the footprint of the landfill would result in less than significant changes in the configuration of the water table. The main source of groundwater recharge to the Lancaster sub-basin is runoff from the San Gabriel Mountains, and not direct infiltration through the floor of the basin.

<u>Quality of Surface Water</u>

The project site is not located on a watershed tributary to a major river or body of standing water, and would thus not have a significant impact on any perennial sources of water.

5.5.4 MITIGATION MEASURES

The results of the HELP model were used to conservatively design an LCRS. An LCRS is proposed for all areas of the landfill expansion footprint (see Figure 5.5-2).

* The LCRS will consist of HDPE collection pipes embedded in a drainage layer gravel. The pipes will be placed in a trapezoidal ditch and enveloped in drain gravel. The LCRS pipes will slope approximately one percent toward a collection sump. The WEA will have four collection sumps, and the EEA will have five collection sumps. A collection riser will be connected to each pipe which will provide a pathway to the leachate lines for maintenance. A 12-ounce geotextile will be installed over the drain gravel to prevent plugging of the drain material. A one foot minimum drainage layer will be placed over the geotextile. The drainage layer will be covered by a one foot minimum protective soil layer. The one-foot of soil, often called the "working layer", protects the underlying LCRS and geotextile from damage during initial stages of refuse placement. A cross-section of the system and schematics of the leachate collection sump and side slope cleanout riser are shown on Figure 5.5-3, Leachate Collection System Details.

Quality of Surface Water

* The quality of surface water leaving the footprint of the landfill will be preserved by continuing the proactive monitoring system currently in place in accordance with the SWPPP prepared for the landfill in accordance with the requirements of their General Storm Water Permit. Specifically, water quality will be monitored after two major rainfalls per rainy season at one upgradient station, and at stations placed downgradient of the collection areas of the refuse prisms. Evidence of contamination will trigger improvement of the appropriate surface water collection systems.

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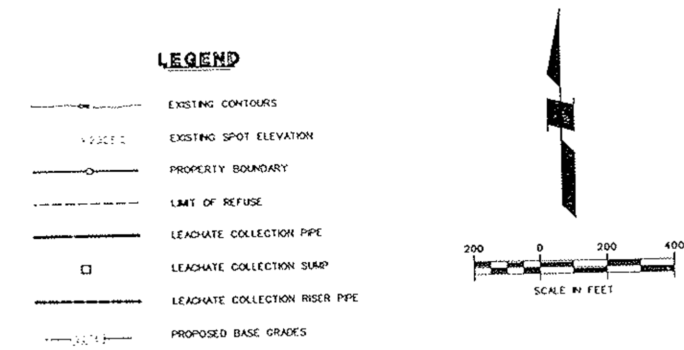
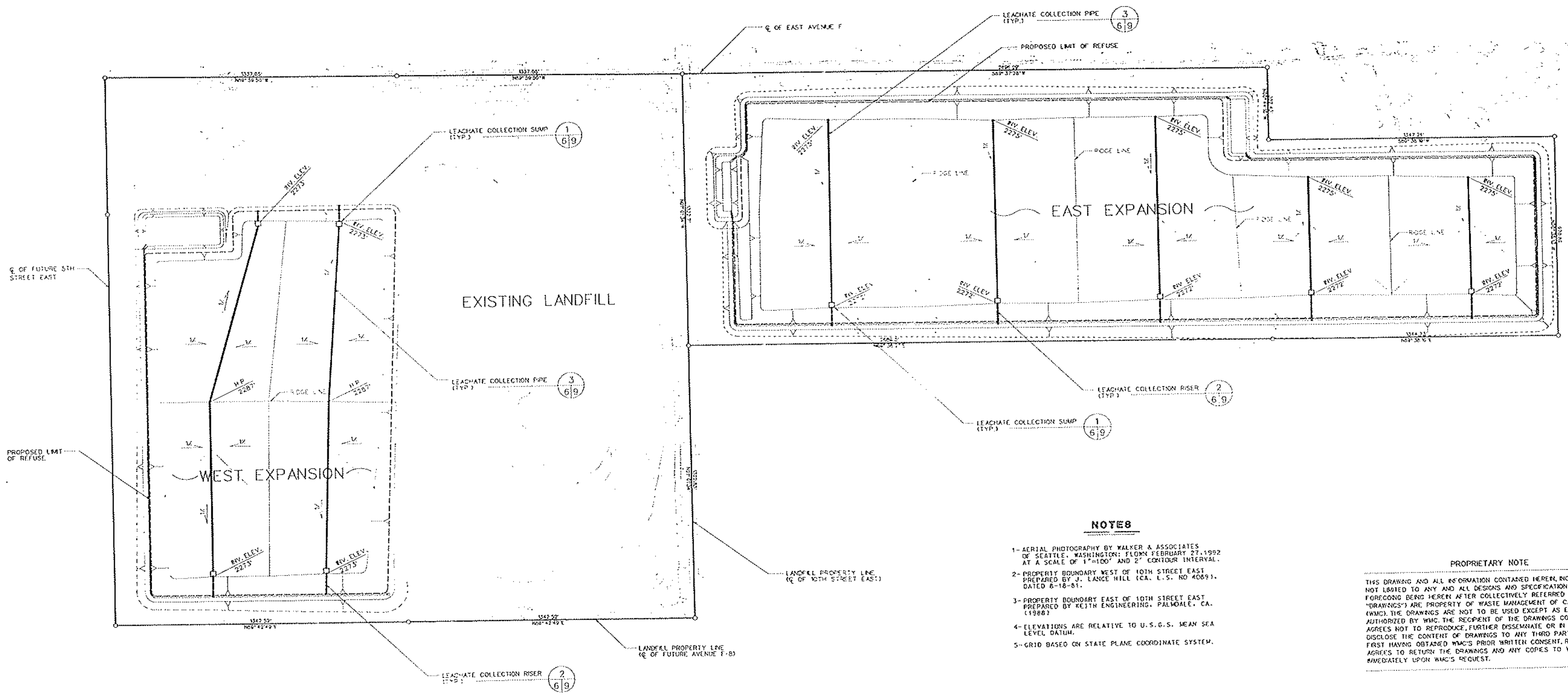
* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

Implementation of these mitigation measures (e.g., surface water collection improvements) will reduce potential water quality impacts to a less than significant level.





NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON: FLOWN FEBRUARY 27, 1992 AT A SCALE OF 1"=100' AND 2' CONTOUR INTERVAL.

2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4089), DATED 8-18-81.

3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1988)

4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.

5- GRID BASED ON STATE PLANE COORDINATE SYSTEM.

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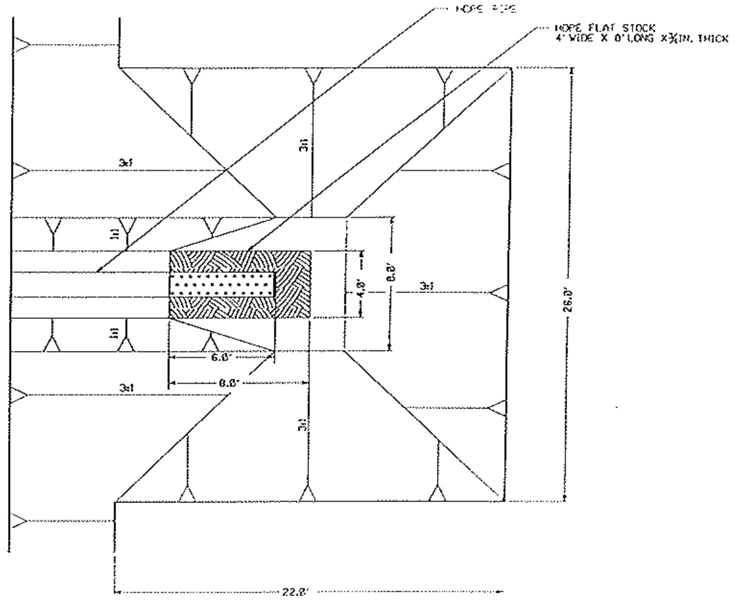
FIGURE 5.5-2

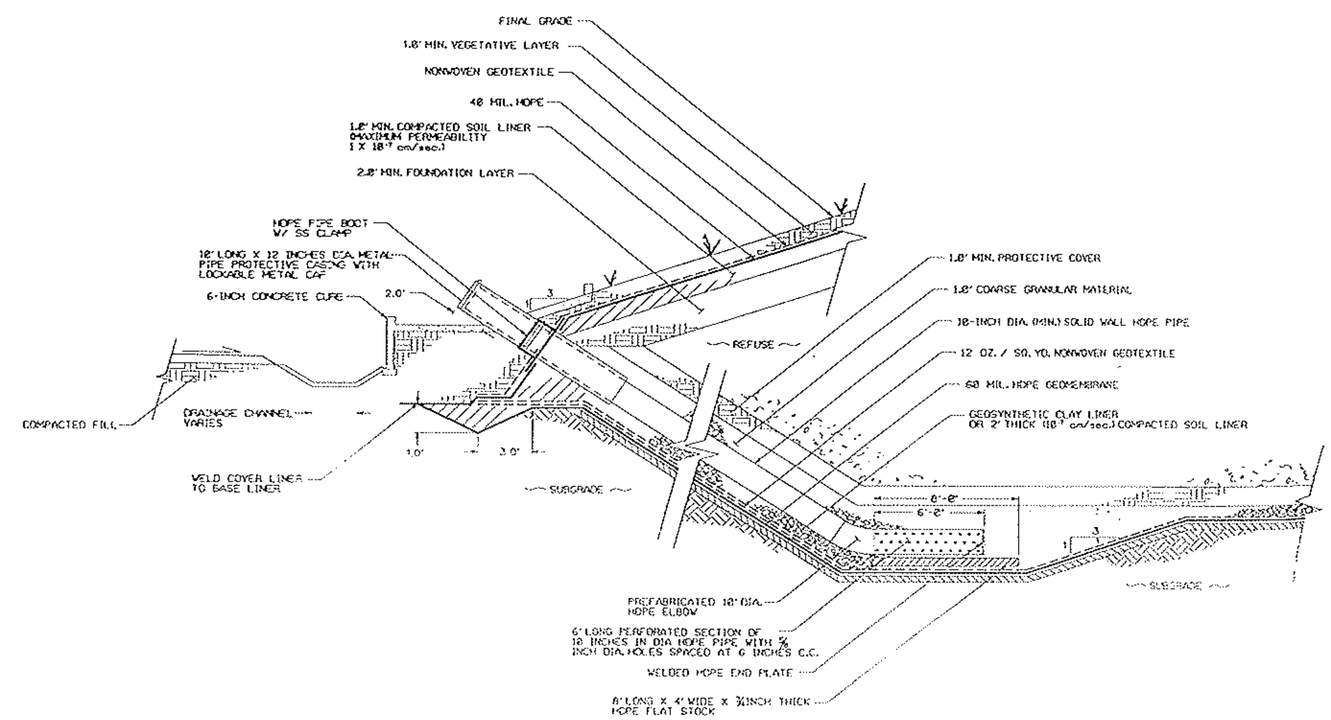
LEACHATE COLLECTION & REMOVAL SYSTEM

Source : Rust Design Report 1994



1 6|9 **LEACHATE COLLECTION SUMP**

N.T.S.



2 6|9 **LEACHATE COLLECTION RISER**

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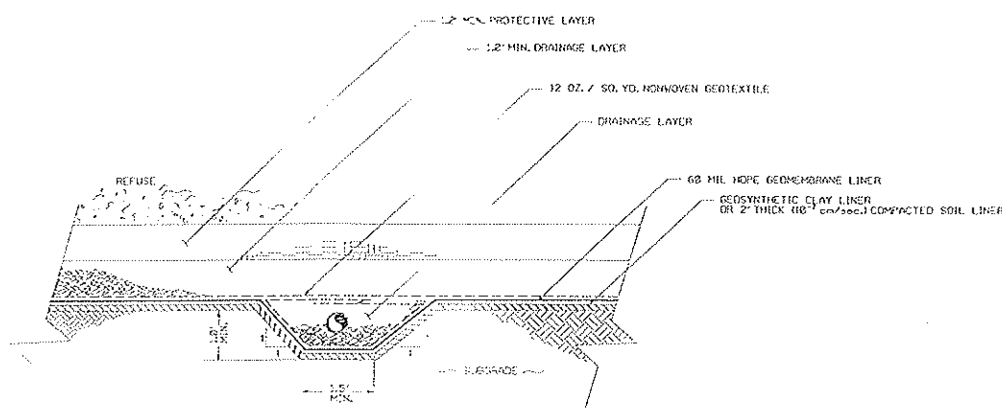

3 6|9 **LEACHATE COLLECTION PIPE TRENCH**

N.T.S.

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FIGURE 5.5-3

LEACHATE COLLECTION SYSTEM DETAILS

Source : Rust Design Report 1994

5.6 AIR QUALITY

This section describes the impacts to the ambient air quality due to emissions and odor in the vicinity of the LLRC as a result of the proposed LLRC expansion. After a description of climate and meteorology, a separate discussion of existing conditions, thresholds of significance, impacts and mitigation measures for air emissions and odors follows.

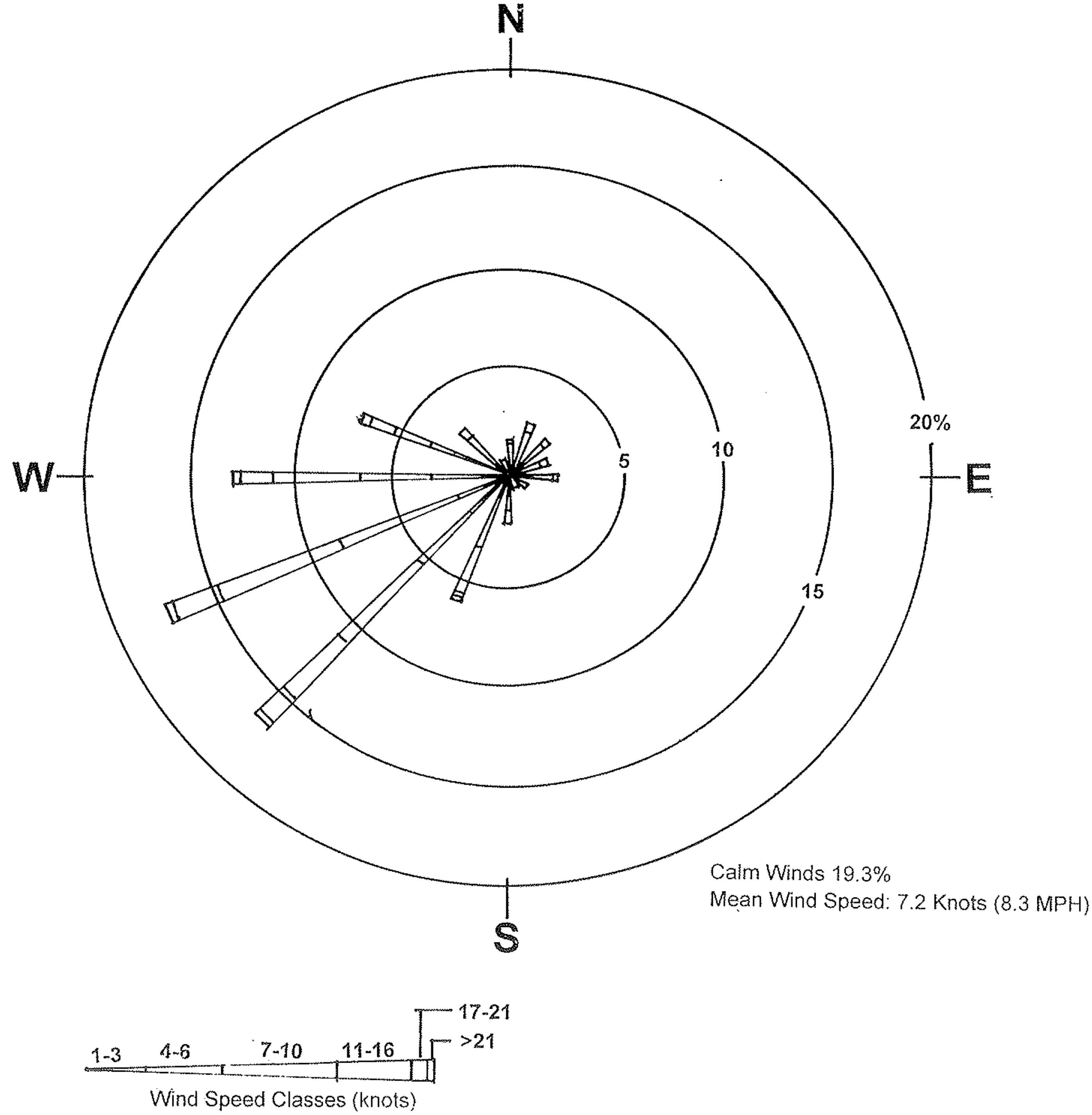
The mean daily summer and winter temperatures range from 63°F to 93°F and 34°F to 57°F, respectively. The mean annual precipitation in the region is approximately eight inches. The rainy season is from November to April. Air Weather Service Records from EAFB, located approximately four miles northwest of the landfill, indicate winds are predominantly from the southwest at an average annual velocity of 8.3 miles per hour. Figure 5.6-1 depicts an annual windrose for EAFB.

5.6.1 AIR EMISSIONS

5.6.1.1 EXISTING CONDITIONS FOR AIR EMISSIONS

5.6.1.1.1 Air Quality Standards

The LLRC is located within the Southeast Desert Air Basin (SEDAB), which is under the jurisdiction of the SCAQMD. Separate daily emissions thresholds and attainment designations have been established for the SEDAB and the South Coast Air Basin (SCAB), which is also under the jurisdiction of the SCAQMD, as shown on Table 5.6-1, SEDAB's Daily Criteria Pollutant Significance Thresholds. The SCAQMD sets and enforces regulations for stationary air emissions sources. The California Air Resources Board (ARB) is a statewide agency and monitors and/or records air pollution data at more than 200 locations throughout the state, publishing the data on a regular basis.



NOTE:

WINDROSE DEPICTS DIRECTION, SPEED, AND FREQUENCY OF WIND FROM A CERTAIN DIRECTION.

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6-1

ANNUAL WINDROSE FOR EDWARDS AIR-FORCE BASE

Source : NASA/JPL Field Sampling Plan

TABLE 5.6-1
SEDAB DAILY CRITERIA POLLUTANT SIGNIFICANCE THRESHOLDS (lbs)

Carbon Monoxide	550
Reactive Organic Gas	75
Nitrogen Oxides	100
Sulfur Oxides	150
Particulates	150

Source: South Coast Air Quality Management District "CEQA Air Quality Handbook", page 6-3, April, 1993.

Ambient Air Quality Standards (AAQS) are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those people most susceptible to further respiratory distress (i.e., the elderly, very young children, asthmatic, etc.). Healthy adults can tolerate occasional exposure levels before adverse health effects are observed.

National AAQS were established in 1971 for six pollution species, retaining the option to add other pollutants, require more stringent compliance, or include different exposure periods. Because California had established AAQS several years before Federal action was taken and because of unique air quality problems introduced by the restrictive dispersion meteorology, there is considerable difference between State and national clean air standards. The pollutants for which ambient air quality standards have been established are called "criteria" pollutants.

5.6.1.1.2 Local Air Quality

Federal and State standards for pollutants are presented in Table 5.6-2. There are more than 20 monitoring stations located in Los Angeles County with the closest monitoring station to the project being located in Lancaster. Because of the proximity to the project, this station collects the most representative data for the proposed project area.

TABLE 5.6-2
AIR QUALITY LEVELS MEASURED AT THE LANCASTER AIR MONITORING STATION

POLLUTANT	CALIFORNIA STANDARD	NATIONAL STANDARD	YEAR	MAXIMUM LEVEL	DAYS STATE STANDARD EXCEEDED
Carbon Monoxide (CO)	20 ppm for 1 hour	35 ppm for 1 hour	1986 1987 1988 1989	9.0 12.0 11.0 13.0	0 0 0 0
Ozone (O_3)	0.009 ppm for 1 hour	0.12 ppm for 1 hour	1986 1987 1988 1989	0.20 0.17 0.18 0.21	108 105 105 95
Nitrogen Dioxide (NO_2)	0.25 ppm for 1 hour	.053 ppm annual average	1986 1987 1988 1989	0.09 0.09 0.09 0.08	0 0 0 0
Sulfur Dioxide (SO_2)	0.05 ppm for 24 hours	0.14 ppm for 24 hours	1986 1987 1988 1989	NM NM NM NM	NM NM NM NM
Suspended Particulates (PM_{10})	50 ug/m3 for 24 hours	150 ug/m3 for 24 hours	1986 1987 1988 1989	NM NM NM 110	NM NM NM 25
Lead (Pb)	1.5 ug/m3 30-day average	1.5 ug/m3 30-day average	1986 1987 1988 1989	0.26 NM NM NM	0 NM NM NM
Sulfates	25 ug/m3 for 24 hours	none	1986 1987 1988 1989	8.9 7.3 5.7 17.0	0 0 0 0

Notes: Source - SCAQMD
NM - Not Monitored

As shown, State air quality standards for Ozone (O_3) and suspended particulates less than 10 microns in diameter (PM_{10}) were exceeded during the four-year period at the Lancaster Station.

State Standards for carbon monoxide, nitrogen dioxide, lead and sulfates were not violated at the station.

5.6.1.1.3 On-Site Source Emissions

Current operations at the landfill generate vehicle emissions, fugitive dust, and landfill gas emissions. In addition, vehicular emissions are generated by traffic traveling to and from the site.

On-Site Vehicle Emissions

Emissions are currently generated by on-site equipment that is used to transport, compact, and cover the refuse. The equipment used for existing and future operation of the LLRC is presented in Table 5.6-3. It is assumed that the same number of equipment pieces will be used for the future operation but for a longer period of time as further discussed in Section 5.6.1.3. The emission factors for the equipment used are presented in Table 5.6-4. The existing exhaust emissions from onsite operations equipment are presented in Table 5.6-5.

TABLE 5.6-3
EXISTING AND FUTURE EQUIPMENT UTILIZATION

TYPE OF EQUIPMENT	EXISTING EQUIPMENT UTILIZATION, HOURS/DAY	FUTURE EQUIPMENT UTILIZATION, HOURS/DAY (1,700 tpd)	HORSEPOWER RATING
Loader	1.7	3.4	155
Bulldozer	7.4	10.0	350
Backup Bulldozer	0.4	0.5	300
Scraper	2.1	4.0	330
Motorgrader	0.7	1.4	200
Water Truck	8.0	8.0	230
Compactor	4.2	8.4	330

Notes:

1. Existing equipment utilization figures from LLRC equipment maintenance logs, January-June 1995 for an average refuse inflow of 450 tpd.
2. Future equipment utilization figures are estimates provided by D. Corcoran, LLRC Landfill Manager, based on existing figures.

TABLE 5.6-4
EMISSIONS FACTORS FOR OPERATIONAL EQUIPMENT
(Pollutant Emissions in Pounds per Horsepower-Hour)

TYPE OF EQUIPMENT	CARBON MONOXIDE	REACTIVE ORGANIC GAS	NITROGEN OXIDES	SULFUR DIOXIDE	PARTICULATES
Bulldozer	0.01	0.002	0.021	0.002	0.0005
Scraper	0.011	0.001	0.019	0.002	0.0015
Motor Grader	0.008	0.003	0.021	0.002	0.001
Loader	0.015	0.003	0.022	0.002	0.001
Compactor	0.007	0.002	0.020	0.002	0.001
Water Truck *	1.80	0.19	4.17	0.45	0.26

Source: SCQAMD "CEQA Air Quality Handbook", Tables A9-8-A and A9-8-B, April, 1993.
* Emission factors for water truck are shown in pounds per hour.

TABLE 5.6-5
EXISTING EXHAUST EMISSIONS FROM LANDFILL OPERATIONS EQUIPMENT

EMISSIONS	ESTIMATED EXISTING DAILY EMISSIONS (LBS)	ESTIMATED ANNUAL EMISSIONS (TONS)
Carbon Monoxide	56	8.7
Reactive Organic Gas	13	2.0
Nitrogen Oxides	140	21.8
Sulfur Oxides	15	2.3
Particulates	7	1.1

Note: Annual emissions are based on a six-day work week.
Source: SCAQMD "CEQA Air Quality Handbook", Tables A9-8-A and A9-8-B, April, 1993.

Fugitive Dust Emissions

Fugitive dust emissions can occur from cut-and-fill operations, waste disposal, and from traffic over on-site internal haul roads which have not been paved. Currently, daily refuse is deposited at the working face of the landfill. Currently, the dimensions of the working face are approximately 70 by 110 feet, or approximately 7,700 square feet (0.176 acres). Landfill compaction equipment will make numerous passes over each layer of refuse to maximize refuse density and reduce the long-term settlement of the landfill. Throughout the working day, dust is controlled by the periodic light watering of the disposal area, excavation area and haul roads by the landfill water trucks. Using the emission factor of 26.4 pounds of PM_{10} per acre per day, grading activity at the landfill results in a fugitive dust emission rate of 4.6 pounds of PM_{10} per day. Assuming a conservative 40 percent reduction in emissions due to watering, the mitigated fugitive dust generation rate from grading activity is 2.8 pounds/day.

Travel on access roads on the landfill site by vehicles unloading refuse also generates fugitive dust emissions. Currently, approximately 131 heavy duty trucks access the landfill daily. This includes refuse trucks, commercial haulers, and private haulers. It is estimated that approximately 44 pounds per day of fugitive dust are currently generated by trucks entering and leaving the site. This emission rate does not take into account any reductions in dust generation due to watering of the unpaved roads. Approximately 50,000 - 60,000 gpd of water are used at the site to reduce dust generation. Assuming a conservative 40 percent reduction in emissions due to watering (from Table 11-4, page 11-14, SCAQMD CEQA Air Quality Handbook, April 1993), current fugitive dust emissions from refuse truck travel on unpaved roads at the landfill are approximately 26.4 pounds per day. Total fugitive dust emissions at the landfill are therefore 29.2 pounds/day.

Landfill Gas Emissions

Landfill gas is produced as the refuse decomposes anaerobically within the landfill. The landfill gas can migrate laterally through the landfill or surrounding native soils or can be emitted from the surface of the landfill. Currently, a gas extraction and treatment system consisting of 23 gas extraction wells and 12,000 feet of extraction piping (header), and a landfill gas flare station collects and disposes of landfill gas emissions.

Landfill Gas Extraction System

SCAQMD adopted Rule 1150.1 in April of 1985 to reduce gaseous emissions from active landfills to prevent public nuisance and possible detriment to public health caused by exposure to such emissions. The rule requires the installation of a landfill gas extraction system approved by the SCAQMD Executive Officer in order to prevent offsite migration of landfill gas. Sufficient landfill gas is to be collected to prevent the total concentration of organic compounds measured as methane from exceeding an average 50 ppm over a given area of the landfill (50,000 square feet unless otherwise approved) and the maximum concentration of organic compounds measured as methane taken at any point on the landfill surface from exceeding 500 ppm. In addition, methane gas concentrations measured at the site boundary must not exceed five percent by volume in air at the facility property boundary.

A monitoring program complying with SCAQMD Rule 1150.1 has been developed and approved by SCAQMD for the site. Currently monthly surface sweeps of the landfill surface are conducted. The current landfill gas extraction system consists of 23 gas extraction wells and 18 gas monitoring probes around the perimeter of the landfill to detect offsite subsurface migration. In addition, all landfill structures are equipped with continuous combustible gas detectors. The results of monthly surface sweeps and probe monitoring are submitted to the SCAQMD quarterly. The results of the monthly monitoring indicate that the landfill is operating within the landfill's Rule 1150.1 Compliance Plan.

Landfill Gas Flare Station

Generally speaking, landfill gas generation and decomposition of refuse occurs at higher levels in wetter climates. The low levels of gas generation at the LLRC are largely due to the very arid climate.

Currently, a landfill gas flare station consisting of a landfill gas flare, two blowers, a fuel gas filter/knockout drum and appurtenant equipment is installed to treat collected landfill gas. This system is non-operational for periods of time because of very low levels of landfill gas generation and poor gas quality (low methane concentration) in the collected gas. The flare station is permitted with SCAQMD to process 1388 standard cubic feet per minute (SCFM) of landfill gas. Current permitted emission rates are as follows:

NO_x as NO_2 - 2.7 lbs/hr, 65 lbs/day
SO_x as SO_2 - 0.2 lbs/hr, 4 lbs/day
CO - 12.9 lbs/hr, 311 lbs/day
PM - 1.3 lbs/hr, 30 lbs/day
Non-methane hydrocarbons - 0.2 lbs/hr, 5 lbs/day

The flare has an average operational on-line time of approximately 20 percent, or five hours per day. The flare is placed on-line and operates until it is automatically shut down when methane content drops below 20 percent. It generally takes two to three days to build up sufficient gas quantity and quality within the collection pipes to support flare operation after a shut down.

When the flare is shut down, small quantities of landfill gas are emitted from the landfill surface. These landfill emissions are monitored in accordance with SCAQMD Rule 1150.1. Monitoring occurs at all times regardless of whether the flare is operational. The only limits that exist for landfill emissions are the five percent methane concentration limit at the landfill boundary. The site has had only one occurrence of methane concentrations greater than five percent, which occurred during a period when the flare was off-line.

5.6.1.1.4 Off-Site Source Emissions

In addition to the emission sources within the landfill boundaries, landfill-related activity can also cause impacts to air quality in the surrounding area. Light and heavy-duty vehicles hauling waste to the landfill generate emissions on the access roadways. In addition, landfill employee vehicles add to the off-site air quality impacts.

Vehicular emissions currently generated by offsite traffic associated with the existing landfill are presented in Table 5.6-6.

TABLE 5.6-6
CURRENT DAILY EXHAUST EMISSIONS
FROM OFF-SITE VEHICLES (lbs/day)

EMISSIONS	WASTE HAULING TRUCKS	EMPLOYEE VEHICLES
Carbon Monoxide	455	7
Reactive Organic Gas	69	1
Nitrogen Oxides	349	1
Sulfur Oxides	17	1
Particulates	47	1

Notes: Assuming 131 truck trips per day averaging 48 miles per trip; 96 passenger vehicle trips averaging 10 miles per trip.

Source: CARB, BURDEN7F Model; SCAQMD "CEQA Air Quality Handbook", Table A9-5-D, April, 1993.

5.6.1.1.5 Total Current Emissions

The total current on-site and off-site estimated emissions from the landfill operation are presented in Table 5.6-7.

TABLE 5.6-7
TOTAL CURRENT LANDFILL EMISSIONS (lbs/day)

POLLUTANT	TOTAL ON-SITE AND OFF-SITE EMISSIONS
Carbon Monoxide	511
Reactive Organic Gas	82
Nitrogen Oxides	489
Sulfur Oxides	32
Particulates *	85.3

* Includes mitigated fugitive dust emissions.

5.6.1.2 THRESHOLDS OF SIGNIFICANCE

According to the CEQA Guidelines, any of the following impacts on air quality would be considered potentially significant impacts on the project:

- ❑ Violate an ambient air quality standard, contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations.
- ❑ Result in substantial air emissions or deterioration of ambient air quality.
- ❑ Create objectionable odors.
- ❑ Alter air movement, moisture, or temperature, or result in any change in climate, either locally or regionally.
- ❑ Produce toxic air contaminant (TAC) emissions that exceed the Air Pollution Control District's threshold level for health risk.

From an air quality perspective, the impact of a project is determined by examining the types and levels of emissions generated by the project and its impact on factors that affect air quality. As such, projects should be evaluated in terms of air pollution thresholds or standards established by the SCAQMD. The air emissions thresholds of significance established by the SCAQMD differ for the Coachella Valley and the Antelope Valley, which are in the SEDAB. The SEDAB has distinctly different air pollution problems than the SCAB. The SEDAB is not classified as an extreme non-attainment area for ozone. In determining whether or not a project exceeds these thresholds, the project emissions should be calculated in the same manner as that for the SCAB (e.g., utilizing the highest daily emissions). The thresholds of significance for the SEDAB, and therefore for this project, are as follows:

75 pounds per day of Reactive Organic Gas
100 pounds per day of Nitrogen Oxides
550 pounds per day of Carbon Monoxide
150 pounds per day of PM_{10}
150 pounds per day of Sulfur Oxides
California state one-hour and eight-hour Carbon Monoxide standard

Projects in the Coachella Valley and Antelope Valley portion of the SEDAB with peak operation-related emissions that exceed any of the above emission thresholds should be considered significant.

5.6.1.3 AIR EMISSIONS IMPACTS

Expansion of the landfill is expected to increase the amount of emissions over those currently experienced at the site. An increase in the amount of refuse material delivered to the site from the current refuse inflow to a maximum of 1,700 tpd will increase emissions from heavy-duty vehicles, fugitive dust, landfill gas, onsite and landfill related traffic.

On-Site Vehicle Emissions

Future operations at the landfill will utilize the same types and quantities of equipment that are currently in use at the landfill. Future emissions of on-site vehicles are shown in Table 5.6-8. It is not anticipated that any additional landfill equipment will be needed for future operations. The existing equipment will be utilized for a greater percentage of the day (see Table 5.6-3).

TABLE 5.6-8
FUTURE EXHAUST EMISSIONS FROM LANDFILL OPERATIONS EQUIPMENT

EMISSIONS	ESTIMATED FUTURE DAILY EMISSIONS (LBS)	ESTIMATED EXISTING DAILY EMISSIONS (LBS)	EMISSIONS INCREASE DUE TO PROJECT (LBS)
Carbon Monoxide	95	56	39
Reactive Organic Gas	18	13	5
Nitrogen Oxides	208	140	68
Sulfur Oxides	21	15	6
Particulates	9	7	2

Fugitive Dust Emissions

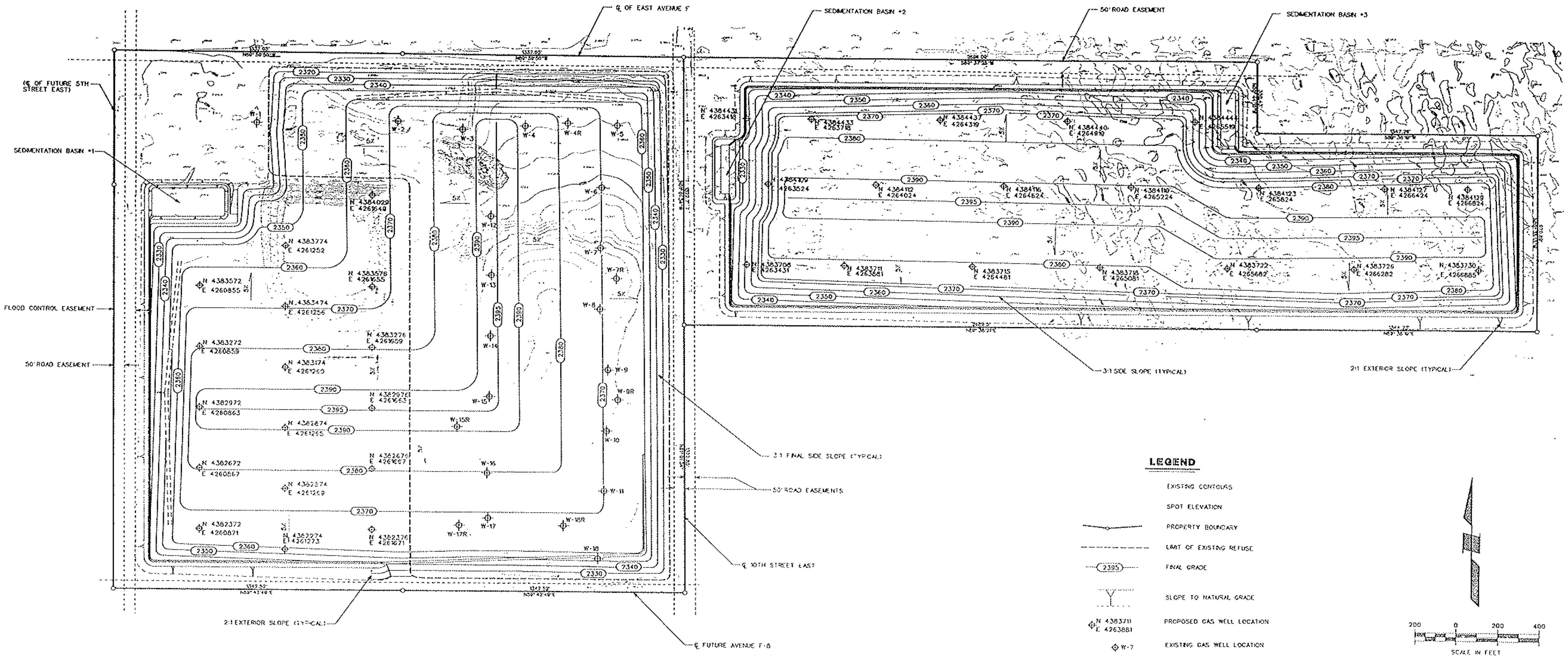
The proposed landfill expansion will increase fugitive dust emissions from earth moving equipment and from travel on unpaved roads. The proposed expansion will reach an operational level of 1,700 tons of refuse per day. Throughout the working day, dust is controlled by the periodic light watering of the disposal area, excavation area and haul roads by the landfill water truck. The estimated current water use for dust control on the site is 50,000 - 60,000 gpd. The average demand for the proposed project is expected to be about 55,750 gpd over the life of the project and will be met by utilizing treated groundwater from the groundwater remediation program or the existing on-site deep wells which are also currently used for site operations.

The number of trucks on the roads on the site from the entrance to the landfill working face is expected to increase from 131 trucks to 222 trucks per day to accommodate 1,700 tpd. An increase to 222 trucks per day would increase fugitive dust emissions from this source to 74.6 lbs/day from the current estimated level of 44 lbs/day. This represents an increase in fugitive dust generation from this source of 30.6 lbs/day. However, these emissions estimates do not take into account the reductions in emissions due to watering the access roads on-site to reduce dust generation. Assuming a 40 percent reduction in emissions due to watering (from Table 11-4, page 11-16, SCAQMD CEQA Air Quality Handbook, April 1993), the increase in fugitive dust emissions from refuse truck travel on unpaved roads at the landfill is estimated to be approximately 18.4 pounds per day.

When the landfill reaches a refuse acceptance rate of 1,700 tpd, the working face will expand to approximately 100 x 200, or 20,000 square feet (0.458 acre). Using the emission factor of 26.4 pounds of PM_{10} per acre per day, grading activity at the landfill will result in a PM_{10} emission rate of 12.1 pounds of PM_{10} per acre per day without mitigation. Assuming a conservative 40 percent reduction in emissions due to watering (SCAQMD reduction estimates are 45-85 percent), the mitigated PM_{10} emission rate from future grading activity will be 7.3 pounds of PM_{10} per day. The mitigated fugitive dust generation rate from existing grading activities is 2.8 pounds per day. The increase in PM_{10} emissions due to grading is 4.5 pounds per day. The total increase in PM_{10} emissions due to grading activities and truck travel on unpaved roads will be 22.9 pounds per day.

Landfill Gas Emissions

Landfill gas generation studies conducted by RUST Environmental and Infrastructure for Waste Management, Inc. in March of 1994, predicted a maximum generation of 1.9 million cubic feet per day of landfill gas at 52 percent methane would be recoverable (based on collecting 75 percent of the gas generated) by the year 2015. This estimate includes gas predicted to be generated by the proposed expansion and is less than the permitted flow rate of 2.0 million cubic feet per day. The proposed expansion is not expected to significantly increase landfill gas emissions. Seventeen additional gas extraction wells are planned to be installed in the proposed expansion area to control landfill gas emissions and migration (see Figure 5.6-2). It is expected that the additional landfill gas generated by the expansion area will generate sufficient



EXISTING GAS EXTRACTION WELL

WELL DESIGNATION	COORDINATES (NORTHING	:	EASTING)
W-1	4,384,361	:	4,251,109
W-2	4,384,355	:	4,251,761
W-3	4,384,358	:	4,252,060
W-4	4,384,379	:	4,252,359
W-4R	4,384,394	:	4,252,563
W-5	4,384,367	:	4,252,801
W-6	4,384,079	:	4,252,730
W-7	4,383,760	:	4,252,730
W-7R	4,383,630	:	4,252,809
W-8	4,383,476	:	4,252,731
W-9	4,383,179	:	4,252,774
W-9R	4,383,032	:	4,252,824
W-10	4,382,877	:	4,252,772
W-11	4,382,581	:	4,252,764
W-12	4,383,930	:	4,252,202
W-13	4,383,635	:	4,252,209
W-14	4,383,339	:	4,252,210
W-15	4,383,040	:	4,252,209
W-15R	4,382,890	:	4,252,057
W-16	4,382,982	:	4,252,203
W-17	4,382,439	:	4,252,210
W-17R	4,382,402	:	4,252,073
W-18	4,382,249	:	4,252,739
W-18R	4,382,429	:	4,252,572

NOTES

1- AERIAL PHOTOGRAPHY BY WALKER & ASSOCIATES OF SEATTLE, WASHINGTON; FLOWN FEBRUARY 27,1992 AT A SCALE OF 1"=100' AND 2' INTERVAL CONTOUR.

2- PROPERTY BOUNDARY WEST OF 10TH STREET EAST PREPARED BY J. LANCE HILL (CA. L.S. NO 4089), DATED 8-18-81.

3- PROPERTY BOUNDARY EAST OF 10TH STREET EAST PREPARED BY KEITH ENGINEERING, PALMDALE, CA. (1988)

4- ELEVATIONS ARE RELATIVE TO U.S.G.S. MEAN SEA LEVEL DATUM.

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FIGURE 5.6-2

EXISTING and PROPOSED LANDFILL GAS WELL LOCATIONS

Source : Rust Design Report 1994

landfill gas to enable the existing flare station to run continuously. The flare station is designed and permitted by SCAQMD to process a maximum of 1,388 SCFM, or 2.0 million cubic feet per day (MCFD) of landfill gas.

Monitoring of the expansion area will occur along with the current operations consistent with the site's current SCAQMD Rule 1150.1 implementation plan.

Landfill Gas Migration

The proposed expansion is not expected to increase landfill gas migration. As is noted in Section 5.6.1.1.3, there is often insufficient landfill gas generation to even operate the flare system. Regular monitoring of the existing sampling probes at the perimeter of the site have not detected any migration of landfill gas emissions offsite. Probes will be installed in areas around the perimeter of the expansion area as approved by the SCAQMD. These probes will be monitored under the site's SCAQMD Rule 1150.1 implementation plan and results will be presented in the quarterly reports.

Health Risk

A health risk analysis associated with landfill gas generation was conducted by Dennison and Associates for Waste Management, Inc. in January of 1993, which indicated a maximum expected individual cancer risk of 4.87×10^{-8}. The health risk was performed according to SCAQMD Rule 1401 at the maximum permitted flow rate of 1,388 SCFM for the flare station. A flare destruction efficiency of 99 percent was assumed, with toxic compound concentrations derived from SWAT testing at the landfill. SCAQMD Rule 1401 permits a maximum individual cancer risk of 1×10^{-6}. The maximum expected individual cancer risk of 4.78×10^{-8} is significantly less than the 1×10^{-6} significance threshold as defined by SCAQMD Rule 1401. The maximum amount of landfill gas generated at the landfill (including the expansion) is predicted to be 1.9 MCFD (75 percent recoverability at 52 percent methane); therefore, health risks associated with landfill gas emissions from the landfill, including the expansion areas, are less than significant.

Off-Site Vehicle Emissions

The proposed expansion will increase the number of waste hauling vehicles to 222 trucks per day from the current level of 131 trucks per day. In addition, employee vehicles will increase from 48 per day currently to 59 per day. The increase in emissions from future offsite landfill traffic is presented in Table 5.6-9.

TABLE 5.6-9
FUTURE EMISSIONS INCREASE FROM OFF-SITE VEHICLES

EMISSIONS	FUTURE EMISSIONS WASTE HAULING TRUCKS (LBS/DAY)[1]	EXISTING EMISSIONS WASTE HAULING TRUCKS (LBS/DAY)	EMISSIONS INCREASE DUE TO PROJECT (LBS/DAY)
Carbon Monoxide	772	455	317
Reactive Organic Gas	117	69	48
Nitrogen Oxides	591	349	242
Sulfur Oxides	29	17	12
Particulates	80	47	33
Carbon Monoxide	8	7	1
Reactive Organic Gas	1	1	0
Nitrogen Oxides	1	1	0
Sulfur Oxides	1	1	0
Particulates	1	1	0

1 Assumes 222 trucks at 85 miles per trip; 59 passenger vehicles averaging 10.8 miles per trip.

Note: Employee vehicle emissions are projected to decrease due to anticipated decreases in vehicle efficiency and use of cleaner burning reformulated gasolines.

Source: CARB, BURDEN7F Model; SCAQMD CEQA Air Quality Handbook, Table A9-5-D, April 1993.

Table 5.6-10 summarizes the total emissions estimated to be generated by the project at 1,700 tpd, existing estimated emissions at the landfill, and the emissions increase due to the proposed project.

TABLE 5.6-10
ESTIMATED TOTAL FUTURE LANDFILL EMISSIONS
YEAR 2010 (LBS/DAY)

POLLUTANT	SCAQMD THRESHOLD FOR SEDAB	YEAR 2010 TOTAL ON-SITE AND OFF-SITE EMISSIONS	EXISTING TOTAL ON-SITE AND OFF-SITE EMISSIONS	TOTAL ON-SITE AND OFF-SITE EMISSIONS INCREASE DUE TO PROJECT
Carbon Monoxide	550	868	511	357
Reactive Organic Gas	75	135	82	53
Nitrogen Oxides	100	799	489	310
Sulfur Oxides	150	50	32	18
Particulates	150	106.6	85.3	21.3

Note: Includes mitigated fugitive dust emissions.

The proposed project will not result in significant increases from the existing emissions due to carbon monoxide (CO), reactive organic gas, sulfur oxides, or particulates. Total emissions increases of NO_x due to the project will be 310 lbs/day. This is an unavoidable adverse impact of the project. There are no mitigation measures available that would reduce the NO_x emissions to below the significance threshold of 100 lbs/day.

5.6.1.4 AIR EMISSIONS MITIGATION MEASURES

Since the air emissions from the proposed project are projected to cause significant adverse impacts on air quality, related to NO_x, CEQA requires that all feasible mitigation measures be employed to reduce impacts. The following mitigation measures could reduce potential impacts. However, air quality impacts related to NO_x would remain significant after mitigation.

5.6.1.4.1 On-Site Vehicle Emissions

The state emission standards for off-road vehicles will become more stringent for all vehicles manufactured after 1996. However, CARB emission standards require even lower emissions for on-highway vehicles. This mitigation measure would require that all vehicles and equipment for the proposed project be evaluated to determine if the equipment for the proposed project be evaluated to determine if the equipment may be powered with engines meeting the on-highway standards. Due to the engine mounting, power, torque, and load cycle requirements, the proposed alternative engines may not be feasible for all of the heavy-duty construction equipment used in landfill operations. The project applicant shall be required to submit a report to the SCAQMD substantiating the alternative engine feasibility investigation before commencing operations. If any additional vehicles becomes necessary during the life of the project, a similar investigation and report shall be required.

Utilization of landfill equipment with turbocharged and intercooled diesel engines would reduce the typical NO_x and particulate emissions from these vehicular sources. These engine modifications tend to lower exhaust temperature and the formation of NO_x. Availability of turbocharged and intercooled landfill equipment shall be determined during the alternative engine evaluation proposed above. If suitable landfill equipment is available with these type of engines as standard equipment, or an available option, they shall be required as the second best alternative unless the manufacturer can demonstrate that other available engines would achieve the same lowered emissions.

Retardation of fuel injection timing would also reduce NO_x emissions from diesel equipment, as long as the strategy has not already been incorporated to meet emission standards. When combined with turbocharging and intercooling, this engine adjustment has been shown to reduce NO_x emissions by more than 40 percent for stationary IC engines. This adjustment shall be required for any diesel equipment for which this technique would be applicable and effective. The optimal degree of timing retardation that minimizes NO_x without increasing PM_{10} or reactive organic gas (ROG) emissions must be established for each engine model. The feasibility of this technique to apply to specific equipment models shall be determined during the alternative engine evaluation study recommended above.

Low-NO_x diesel vehicles and other IC engine-powered equipment require strict adherence to a maintenance schedule and tune up procedure to ensure proper low emission operations. All landfill equipment shall be maintained according to manufactures specifications and schedules. Maintenance records shall be kept for each vehicle or landfill equipment and made available for inspection. The mandatory schedule shall be adjusted to maintain engine components critical to low emission operation, if the operating conditions warrant or require shorter intervals than recommended by the manufacturer. Equipment operators and supervisors shall be instructed to report any symptoms of poor performance that may indicate maintenance is required. Any excessively smoking vehicles shall be inspected and repaired within 24 hours. If the repairs cannot be made within 24 hours due to unavailability of replacement parts, the equipment shall be removed from service if the repairs are not made within three days after the problem was first noticed.

To reduce unnecessary idling emissions, all landfill equipment operators shall be instructed to shut down any diesel equipment if it is expected to be idle for longer than ten minutes. This shall be instituted as a standard operating procedure with signs posted prominently in the active areas of the proposed landfill. The signs shall indicate the requirements and the potential disciplinary actions, and records of such disciplinary actions shall be kept and made available for inspection.

To reduce the potential emissions from commuting employees, the applicant shall investigate the feasibility of developing and implementing an employee rideshare program at the landfill.

As noted above, air quality impacts related to NO_x will remain significant after implementation of all feasible mitigation measures.

5.6.1.4.2 Fugitive Dust Emissions

No significant increases in fugitive dust emissions will occur as a result of the expansion project. Various dust suppression systems are currently used for controlling dust at the landfill. The most important dust suppression method currently used at the landfill is the application of water to the unpaved roads which access the working face, borrow areas, and the working face itself. Continued watering for dust control will continue to reduce generation of PM_{10} on the site.

5.6.1.4.3 Landfill Gas Emissions

* In order to collect and control the migration of landfill gases (comprised of methane and carbon dioxide, with trace volatile organic constituents), the expansion areas will be equipped with a comprehensive collection and combustion system, consistent with the SCAQMD Rule 1150.1. This system will collect the landfill gas and carry it to the existing combustion facility, where the trace volatile organic contaminants will be destroyed at high temperatures. Construction and operation of a landfill gas collection and combustion system will reduce landfill gas impacts to a less than significant level.

5.6.1.4.4 Landfill Gas Migration

* Landfill gas migration monitoring probes will be installed around the perimeter of the expansion area as approved by SCAQMD. These probes will be monitored as required by the SCAQMD implementation plan for the site and the results will be presented in the quarterly reports to SCAQMD.

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* Measures required pursuant to current Federal, State and Local landfill regulations pertaining to operations.

5.6.2 ODORS

5.6.2.1 EXISTING CONDITIONS FOR ODOR

Odors from landfills can be a problem when there are receptors (e.g., residences, public facilities) located close enough to the landfill for the odors to be detected. Current land uses in the vicinity of the LLRC are predominantly open space, although, there are scattered single residences (approximately 20) along Division Street approximately 4,000 feet west of the landfill and along Avenue G Street (approximately 15) 3,500 feet south of the landfill (see locations on Figure 5.6-3). There is a single residence approximately 2,500 feet east of the landfill, and a few trailers approximately 1/2 mile to the north of the landfill. The LLRC operator has not received any complaints on odor due to the existing operations.

The control and mitigation of landfill odors is currently accomplished by the intermittent operation of the flare station and gas extraction system when enough gas of sufficiently high methane concentration is generated. In addition, the working face of the landfill is covered daily with a fabric tarp to control odors from the fresh refuse at the working face.

Odor Monitoring

In order to quantitatively assess the presence of odors due to the existing operations, three monitoring events were conducted on July 8, 1996 by Parsons Engineering Science (ES), Inc. and January 30 and February 6, 1997 by Pacific Environmental Services (PES). Samples collected on July 8, 1996 were taken on a Monday morning during normal refuse operations. Since the landfill is typically left undisturbed over the weekend it was assumed that a more conservative scenario would be observed early on a Monday morning. Samples collected on January 30 and February 6, 1997 were collected while a load of sludge was being processed with the solid waste to better simulate a worst case scenario. The landfill currently accepts about one load of dewatered sludge each week.

The odor monitoring program consisted of collecting samples of ambient air at various locations in and around the site during normal landfill operations and subsequently evaluating samples for odor using an odor panel evaluation conducted at the Parsons ES facility. Results of the odor panel evaluation were then modeled to simulate odor dispersion. Samples of ambient air were collected at the working face (area where refuse was being received on the day of sampling), at various locations upwind and downwind of the landfill. The various locations of the sample sites for each sampling event are shown on Figures 5.6-3 to 5.6-5.

The samples were evaluated 24 hours after sample collection. A detailed description of the methodology used is presented in a report by PES dated March 25, 1997 which is included in Appendix I.

The odor levels recorded by each panelist were calculated following a statistical procedure which results in a averaged panel value termed the "ED_{50}". This term denotes the Effective Dosage at the 50 percent level, i.e., the dilution at which 50 percent of the panel would, and 50 percent of the panel would not detect odor of the diluted sample. The dilution is denoted by the dilution factor. For instance, ED_{50} = 100 means that one volume unit of the odorous gas must be diluted with 100 volume units of non-odorous air to reach the panel threshold termed ED_{50}. A sample with an ED_{50} = 2 would be diluted with only two volumes of non-odorous air to achieve a concentration where half the panel will not detect any odor, i.e., the sample is almost similar in odor to that of zero air (odor free air). The ED is also referred to as the Dilution to Threshold (D/T). As shown on Table 5.6-11, results of the odor panel ranged from an ED_{50} or D/T of 1.0 to 4.9.

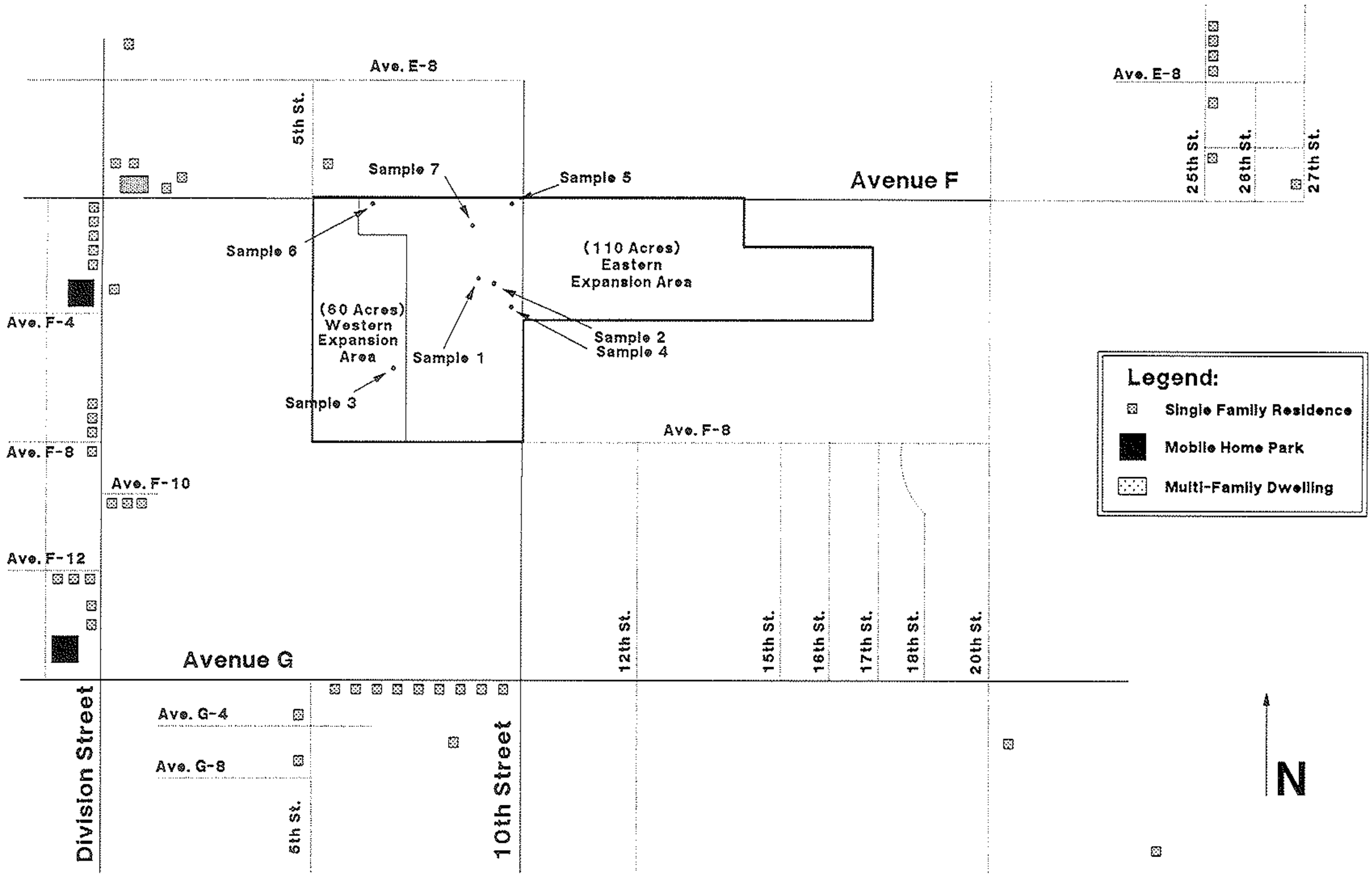

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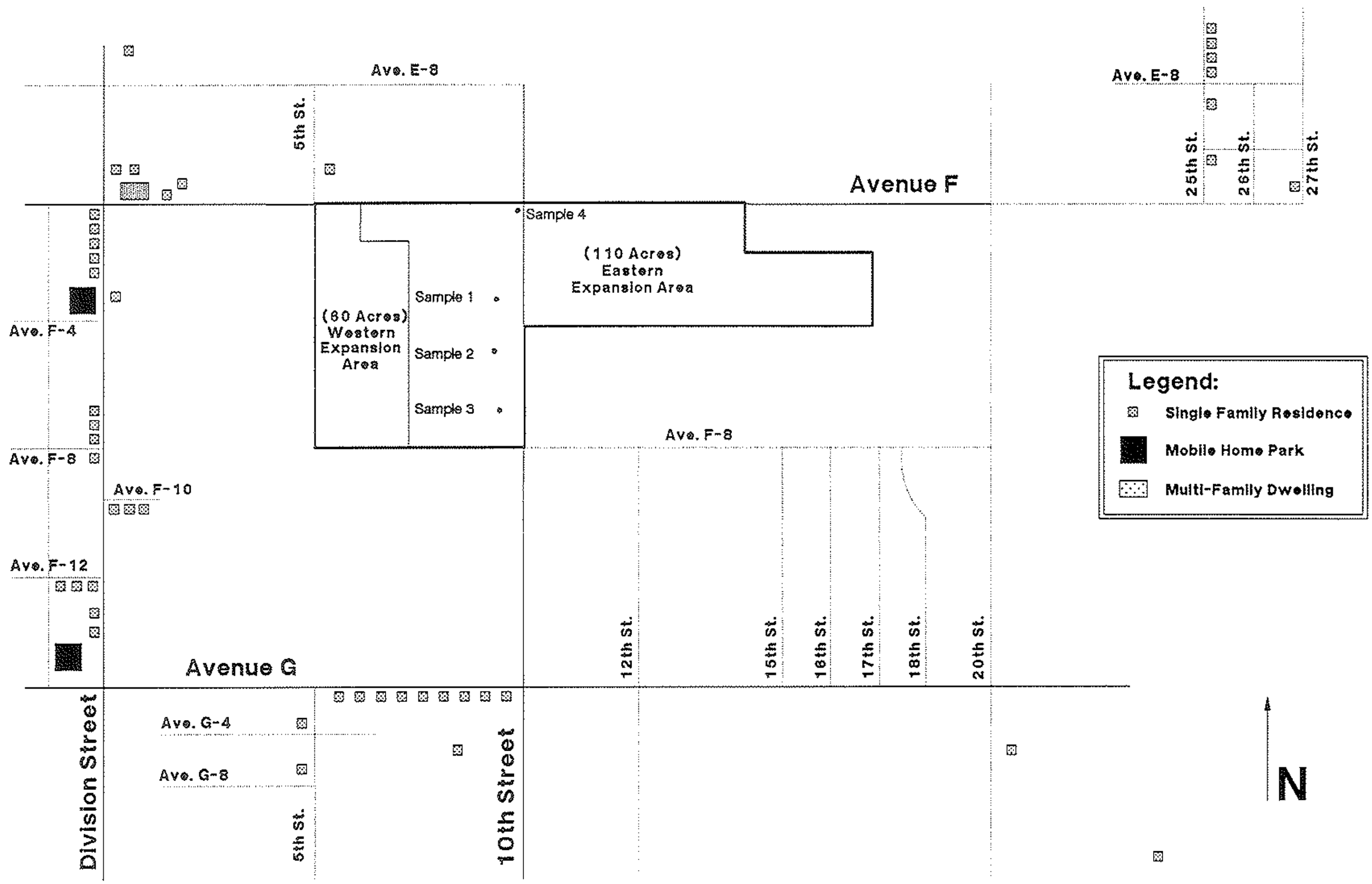
FIGURE 5.6-3

LOCATION OF SAMPLING SITES FOR ODOR MONITORING STUDIES (JULY 8, 1996)

Source: Pacific Environmental Services, Inc., 1997



Source: Pacific Environmental Services, Inc., 1997

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FIGURE 5.6–4

LOCATION OF SAMPLING SITES FOR ODOR MONITORING STUDIES (JAN 30, 1997)

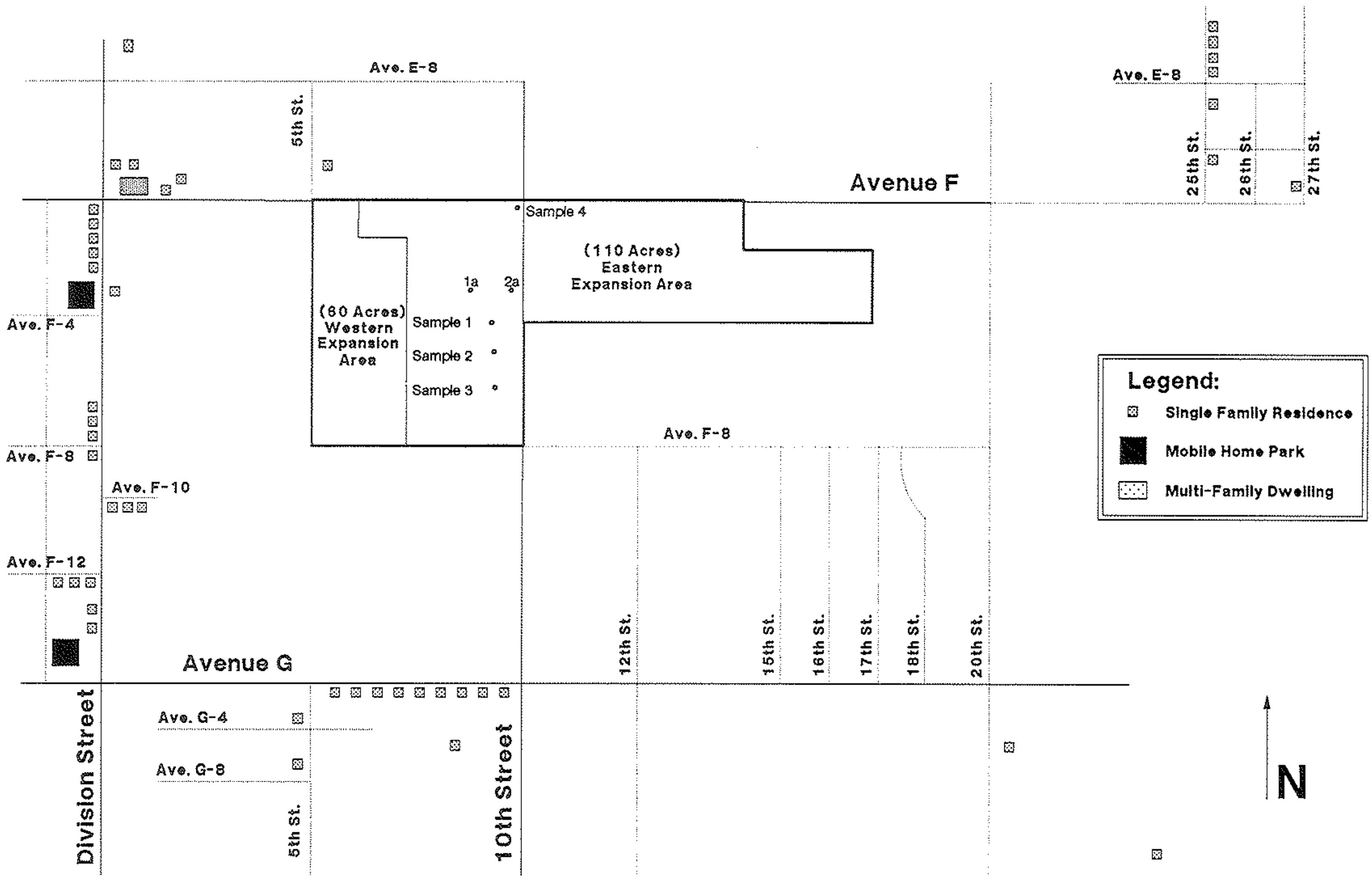

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FIGURE 5.6–5

LOCATION OF SAMPLING SITES FOR ODOR MONITORING STUDIES (FEB 6, 1997)

Source: Pacific Environmental Services, Inc., 1997

TABLE 5.6-11
SUMMARY OF ODOR RESULTS

Location No.	Description	Time	ED_{50}[1]	WS[2]	WD[2]
July 8, 1996					
1	At the working face	0702-0740	2.0	1.8	V[3]
2	Downwind of working face	0735-0745	2.3	8.0	WSW
3	Upwind of the landfill	0745-0815	1.0	8.9	WSW
4	East of Landfill at 10th Street	0820-0836	2.0	3.0	WSW
5	Northeast of landfill	0843-0855	2.7	7.6	WSW
6	Entrance to landfill	0901-0914	1.0	5.6	WSW
7	Biomass area	0907-0919	2.0	5.6	WSW
January 30, 1997					
1	At the working face	1012-1040	4.7	4.9	NNE
2	Downwind of working face	1015-1040	3.3	4.9	NNE
1	At the working face	1042-1110	3.3	6.5	NNE
2	Downwind of working face	1040-1105	2.9	6.5	NNE
1	At the working face	1110-1130	2.9	6.4	NNE
2	Downwind of working face	1105-1130	2.0	6.4	NNE
3	Downwind	1140-1200	1.6	6.5	NNE
4	Upwind (at Ave F & 10th Street)	1206-1230	2.9	6.5	NNE
February 6, 1997					
1a	At the working face	1030-1050	4.9	4.1	W
2a	Downwind of working face	1031-1051	3.1	4.1	W
1	At the working face	1050-1110	3.7	4.2	N
2	Downwind of working face	1051-1111	3.1	4.2	N
1	At the working face	1130-1150	3.4	6.1	N
2	Downwind of working face	1130-1150	2.6	6.1	N
3	Downwind of working face	1200-1220	1.7	6.1	N
4	Upwind (at Ave F & 10th Street)	1210-1230	1.6	6.1	N

1 ED50 is equivalent to Dilution Threshold (D/T)

2 WS and WD denote the wind speed and direction at the location during the time of sample collection.

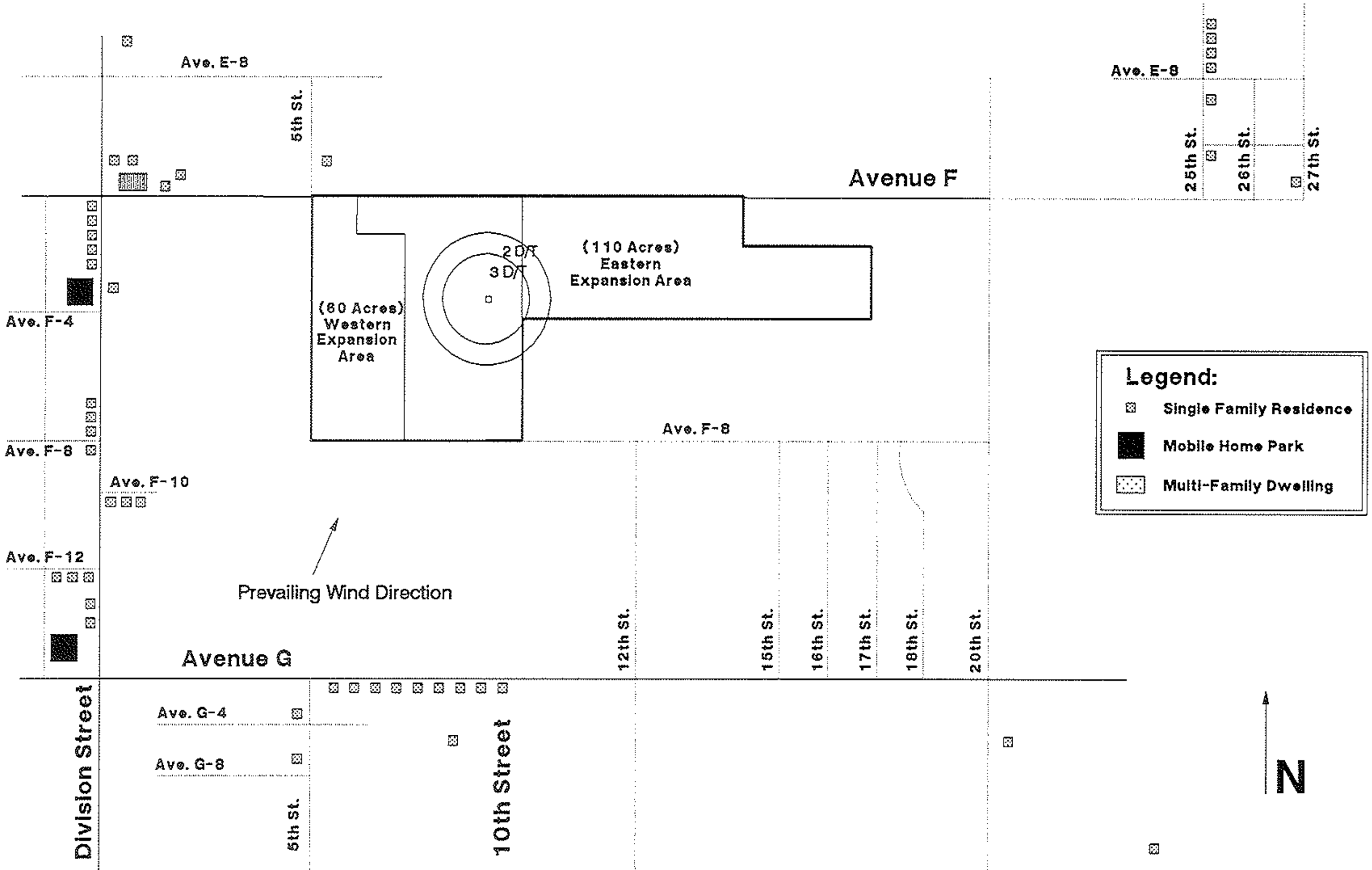
3 Denotes wind direction was variable.

Odor Modeling

The ambient odor monitoring results were used as a basis for a screening model to predict downwind odor thresholds. The modeling analysis of the ambient odor consisted of two major steps: source strength identification and ambient odor simulation. Source strength was estimated by a screening model, TSCREEN. Ambient odor simulation was conducted by a refined model, ISCST3. Both models are recommended and accepted by the United States Environmental Protection Agency. Additional information on the methodology used for the odor modeling is presented in Appendix I.

Ambient odor isopleths (contours) were plotted for the samples collected on July 8, 1996 as a representation of solid waste refuse operations only and on January 30 and February 6, 1997 as a representation of days when sludge is accepted at the site. The February 6, 1997 data had slightly higher odor levels than the January 30, 1997 data, so it is a more conservative representation of conditions during sludge acceptance at the site. The ambient odor isopleths based on the monitored data of July 8, 1996 are presented in Figures 5.6-6 through 5.6-8 and February 6, 1997 are presented in Figures 5.6-9 through 5.6-11. Three different locations were simulated for each day to represent odor impacts in the current working area (actual), south of the current working area (transposed) and at the eastern end of the proposed expansion (transposed). The transposed isopleths are shown as dotted lines. The three locations are in the downwind direction of either 1) prevailing winds or 2) wind monitored during the sampling events.

Results of the modeling analysis show a 4 D/T isopleth or less along or within the property boundary in all cases except on the day sludge was being accepted and operations were simulated to be as close to the property boundary as feasible. A distance of 150 feet from the property boundary was simulated as the closest operations will ever be to the boundary. Under those circumstances, it was

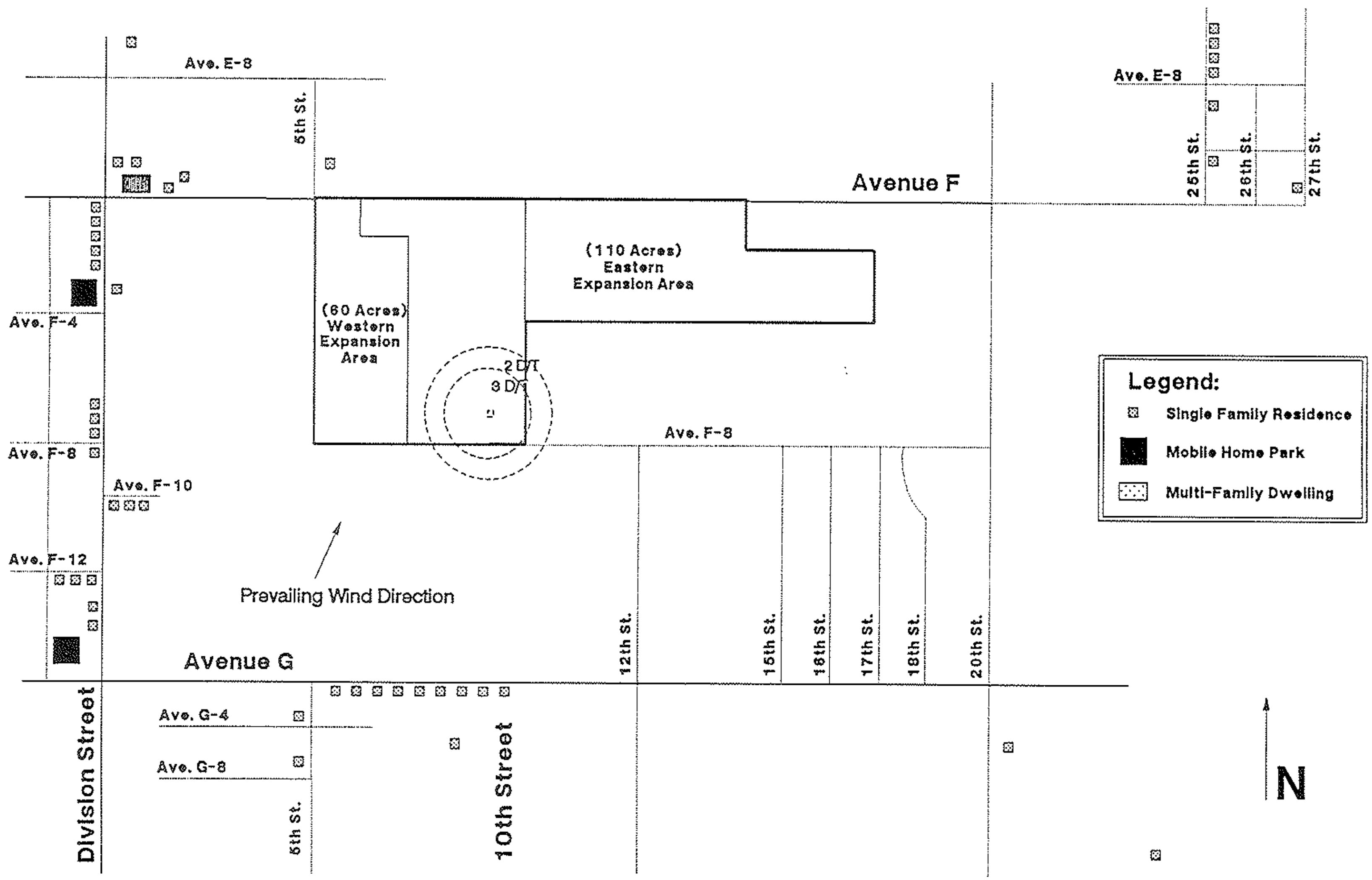


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6–6

MODELED ODOR ISOPLETHS FOR WORKING FACE IN THE EAST END OF EXPANDED LANDFILL (JULY 8, 1996)

Source: Pacific Environmental Services, Inc., 1997

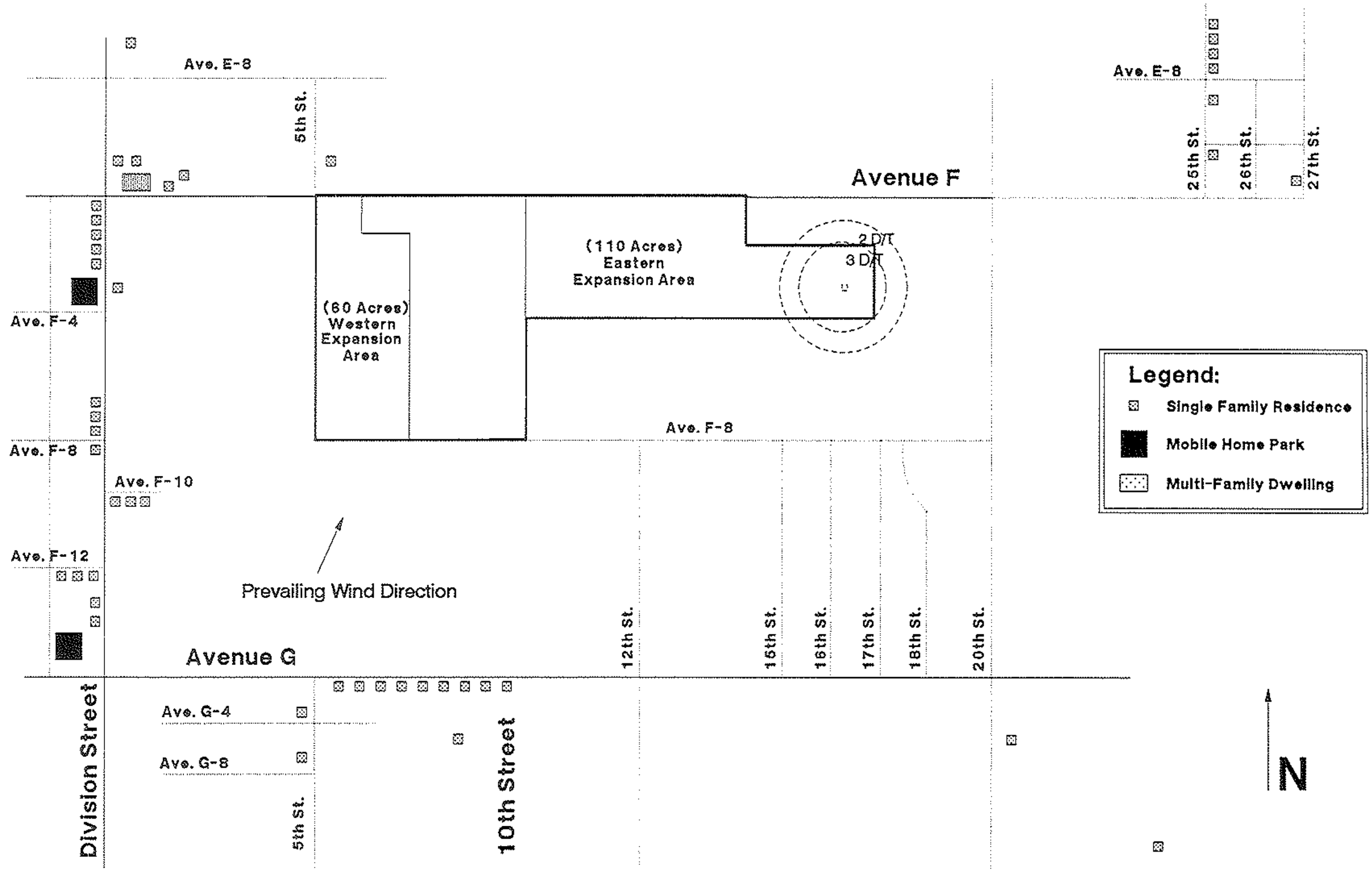


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6–7

MODELED ODOR ISOPLETHS FOR WORKING FACE IN THE SE CORNER (JULY 8, 1996)

Source: Pacific Environmental Services, Inc., 1997

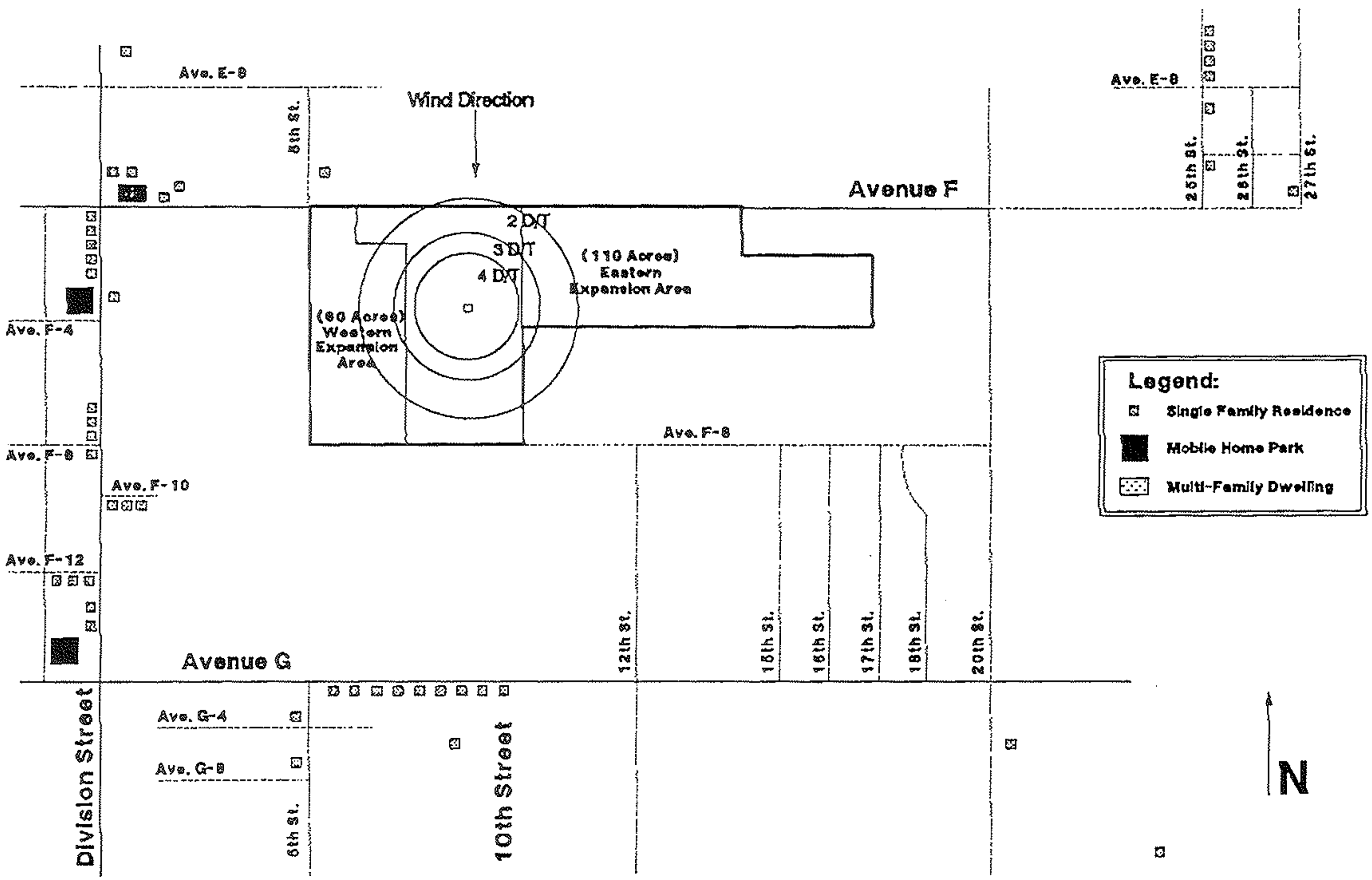


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6-8

MODELED ODOR ISOPLETHS FOR WORKING FACE IN THE EAST END OF EXPANDED LANDFILL (JULY 8, 1996)

Source: Pacific Environmental Services, Inc., 1997

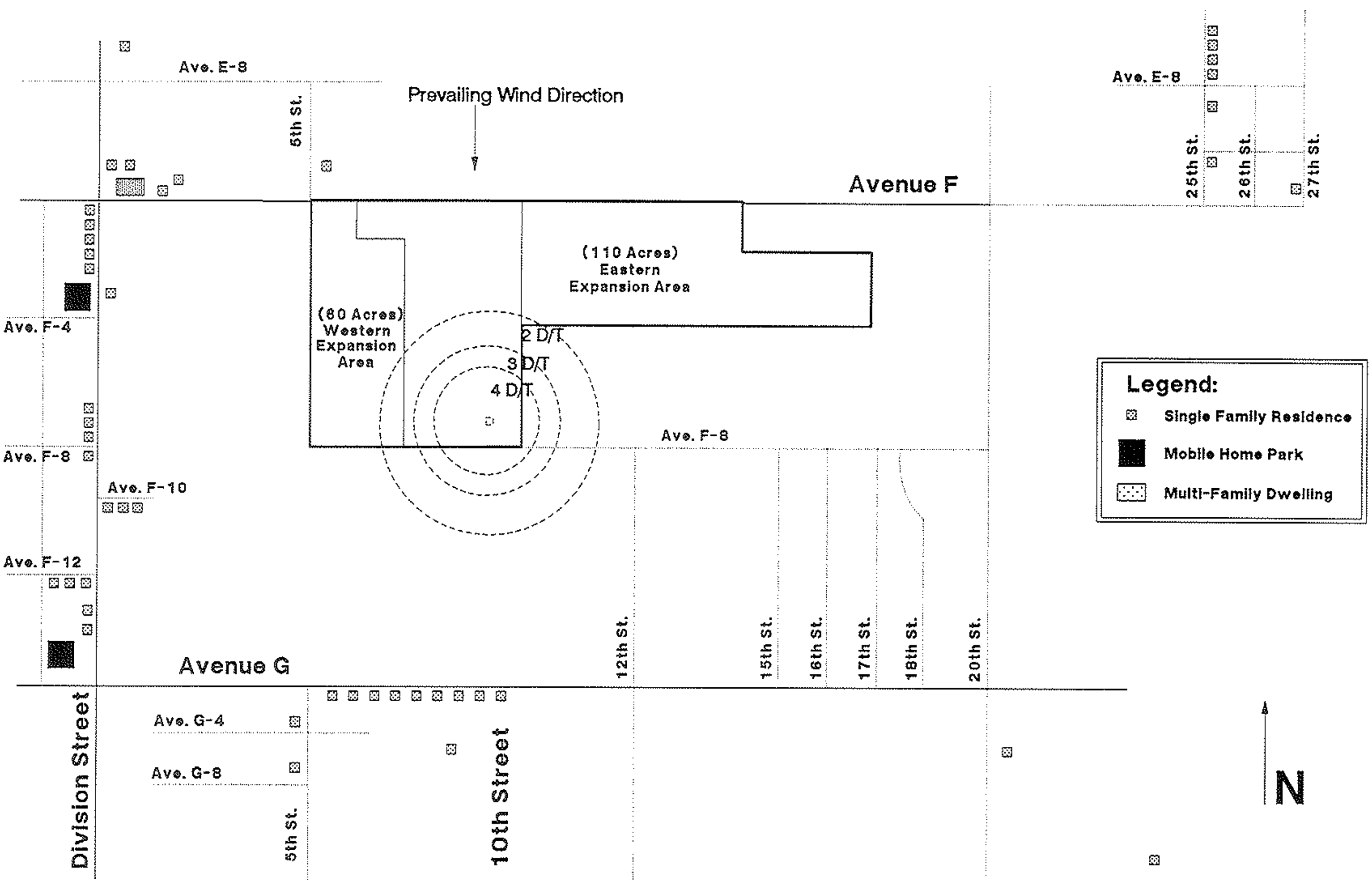


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6–9

MODELED ODOR ISOPLETHS
(FEBUARY 6, 1997)

Source: Pacific Environmental Services, Inc., 1997

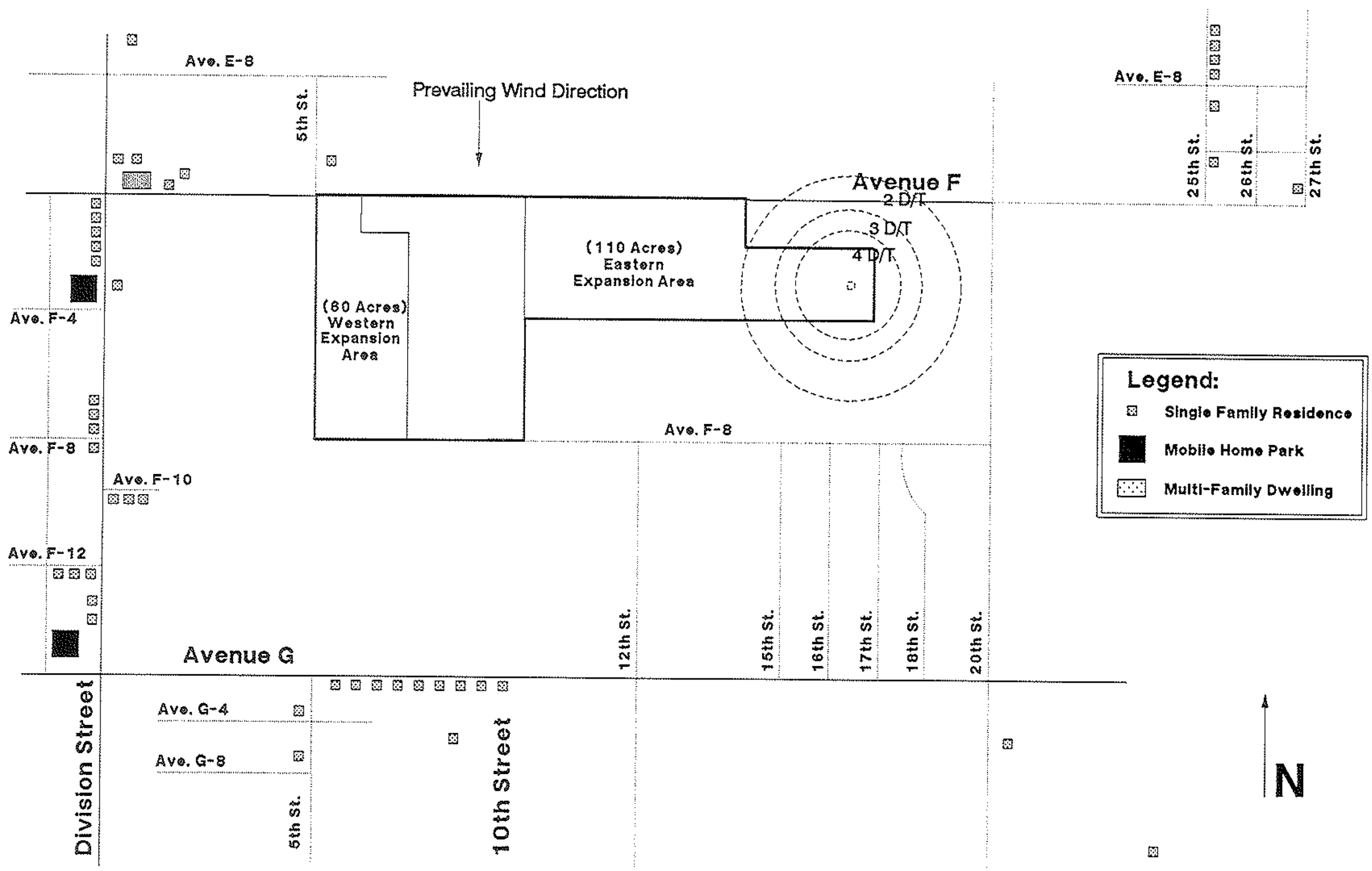


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6–10

MODELED ODOR ISOPLETHS FOR WORKING FACE IN THE SE CORNER (FEBUARY 6, 1997)

Source: Pacific Environmental Services, Inc., 1997



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.6–11

MODELED ODOR ISOPLETHS FOR WORKING FACE IN THE EAST END OF EXPANDED LANDFILL (FEBUARY 6, 1997)

Source: Pacific Environmental Services, Inc., 1997

determined that odor could be a potentially significant impact if new residential developments were to occur in the immediate vicinity of the landfill.

5.6.2.2 ODOR STANDARDS

Odor standards have been established in the SCAQMD CEQA Air Quality Handbook (dated April, 1993) based on a quantitative assessment of potential odors and meteorological conditions. A method of quantitatively assessing odors has been devised which considers how many times an air sample must be diluted with "clean" air before the odor is no longer detectable to an average adult with average odor sensitivity. An odor panel which relies on the sensory responses of a selected group of individuals called panelists is a method that can be used to analyze odors. As discussed in Section 5.6.2.1, the number of dilutions needed to reach the threshold level is referred to as a "dilution to threshold" (D/T) factor. According to SCAQMD, an odor with a D/T of 2 (2 parts of fresh air to one part of odorous air) becomes faintly detectable to almost all receptors. At 5 D/T, people become consciously aware of the presence of an odor, and at 5 to 10 D/T, the odor is strong enough to evoke registered complaints. A significance threshold has not been established for odor due to the subjective nature of perceived impacts and the varying sensitivity to odor types and concentrations by receptors. At a given concentration, an odor may be objectionable to one receptor but not even perceptible to another. For the Antelope Valley Composting Facility (State Clearinghouse No. 94061056) project, currently being considered for approval, it was determined that odor generated from the project site may at times be perceptible and considered offensive to some off-site receptors at D/T's below five. Under certain worst-case scenarios (calm winds, high temperatures, high humidity), odor impacts on adjacent properties could be potentially significant.

5.6.2.3 ODOR IMPACTS

Operation of the proposed LLRC would result in two potential sources of odors. The first source would be emitted directly from the solid waste as it is deposited in the landfill. Prior to the application of daily cover, certain wastes such as cooked foodstuffs and food preparation waste, sludge, garden waste, and wet wood shavings may emit odors directly into the air. Low levels of distinct scents that could contribute to localized odor may be associated with these types of waste. The extent of odor generation can be directly or indirectly influenced by the following factors: the types of materials comprising the waste, the age of the refuse, the acidic content of the waste (pH level), and the moisture content of the refuse.

Localized odor associated with fresh refuse and/or decomposing refuse is usually sufficiently diluted through dispersion and/or atmospheric mixing. The annual windrose depicted in Figure 5.6-1 indicates an average annual windspeed at the site of 8.3 mph. Under such wind conditions, off-site odor impacts should be minimized due to rapid dispersion and dilution of the odors. The windrose also indicates that the predominant wind direction is from the south and west (residences along Division Street and G Street), away from the majority of existing odor receptors (residences) which are located south and west of the landfill. However, under certain meteorological conditions, a slight breeze has the potential to transport stronger odors over longer distances and no breeze has the potential to emit stronger odors immediately adjacent to the landfill.

The proposed expansion will increase the rate and volume of waste which can be deposited at the landfill site. The working face of the landfill will increase from approximately 70 by 110 feet for current operations to 100 by 200 feet for future operations at 1,700 tpd. Odor levels may increase proportionally to the working face. Objectionable odors are not anticipated to be a significant impact, under current conditions, due to the distance to the nearest residences in the vicinity of the landfill and the prevailing wind direction away from those residences. The residences in the vicinity of the landfill are scattered with the closest being about 15 residences located approximately 2,500 feet south of the landfill and expansion areas. There have been no odor complaints reported for current operations. Odors can become a potentially significant impact if new residential developments were to occur in the immediate vicinity of the landfill which areas are permitted for residential use. Odors may also become a problem during calm wind conditions, high temperatures and high humidity if there are receptors immediately downwind and adjacent to the landfill.

The second source of odor that can be associated with landfill operation is natural landfill gas. This gas is produced by the anaerobic microbial decomposition of organic matter present in solid waste. The two main constituents of landfill gas are carbon dioxide and methane, either of which have a perceptible odor to humans. Landfill gas can also contain trace chemicals which can cause distinct odors, such as short chain fatty acids and sulfur containing compounds such as mercaptans and hydrogen sulfide. Mercaptan compounds which have been identified at the surface of landfills have particularly low odor thresholds, and may be subject to longer air transport distances. Odor impacts associated with landfill gas are currently not a problem at the LLRC. Due to the dry conditions at the site, very little landfill gas is generated. As is noted in Section 5.6.1.1.3, the landfill gas flare system is non-operational for periods of time due to very low levels of landfill gas generation.

The LLRC site is characterized by a relatively high average annual wind speed of 8.3 m.p.h., predominantly from southwest to northeast. High wind velocities result in very rapid dilution of any potential odors. As discussed in Section 5.6.2.1, the results of odor modeling performed for the existing operations indicate odor levels of less than 4 D/T at the property boundary in all cases except on a day of sludge acceptance in areas where the working face is simulated to be close to the property boundary. All of the data modeled from the actual sampling locations taken around the working area in the central portion of the landfill shows levels of less than 4 D/T at the property boundary. Since the landfill operations will be similar to the existing operations for the expansion project, it is not anticipated that these levels will increase to a level of potential significance unless new residential developments were to occur in the immediate vicinity of the landfill in a downwind location.

5.6.2.4 ODOR MITIGATION MEASURES

* The landfill gas collection systems in the expansion areas would be designed and operated to maximize the collection of gas and minimize fugitive emissions that may contain odors. Continuous monitoring of the gas collection system would provide for maximum efficiency of collection.

  The landfill operator would continue to conduct regular visual inspections of the landfill cover and monitor landfill gas emissions and concentrations of toxic chemicals throughout the entire disposal area pursuant to SCAQMD Rule 1150.1. These surveys would serve to locate cracks in the landfill cover or other areas with excessive fugitive landfill gas emissions which may cause odors. When areas of landfill gas emissions are identified, appropriate corrective action can be taken, such as application and compaction of additional cover material, adjustment of the gas control system, or installation of new gas control facilities.

* Sampling probes would be placed at the perimeter of the expansion areas to detect any significant migration of landfill gas. The location and maintenance of this monitoring system would be subject to SCAQMD review and approval. Results of the monitoring program will be submitted to SCAQMD as is currently done for the existing landfill operations.

* The primary mitigation for potential odors from refuse at the working face is the application of some form of daily cover (soil, tarps, shredded greenwastes, or a

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* Measures required pursuant to current Federal, State and Local landfill regulations pertaining to operations.

combination of these methods). The LLRC will continue to cover the working face of the landfill at the end of refuse disposal operations each day to reduce the potential for odor impacts.

* If an odor or nuisance problem or hazard condition should develop due to new residences being located in the immediate vicinity of the landfill in a downwind direction, appropriate control measures shall be taken to reduce those odors such as adjustments to the landfill gas extraction wells or the flare, application of additional daily cover or soil instead of alternative covers and moving the area of sludge disposal away from affected residences.

In the event an odor complaint is filed and an odor nuisance is verified by the County, the County may order movement of sludge disposal operations to the central portions of the landfill or may order suspension of sludge disposal operations until the nuisance is abated.

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* Measures required pursuant to current Federal, State and Local landfill regulations pertaining to operations.

5.7 BIOTA

5.7.1 EXISTING CONDITIONS

This report discusses biological resources occurring near the City of Lancaster in north central Los Angeles County which could be affected by the project and evaluates the probable effects on those resources. The Background subsection identifies and defines specific study areas in and around the proposed project sites which were subjects of this analysis, and presents the methods used for literature and field surveys.

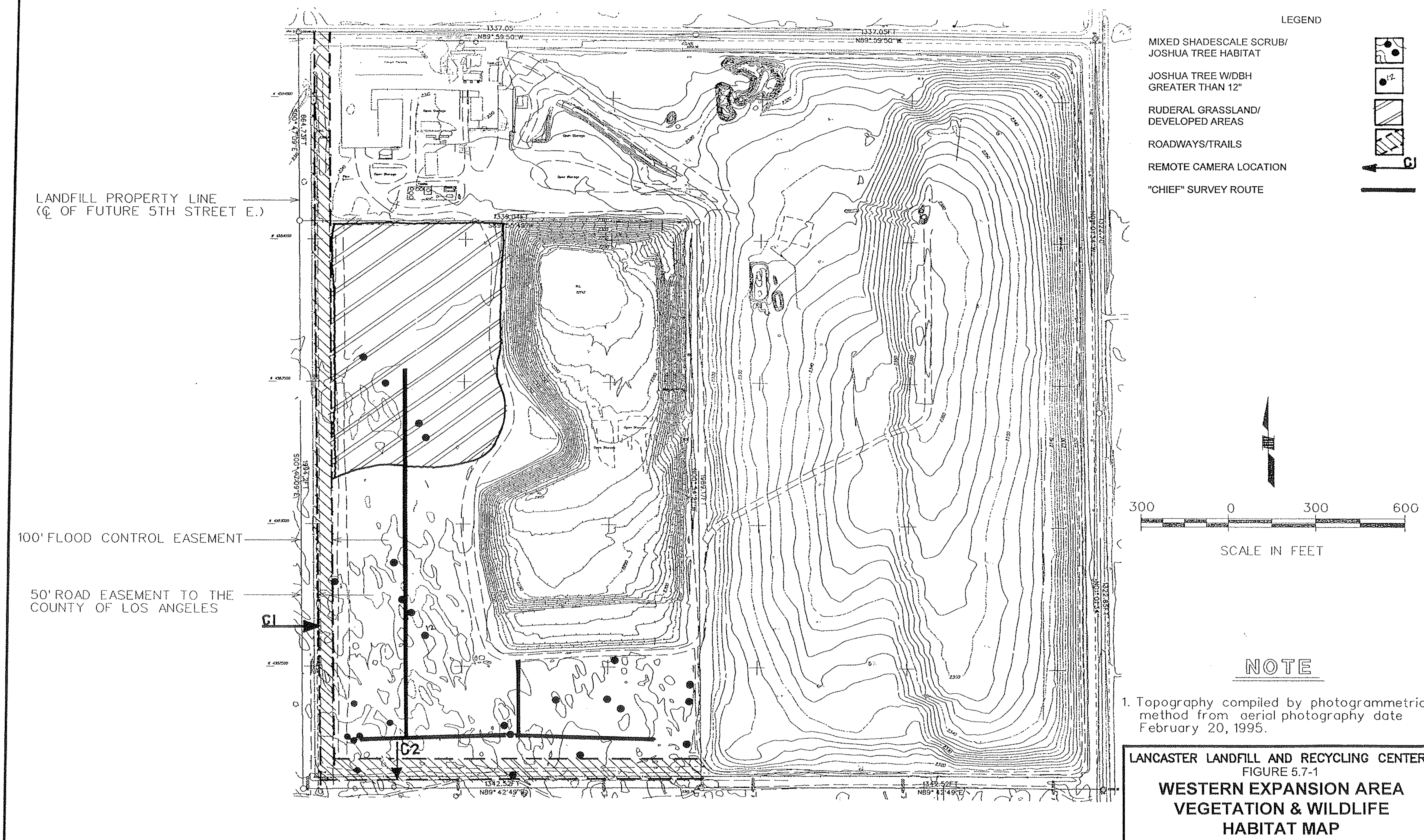
The Setting subsection discusses the 1) site description; 2) plant communities and wildlife habitats that could be affected by project activities; 3) regulatory framework used to assess impacts to sensitive habitats, plants, and animals; 4) known and potentially occurring sensitive habitats, plants, and animals within the project region; and 5) results of special studies of selected wildlife species.

5.7.1.1 BACKGROUND

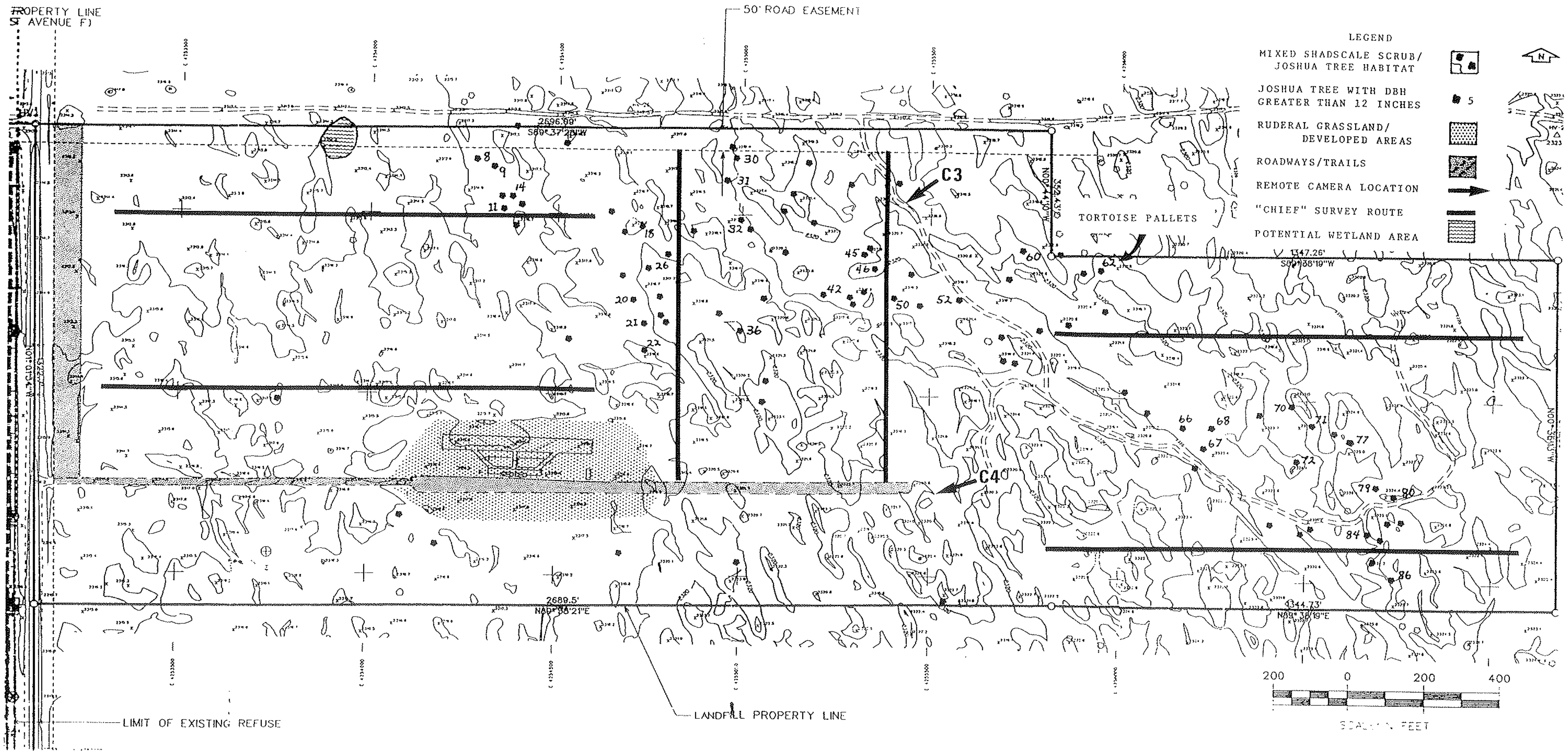
For the purposes of distinguishing the various areas of study discussed in this section, the following definitions will apply:

- ❑ Expansion Areas - either of two specifically identified project locations, "eastern" or "western" expansion area, described below in the Site Description. All proposed landfill expansion activities are intended to occur entirely within developed and undeveloped portions of these properties identified graphically on Figures 5.7-1 and 5.7-2.

- ❑ Vicinity - includes all developed and undeveloped areas immediately outside identified property boundaries. In most cases these areas either abut a property boundary or occur within less than 0.5 mile of it.



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 5.7-1
WESTERN EXPANSION AREA VEGETATION & WILDLIFE HABITAT MAP
Source: David A. Mullen Biological Assessment Report 1994



LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 5.7–2

EASTERN EXPANSION AREA VEGETATION & WILDLIFE HABITAT MAP

Source : David A. Mullen
Biological Assessment Report 1994

- Region - includes all areas within a radius of three to five miles around a proposed expansion area. This larger area is usually referred to in discussions of the probabilities for the occurrence of sensitive plants and migratory wildlife species on expansion areas or in their vicinity.

Several inventories of biological resources, assembled by the preparer of this report and others in the vicinity of the proposed projects, were consulted prior to the initiation of this project (Mullen, 1988; Mullen, 1988a; Antelope Valley College, 1989; Mullen, 1990). Prior to field surveys, a list of sensitive plants, plant communities, and animals was obtained from the California Natural Diversity Data Base (CNDDB, 1994). This list was supplemented with information on sensitive plants from the California Native Plant Society Inventory (Smith & Berg, 1988). The list of sensitive animals was expanded to include species of special concern to the State of California, the Audubon Society and other local organizations or agencies, using geographic distribution and habitat information obtained from a variety of sources (SCDFG, 1978; SCDFG, 1978a; Audubon Society, 1986; SCDFG, 1991). This annotated list is provided in the Biological Study Report in Appendix E of this EIR.

Spring field surveys were conducted by a qualified biologist from April 18 through 22, 1994. Weather conditions were ideal during that period for the observation of wildlife and collection and identification of botanical specimens. Temperatures ranged from the mid-50s to mid-90s. Strong westerly winds, gusting at times to 35 mph began about midday, each day, becoming strongest by late afternoon on most days.

During these surveys, the EEA and WEA were searched on foot for habitats that might be potentially useful to, or that were probably occupied by, wildlife species. Through the use of a topographically detailed site plan map prepared from high-resolution aerial photographs (flown on February 27, 1992), at a scale of one inch = 200 feet and two foot contour intervals and walking of transects as a method of ground-truthing, Generalized Vegetation and Wildlife Habitat Maps were prepared (Figures 5.7-1 and 5.7-2).

Particular attention was given to any areas of natural vegetation communities and wetland features that might be affected by the proposed project. Ponded areas and drainage canals were searched and seined for amphibians or their larvae.

Inventories of small mammals were obtained through the use of Sherman-type live traps operated for three consecutive nights in areas of suspected activity on each of the proposed expansion sites. Traps, baited with a mixture of oats, seeds and crushed walnuts, were set along runways and near burrow systems to maximize catch. Traps were checked each morning. Captives were identified, sexed, aged and released immediately at the site of capture. The locations of trapped areas in each expansion area are shown on Figures 5.7-1 and 5.7-2.

Additional special survey techniques including the deployment of infrared sensing, remotely triggered 35 millimeter camera units to photograph use of project sites by large nocturnal animals. Details of these special efforts are provided in Specific Target Species Surveys sections below. The locations of remote camera units in each expansion area are shown on Figures 5.7-1 and 5.7-2.

All wildlife observed or identified through artifacts such as tracks, scats, burrows, or other definitive signs were recorded. Plants were identified to species when blooms or other identifying characters were present. A list of all plant and animal species identified during field surveys is provided in the Biological Study Report in Appendix E. Included in this list are all animal species which could be reasonably expected to occur in the project region and the scientific names of the species referred to in the text of this report (Grenfell & Laudenslayer, 1983; Laudenslayer & Grenfell, 1983a; Munz & Keck, 1973).

5.7.1.2 SETTING

5.7.1.2.1 Site Description

The LLRC is located on the southwest corner of the intersection of 10th Street East and Avenue F approximately two miles northeast of the desert community of Lancaster, Los Angeles County, California. Zoning of the site and adjacent properties is Desert/Mountain 2 acres minimum (D-2-1).

Current land use within one mile of the existing landfill is open space. Some mobile homes and other small structures are located within a one mile radius of the site. No structures are located within 1,000 feet of the landfill boundary. The nearest is a small radio station approximately one-quarter mile to the west.

As presently proposed, the project involves expansion of the existing LLRC into two parcels of land located immediately east and west of the existing solid waste disposal facility. Covered refuse would eventually fill both expansion areas, excluding a 100-foot setback from property lines and easements which would be used for access roads and the placement of future monitoring wells. The WEA, about 62 acres in size, is located immediately west of the current disposal site within a fenced area which delimits its property boundary (Figure 5.7-1). The northern and eastern portions of the WEA are disturbed by excavation from the daily cover borrow pit and storage of large refuse drop boxes. The southwestern portion of the site is relatively undisturbed except for an access roadway, approximately 20 feet in width, which has been graded along the inside of the perimeter chain link fence. Disturbed areas which are not cleared to bare soil, such as occurs in and around the borrow areas, show early successional growths of ruderal, weedy grasslands vegetation. The relatively undisturbed southwestern portion of the site is covered by a mixture of Shadscale Scrub with a few scattered Joshua Trees.

The 112-acre EEA is located immediately east of the current disposal site across 10th Street East. The EEA is generally undisturbed with the exception of a paved model airplane landing field and access road, located in the southwestern portion of the site, and an access road and ground water recharge wells located along the south western project boundary (Figure 5.7-2). This linear pipeline and five associated wells returns to the underground aquifer approximately 140 gpm of groundwater collected from the treatment facility located at the existing landfill. Where undisturbed, the site is covered by a mixture of Shadscale and Joshua Tree dominated habitats which become more richly populated and of greater wildlife value toward the eastern, less disturbed half of the site.

Macro-topography of both parcels is generally level. Micro-topography consists of numerous hummocks, one to three feet in height, interlaced in many areas with hardpan clay depressions and shallow washes between the hummocks. The EEA slopes slightly from 2,312 feet in the northwest corner to 2,325 feet in the southeast corner. Excluding the borrow pit, the WEA slopes only slightly from 2,310 feet in the northwestern corner to 2,319 feet in the southeastern corner.

The Antelope Valley is typically an environment where evaporation exceeds precipitation. High temperatures are common in summer, with the thermometer often reading up to 110-118° F. Average high temperature for the whole Mojave Desert area in July is generally 97° F (Stones, 1964). A 31-year temperature record for the Palmdale station shows a temperature average extreme of 112° F with a minimum reaching 3° F. Annual precipitation averages eight inches of rainfall. Low rainfall together with high temperatures means excessive evaporation potential. Special adaptations are required for animals and plants in order for them to survive under these xeric conditions.

5.7.1.2.2 Plant Communities and Wildlife Habitats

The development of the Wildlife-Habitat Relationships System has provided resource managers and others with a system that defines communities more broadly than have other systems (Mayer & Laudenslayer, 1988). Another useful system is that of Holland and Keil, which provides useful community names at mid-hierarchy levels (Holland & Keil, 1989).

The habitat type descriptions provided in this section are based primarily on the Wildlife-Habitat Relationships System and are also used in the discussion of wildlife. Community names are primarily those used in the Wildlife-Habitat Relationships System, but communities recognized by the CNDDB (Holland, 1986) and Holland and Keil (1989) are given when necessary (Holland, 1986; Holland & Keil, 1989). What follows is a brief discussion of the plant communities and wildlife habitats that could be affected by the proposed project. More detail is given where necessary in site-specific analysis sections.

By using the Holland and Keil system, four habitat types or their remnants can be identified in the proposed expansion areas and their vicinity. The following are very brief descriptions of each habitat type and their general location and extent in and near the proposed project sites. They are arranged here in the order of their coverage with the greatest coverage listed first.

<u>Upland Communities</u>

Shadscale Scrub

The dominant plant community on the project site and in their vicinity is Shadscale Scrub that is interspersed with other plant communities such as Joshua Tree Woodland. There are approximately 20 acres of Shadscale scrub on the WEA, and approximately 46 acres on the EEA. This brushy vegetation type is dominated by Shadscale (Atriplex confertifolia) and Bud Sage (Artemesia spinescens) in association with a wide variety of other shrubs, grasses and forbs which occur at higher elevations in the Mojave Desert. These low, intricately branched, often spiny shrubs are usually well-spaced with bare ground between dominant shrub species, on poorly-drained flats with heavy, somewhat alkaline soils.

Because of the foraging, nesting and concealment values provided by this diverse plant community, wildlife use is extensive. Reptiles such as the California Whiptail, Sideblotched Lizard and Speckled Rattlesnake forage for insects and other small prey among its shrubs. A wide variety of small mammals, often specially adapted to the harsh, arid conditions, associated with this Mojave shrub community such as Antelope Ground Squirrels, Pacific and Merriam's Kangaroo Rats, Desert Cottontail Rabbits and Black-tailed Jackrabbits are common. Sage Sparrows, Loggerhead Shrikes, Horned Larks and Common Ravens are a few of the birds encountered in this habitat.

Joshua Tree Woodland

The conspicuous Joshua Tree lends this plant community its "woodland" name, however, this tree is not usually dominant in a vegetative sense. Big Galleta Grass, for example, may be more important in terms of frequency, density, and biomass, with a wide variety of shrub species crossing into the woodland from adjacent habitats. Joshua Trees occur in a variety of well-defined desert plant communities and, therefore, it should not be assumed that the community is a Joshua Tree woodland based on the presence of this plant. There are approximately 60 acres of this habitat type present in the EEA, and approximately 4 acres in the WEA.

This community typically occurs on sandy, loamy, or well-drained, gentle, alluvial slopes at elevations between 2,500 and 5,000 feet. The Joshua Tree is usually the only tree species present in these communities, however, in most areas, the shrub understory species actually make up a greater percentage of the cover. Associated species characteristically include Creosote Bush, Burro Bush, and Boxthorn.

Joshua Trees often offer the most suitable, and at times only, nesting and perching sites for desert bird species. As such they are very important as wildlife habitat components. Nests of Mourning Doves, Loggerhead Shrikes, and Common Ravens were found in both the EEA and WEA in these trees. Red-tailed Hawks and Common Barn Owls were also observed to use them as perches from which to hunt or digest their prey.

Developed Habitats

Developed habitats are usually landscaped areas created and maintained by man. Ornamental trees and shrubs have been planted along roadways and around buildings within the developed areas of the WEA. Many cleared areas are either paved or graveled to prevent vegetation growth and erosion. Of the 62 acres within the WEA, approximately 30 acres are developed. Most of this developed area consists of the landfill's soil borrow pit.

Unpaved areas, which have been cleared of vegetation, are dominated by introduced grasses and other herbaceous plants that are considered characteristic of the "weedy" ruderal vegetation of heavily disturbed areas in the California urban environment. In more mesic locales having greater annual precipitation, these areas might be classified as non-native grasslands. However, in this area, where the growing season is extremely short, the scattered condition of these exotic species do not always permit the proper use of this definition. Average densities of plant cover in these "grassland" areas on the project site was usually less than 35 percent, as estimated during casual visual assessments.

Areas in both the EEA and WEA, which have been cleared of native vegetation and permitted to revegetate, contain a species mix dominated by non-native annual grasses and forbs including Tansey Mustard, Russian Thistle, Downey Chess, Six-weeks Fescue and Wild Barley. There are approximately ten acres of ruderal grassland in the WEA, and approximately three acres in the EEA.

Ruderal grassland provides little in the way of wildlife shelter except for ground-dwelling animals. Nonetheless, small mammals such as mice, gophers, and ground squirrels do occur and they, in turn, provide prey for foxes, snakes, and birds-of-prey such as the Red-tailed Hawk and American Kestrel. Grasses and thistles provide food for many seed-eating birds. In this area Kit Foxes, Coyotes and other large mammals are known to use the wildlife habitat provided in disturbed areas.

<u>Wetlands Communities</u>

Alkali Meadow

Wetlands of this type occur in low-lying desert areas on fine-textured, more or less permanently moist, alkaline soils, where seasonal ponding of runoff occurs. This habitat is found to intergrade with Great Basin Sagebrush, Shadscale Scrub, Great Basin Grassland or, on drier, more alkaline soils with Desert Chenopod Scrub habitats. Wildlife commonly utilizing these desert meadow habitats include year-round resident birds such as Mallards, American Coots and Killdeers. These are joined during the winter by large numbers of migratory waterfowl and shorebirds traversing the Pacific flyway including the Long-billed Dowitcher, Black-necked Stilt, and Least Sandpiper as common visitors. These is one example of this habitat type along the northern boundary of the EEA in a small ponded area about 750 feet east of Challenger Way. This area is approximately 0.4 acre in size.

5.7.1.2.3 Regulatory Framework

Regulations Involving Sensitive Habitats

Sensitive habitats are those that are becoming more restricted in California because of their conversion and disturbance, usually for agriculture and urban development. Typically, these habitats include wetlands, riparian zones, native bunchgrass grasslands, and some woodlands and forests. Sensitive habitats may also include those habitats that could support State- or federally-listed plant or animal species. Regional and local regulations and ordinances may also define sensitive habitats, and may include tree or creek protection ordinances that have been adopted by many cities and counties.

Wetlands

Section 404 of the federal Clean Water Act requires that a permit from the U.S. Army Corps of Engineers (USACE) be issued in order to discharge fill into "waters of the United States" or jurisdictional wetlands. Jurisdictional wetlands are wetlands that are regulated by the USACE. The U.S. Environmental Protection Agency also has authority over wetlands and may veto a Corps of Engineers permit. Projects that would fill more than ten acres require an individual permit and would be subject to a complete environmental review. Projects that would fill ten acres or less may be eligible for a Nationwide Permit and would not require the same level of review as an individual permit.

The State of California Department of Fish and Game (SCDFG) also exercises some control over wetlands through Sections 1601 to 1603 of the California Fish and Game Code. These sections authorize the Fish and Game Department to put conditions on any project that would significantly alter natural stream flow or that would alter the bed or bank of a stream. Under this authority, the Department enters into a Streambed Alteration Agreement with the landowner.

Joshua Tree Woodland

The loss of this habitat type, and especially large Joshua Trees, is considered by many desert communities to be of sufficient importance that local protective legislation has been enacted in the form of ordinances to regulate development which could remove them. High density stands of Joshua Tree Woodland and stands with particularly large specimens have been designated as unusual plant assemblages by the U.S. Bureau of Land Management. Los Angeles County has no ordinance or other regulations regarding Joshua Trees in the unincorporated areas of the County, but encourages preservation of trees and their habitat.

<u>Regulations Involving Sensitive Plants and Animals.</u>

For the purposes of this report, a plant or animal is considered a sensitive species if it fits into one or more of the following categories:

- ❑ It is listed as Endangered (E) or Threatened (T) according to the provisions of Section 4 of the Federal Endangered Species Act (USDI, USFWS, 1988). The U.S. Fish and Wildlife Service (USFWS) administers the act.

- ❑ It is listed as Endangered (E), Threatened (T), or Rare (R) according to the California Endangered Species Act (Gould Publications, Inc., 1986-1990). The SCDFG administers the State act.

- ❑ It is a candidate for federal listing (C2) or State listing (C). While not protected by either Federal Endangered Species Act or California Endangered Species Act, some State and federal agencies manage candidate species to prevent them from becoming listed.

- ❑ It is considered by the SCDFG to be a California Species of Special Concern (SCDFG, 1991). The SCDFG often requests that these animal species be considered in the impact section of environmental documents.

- It is a plant species that occurs in the California Native Plant Society Inventory (Smith & Berg, 1988). Some State and federal agencies request that California Native Plant Society List 1 and List 2 plants be considered in the impact section. For instance, the SCDFG often asks that California Native Plant Society List 1B species be included in rare plant surveys. Less frequently, an agency may request the inclusion of plants on the California Native Plant Society List 3 and List 4.

- It is considered Rare, Threatened, or Endangered under Section 15380(d) of the CEQA Guidelines (SCOPR, 1986). This section states, "A species not included in any listing identified in subsection (c) shall nevertheless be considered to be rare or endangered if the species can be shown to meet the criteria in subsection (b)." Thus, according to the CEQA, a species may be considered endangered if its survival is in jeopardy due to loss or change of habitat (California Environmental Quality Act Guidelines Section 15380(b)(1)).

Many federal candidate (C1 and C2) plant species are also included on the California Native Plant Society List 1B, and most State and federal resource agencies have policies that extend some protection to these species. In considering impacts to biological resources, it is important to include impacts and potential impacts to species on the other California Native Plant Society lists because some of these species may be protected under the CEQA, as described above.

By defining sensitive species in this manner, confusion over the term rare and endangered is avoided because, for the purposes of this EIR, the terms Rare, Threatened, and Endangered apply only to species listed as such by the Federal or California Endangered Species Acts. Sensitive species can be protected under provisions of the Federal or California Endangered Species Acts, CEQA, or through policies issued by other State or federal agencies.

Loss of a sensitive species or its habitat is known as take, which means to harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. "Taking" of a federally or State-listed species is always considered significant, while take of other sensitive species may be considered significant depending on the relative sensitivity of the species or its habitat, or the magnitude of the "take." Permits to collect, remove, or destroy listed species are known as incidental take permits and are issued under strict guidelines by the U.S. Fish and Wildlife Service or the SCDFG as authorized by either Federal or California Endangered Species Acts. "Taking" of Federal or State candidate species or other sensitive species may also be considered significant under CEQA Section 15380(d).

If project activities require permits from a federal agency, and federally-listed species are likely to be affected, a consultation between that agency and the U.S. Fish and Wildlife Service is required by Section 7 of the Federal Endangered Species Act. Section 2090 of the California Fish and Game Code requires that State lead agencies consult with the SCDFG if the project is likely to jeopardize the continued existence of State-listed Endangered or Threatened species. Section 2095 of the Fish and Game Code encourages the Fish and Game and U.S. Fish and Wildlife Service to work together to develop a coordinated biological opinion regarding sensitive species.

5.7.1.2.4 Sensitive Habitats, Plants and Animals

Sensitive Habitats in the Project Vicinity

Joshua Tree Woodland

Both proposed expansion areas contain stands of young and mature (diameter at breast height greater than 12 inches) Joshua Trees. A few very large specimens, more than 20 feet in height, are scattered throughout the northeastern portion of the EEA. The approximate locations of all Joshua Trees are indicated on Figures 5.7-1 and 5.7-2. Tables 5.7-1 and 5.7-2 list the approximate height, diameter at breast height (DBH), and general vigor or health of each Joshua Tree in each expansion area. Trees with DBH in excess of 12 inches are indicated by number on Tables 5.7-1 and 5.7-2.

Wetlands

Wetland habitats, which may be under the jurisdiction of the USACE, have been described within project boundaries. A small, ponded area was described along the northern boundary of the EEA, about 750 feet east of Challenger Way, during the preparation of a Section 404 Wetland Delineation for the proposed expansion areas in 1993 (Fugro & McClelland [West], Inc., 1993). An aerial photograph taken on January 19, 1992 was used to determine the extent of inundation and wetland hydrology of this feature. The presence of low matrix chroma soils and scattered occurrences of hydrophytic vegetative species provided some indications of the possible jurisdictional nature of the feature. However, due to the difficulty in establishing the exact extent of hydrophytic vegetation and hydric soil, the entire area inundated in the January 19, 1992 aerial photograph was assumed to be a jurisdictional wetland. This area was about 0.4 acre in size. The wetland delineation has not yet been verified by the USACE.

TABLE 5.7-1
MEASUREMENTS AND VIGOR OF JOSHUA TREES (YUCCA BREVIFOLIA) IN THE WESTERN EXPANSION AREA

NO	HT	DBH	CODE	NO	HT	DBH	CODE	NO	HT	DBH	CODE
1	10	10	A	13	8	10	C	25		5	A
2	12	11	B	14	5	6	A	26	4	4+4	A
3	7	10	A	15	11	9	D	27	7	8	A
4	4	6	A	16	15	10	A	28	7	8	A
5	3	5	A	17	6	6	A	29	12	11	A
6	9	5	A	18	20	12	B*	30	6	10	A
7	4	5	A	19	9	8	A	31	5	9	A
8	14	10	A	20	4	5	A	32	9	10	A
9	10	9	A	21	4	4	A	33	7	9	B
10	3	5	C	22	20	10	B	34	4	7	A
11	15	10	A	23	15	10	B	35	4	6	A
12	15	11	B	24	4	4	A	36	4	7	A

HT = Approximate Height in feet
CODE = Health of tree
- A = Vigorous growth, no dead portions
- B = Less than 50 percent dead or dying portions
- C = More than 50 percent dead or dying portions
- D = Completely dead tree

DBH = Diameter at Breast Height in inches
* Specimen exceeding local ordinance protection limit of 12 inches DBH.

TABLE 5.7-2
MEASUREMENTS AND VIGOR OF JOSHUA TREES (YUCCA BREVIFOLIA)
IN THE EASTERN EXPANSION AREA

NO	HT	DBH	CODE	NO	HT	DBH	CODE	NO	HT	DBH	CODE
1	5	6	A	31	6	18	B*	61	-	9	D
2	4	6	A	32	6	15	A*	62	18	14	B*
3	7	8	B	33	3	10	A	63	8	10	A
4	4	7	A	34	3	10	A	64	8	9	A
5	4	7	A	35	3	9	B	65	8	10	A
6	4	7	A	36	3	14	A*	66	20	13	A*
7	12	10	D	37	3	10	A	67	20	12	C*
8	18	12	A*	38	2	9	A	68	20	12	B*
9	25	18+15	A*	39	3	8	A	69	8	12	A
10	10	10	B	40	2	8	A	70	12	13	B*
11	20	17+12	A*	41	3	8	B	71	15	13	B*
12	5	8	A	42	8	15	C*	72	8+8	11+12	A*
13	8	10	A	43	2	15	D	73	8	9	A
14	12	13	A*	44	3	10	A	74	10	9	A
15	10	9	A	45	5	12	B*	75	9	8	A
16	8	10	A	46	2	13	C*	76	10	9	A
17	4	10	A	47	2	10	A	77	12	10	A*
18	9	13	A*	48	5	9	A	78	9	10	B
19	18	11	B	49	6	10	D	79	8	12	A*
20	19	12	A*	50	4	12	C*	80	10	12	A*
21	18	17	A*	51	2	6	D	81	8	9	B
22	10	15	A*	52	6	20	B*	82	10	10	A
23	22	10	A	53	3	11	C	83	14	10	A
24	5	10	A	54	3	11	A	84	8	14	A*
25	5	8	A	55	6	9	A	85	10	11	A
26	8	12	A*	56	2	10	B	86	12	14	A*
27	12	10	A	57	2	10	A				
28	11	10	A	58	4	11	A				
29	10	11	A	59	2	11	A				
30	25	20	B*	60	4	13	A*				

HT = Approximate Height in feet
DBH = Diameter at Breast Height in inches
CODE = Health of tree
A = Vigorous growth, no dead portions
B = Less than 50 percent dead or dying portions
C = More than 50 percent dead or dying portions
D = Completely dead tree
* Specimen exceeding local ordinance protection limit of 12 inches DBH.

This low-lying feature, however, is a barely discernible example of Desert Meadow habitat. Only two hydrophytic plant species, Desert Saltgrass (Distichlis spicata var. stricta), a Facultative Wet (FACW) and Alkali Sacaton (Sporabolus airoides), a

Facultative Plus (FAC+), were found in association with this seasonally ponded feature and they were not distributed in such a way that the shape and/or extent of the feature could be accurately discerned (Reed, 1988).

Plant Species of Special Concern

A search of the California Natural Diversity Data Base for the Lancaster East, Lancaster West, Rosamond, and Rosamond Lake USGS 7.5 minute quadrangles produced a list of two species that are ranked as Federal candidate species. Both species, Parish's Alkali Grass (Puccinellia parishii), a Federal Candidate for listing (C1), taxa for which sufficient biological information is available to support a proposal to list it as Federally Threatened or Endangered, and Alkali Mariposa Lily (Calochortus striatus), (C2), a taxon which may warrant listing, but for which substantial biological information to support listing is currently lacking, are reported to occur in alkali meadow habitat in the project vicinity. The nearest reported occurrence of Alkali Mariposa Lily was approximately one mile northwest of the Eastern Expansion Area and two miles northeast of the Western Expansion Area on the southeastern corner of Avenue E and the Sierra Highway in 1988. Plants at this location were in a dry meadow with some grasses, sedges and bare ground. Specimens of this plant were identified by the preparer of this report just south of the Mira Loma Detention Center west of Lancaster between 50th and 60th Streets along Avenue J in 1988. These plants were in very alkaline soils around the margins of large ephemeral ponds in Shadscale Scrub habitat. Associated plants include Atriplex confertifolia, Ephedra, Lycium, and Chorizanthe spinosa. Most of the plants which flowered at this location were growing inside the canopy of various shrubs where they were protected from grazing by rabbits. Alkaline ponds, similar to those encountered at this 1988 sight, are replaced on the project site by claypan washes and better drained soils. None of this plant was observed anywhere within proposed project boundaries during timely, springtime surveys for this report.

The nearest and most recent record of Parish's alkali grass was from a site east of Rosamond Dry Lakebed in 1992. Plants were found within halophytic phase saltbush scrub habitat which contained Suaeda, Atriplex canescens, A. Torreyi, A. Spinifera, and A. confertifolia. Calochortus striatus was also found in this same habitat. Similar alkaline habitats are not present within project boundaries. None of this species was identified during surveys for this report.

Only one small (0.4 acre), poorly defined area of marginal habitat of the type required by this species occurs near the northern property boundary of the EEA. None of these species were recorded by botanists during spring-time surveys to determine the extent of wetlands features at that location in 1993 (Fugro McClelland (West), Inc., 1993). Summaries of the status, habitat requirements and local occurrences of all sensitive plant species are provided in the Biology Study Report in Appendix E.

Wildlife Species of Special Concern

No Threatened or Endangered wildlife species are known to reside on the project site and none were observed during the wildlife surveys for this report. However, a search of the CNDBB for sensitive wildlife species lists one federally Threatened species, the Desert Tortoise, which is reported to occur in the project region.

Indications of the occasional use of the area by this species, shallow burrows or "pallets" of the type characteristically used by this reptile for shelter from mid-day sun, were found at two locations within the northeastern portion of the EEA (Figure 5.7-2). These pallets, excavated under shrubs, were old and appeared to have been constructed during previous seasons. No fresh sign, such as tracks or scat, was found while walking parallel transects through both the WEA and the EEA to complete a Cumulative Human Impact Analysis recommended by the SCDFG for studies involving potential impacts to various desert biota. Evaluation forms prepared for this work are included in the Biology Study Report in Appendix E.

The project sites are also within the known range of the Mojave Ground Squirrel, a State Threatened and Federal C2 Candidate species. This diurnal ground squirrel is active above ground in the spring and early summer with emergence dates from March to June, depending on elevation, and would have been expected to be seen at some time during the five days of surveys for this report if it was present within project boundaries. No Mojave Ground Squirrels were seen during the surveys on the site.

Creosote Bush, a species with which the Mojave Ground Squirrel is most often associated, is rare within project boundaries. Desert scrub habitats available, however, appear to provide most of the requirements for this species, although the density of the shrubs is greater than is typically found in the animal's preferred habitat.

White-tailed Antelope Squirrels were observed on many occasions throughout both the EEA, where they were common, and the WEA. Mojave Ground Squirrels occur sympatrically with White-tailed Antelope Squirrels, and while they are competitively superior, they lack adaptations which allow the Antelope Ground Squirrel to continue activity at higher temperatures and are, therefore, much less common where the two species occur together.

Three to five Antelope Ground Squirrels were observed per hour of observation time in the EEA between 8:00 a.m. to 10:00 a.m. and 4:00 p.m. to 7:00 p.m. during timely, springtime surveys conducted from April 18 through 22. Less frequent encounters with this species occurred during midday hours. No Mojave Ground Squirrels were observed during these surveys.

The negative findings of these five days of 1994 springtime surveys corroborate the negative findings obtained during two, 500-trap-day, live-trapping efforts conducted on the WEA in April and May of 1990 (Dames & Moore, 1990). There were no captures or observations of Mojave Ground Squirrels. Based on the results of these efforts and visual surveys over a ten day period, the 1990 report concluded that the WEA does not appear to be occupied by Mojave Ground Squirrels.

The data base also records the occurrence in the project region of three additional Federal C2 Candidate species for Federal listing, the Tricolored Blackbird, San Diego Horned Lizard and the Western Snowy Plover.

Tricolored blackbirds are year-round residents throughout the Central Valley and coastal districts of California. They breed near fresh water, preferably in fresh emergent wetland with dense, tall cattails or tules, but also in thickets of willows, blackberry, wild rose and tall herbs. This species forages on cultivated land and edges of water grown to dense emergent vegetation.

The nearest recorded breeding colony of this species was recorded in Piute Marsh, a freshwater marsh surrounded by semi-desert habitat, located on the southwestern edge of Rosamond Lake bed in EAFB in 1992. Habitats of the type preferred by this species are not available anywhere within project boundaries. None of this species observed during timely, springtime surveys for this report.

The San Diego horned lizard occurs in coastal sage and chaparral habitats in arid and semi-arid areas. Prefers friable, rocky or shallow sandy soils. Forages on the ground in open areas, between shrubs and often near ant nests.

The nearest and most recent recorded occurrence of this species was a Los Angeles County Museum specimen collected from the Little Rock Station area in 1936. Habitats of the type preferred by this species are available within project boundaries. None of this species observed during timely, springtime surveys for this report.

Preferred nesting habitat of the Western Snowy Plover includes flat, dry sand shores of salt or alkaline lakes. Eggs are laid in areas strewn with shells, pebbles and various bits and debris, providing camouflage for eggs and young.

No habitat of the type preferred by this species is present anywhere within the project boundaries of the WEA. A small area of alkaline marsh along the north western boundary of the EEA could be used occasionally by this species during its migration but does not contain sufficient area or resources to sustain breeding. No individuals of this species have been observed during surveys for this report.

Two additional data base species, regarded by the SCDFG as Species of Special Concern, Short-eared and Burrowing Owls have reported occurrences in the project region. Marginal habitats are available for these birds within project boundaries but none were recorded during surveys for this report.

Several wildlife species included in various Federal or State categories of sensitivity or of special concern to the SCDFG and/or to the Audubon Society were encountered within project boundaries. These include California Gull, Common Barn Owl, Loggerhead Shrike, and Horned Lark all recorded at several locations on both EEA and WEA sites. The Loggerhead Shrike is a year-round resident of lowlands and foothills throughout much of California. This species prefers open habitats with scattered shrubs, trees, fences, or other lookout posts. Highest densities occur in open-canopied, valley-foothill hardwood, hardwood-conifer and riparian habitats. Shrikes feed on insects, small birds, mammals and reptiles but amphibians, fish, carrion and various invertebrates are also taken. Open habitat of the type required by this species is available within and in the vicinity of the proposed project. This species was observed throughout proposed eastern and western expansion areas during timely, springtime surveys for this report. Suitable nesting sites are available throughout the project area and its vicinity.

The Horned Lark is found from grass habitats along the coast and desert habitats near sea level to alpine dwarf shrub habitats above treeline. Low, sparse vegetation typifies habitat. This species feeds mostly on insects with some seeds and other vegetable matter. Larks typically nest in a grass-lined cup on the ground in the open. Open habitat of the type required by this species is available within and in the vicinity of the proposed project. This species was observed throughout proposed eastern and western expansion areas during timely, springtime surveys for this report. A summary of the status, habitat requirements, and natural history of all sensitive wildlife species is provided in the Biology Study Report in Appendix E.

5.7.1.2.5 Special Studies of Selected Wildlife Species

Surveys which involved inventories of specific wildlife species, requiring the use of specialized field techniques, included intensive searches for Mojave Ground Squirrels and Desert Tortoise, and inventories of Common Ravens and Coyotes.

The following are descriptions of the field protocols and results of each of these surveys.

Mojave Ground Squirrel (Spermophilus mohavensis)

In addition to daily surveys for this rare squirrel, Cumulative Human Impact Assessments were completed for each of the proposed expansion area parcels. The Cumulative Human Impact Evaluation Procedure assesses ten human impacts which can be used to calculate a Cumulative Human Impact Rating (CHIR) for a parcel of land. Human impacts are evaluated through the identification and quantification by trained field biologists of the amount of human disturbance caused by: 1) Off Highway Vehicle (OHV) use; 2) roads; 3) horse and/human foot travel; 4) dog activity; 5) urbanization; 6) garbage dumping; 7) mining activities; 8) utilities; 9) grazing, and; 10) shrub disturbance. Data for these assessments were compiled on

Cumulative Impact Evaluation Forms during surveys walked along routes shown in Figures 5.7-1 and 5.7-2. Survey techniques and interpretive evaluations of habitat quality and human impacts were those recommended by the SCDFG for evaluating potential Mojave Ground Squirrel habitat (SCDFG, 1996).

Copies of survey tally sheets and habitat evaluation forms are provided in the Biology Study Report in Appendix E.

The CHIR of the undeveloped portion of the WEA, approximately 44 acres, was 22. This level of disturbance indicates moderate human impacts. Antelope Ground Squirrels were observed during surveys in this area, indicating their ability to adapt to this level of human disturbance. The numbers of these animals, however, were much lower (one to two sightings per day) than were seen in the EEA.

Because of its size (112 acres) and the recommendation in the SCDFG protocol that surveyed areas not exceed 40 acres in size, the EEA was divided into three sections. The western most 45 acres was designated EEA-1, EEA-2 the middle 39 acres, and EEA-3 the eastern most 28 acres. The CHIR of these three study areas was 12, 12, and 8, respectively, with an overall average CHIR for the EEA at 10.7.

This CHIR suggests a relatively low level of human impact on the overall area with the greatest affects to the habitat resulting from the development and operation of the small (approximately two acre) model airplane field located near the south central portion of EEA-1 and 2. Habitat conditions get progressively better at greater distances from this development, with the least disturbance observed in the eastern portion of the site.

Coyotes (Canis latrans)

Because of the potential for this common native canid to forage in the expanded waste disposal facility, potentially exposing some refuse to subsequent foraging by the Common Raven, a special survey effort was undertaken to assess the use of the landfill site by Coyotes. Specially developed, two-piece photographic systems consisting of an Olympus Infinity Twin high speed 35mm camera, coupled with an infrared transmitter and receiver were set out at locations in both expansion areas indicated in Figures 5.7-1 and 5.7-2. Interruption of an infrared beam transmitted across a game trail triggers these specially designed cameras. Infrared light is not visible to the mammalian eye so animals are not aware of the "photographic trap" until the flash occurs. This is apparently not a deterrent to use of the area because photographed animals return to the baits and are photographed repeatedly.

The use of these cameras permits the remote, photographic census of all nocturnal animals interrupting the infrared beam. Repeated travel along a game trail can be sequentially recorded up to 1,000 incidences per night or until the film supply is exhausted. Information is stored by date and time-to-the-minute on each photograph and is also recoverable as a tape printout from the cameras' computer.

Four remote cameras were deployed at locations shown in Figures 5.7-1 and 5.7-2 to assess the number and frequency of visits by Coyotes to the landfill site and vicinity. Cameras were in operation from April 19 to May 18 (29 days).

In the EEA, Jackrabbits were photographed six times on five different nights. Coyotes were photographed twice on two nights (April 27 and May 1) in the northeastern portion of the EEA (Camera 3). This recording station was set to intersect an old roadway where fresh Coyote scat indicated its use as a regular game trail. No other animals were recorded.

In the WEA, Jackrabbits were photographed 17 times on ten different nights. No other animals were recorded. Cameras in this area were set to intercept animals entering the landfill enclosure via two shallow burrows under the chain link fencing. These were the only access routes into the enclosure.

From this photographic survey evidence, Coyotes are shown to be present in the project vicinity but not in unexpectedly high numbers. It does not appear that they enter the WEA under the fencing, though it is possible that they do so with such low frequency that they were not recorded during this 29-day survey period.

Common Raven (Corvus corax)

Inventories of this species on the working face and in the immediate vicinity of the existing landfill site were obtained from time-constrained counts of all Ravens observed during 30-minute periods in the morning (0800-0900), at mid-day (1100-1300) and in the evening (1700-1900) each day for five days. Counts were made from a fixed position (blind) using hand-held binoculars. Every five minutes, during each half hour census period, the horizon was scanned slowly in a clock-wise direction through a full 360 degrees and all Ravens counted. The results of these efforts are provided in Table 5.7-2.

These results indicate that about 20-25 percent of the total population of Ravens which occur in the project vicinity are present on the active landfill area throughout each day. It is not until the late afternoon or evening hours, following the departure of the work crews, that most of the population convenes to scavenge the site. When this occurs, usually between the hours of 4:00-7:00 p.m., as many as 160 Ravens were counted in a single survey (Table 5.7-3).

These birds find sufficient edible refuse around the margins of the tarp used to cover the working face of the landfill to attract them to the area despite efforts by the work crews at the end of each day to scare them away using explosive devices. Ravens and gulls scatter following the discharge of these devices but Ravens begin returning to the vacated site within five minutes, and most are again on the site within ten minutes. Gulls often leave the area at this time of the evening, probably to go to roost at aquatic habitats (e.g., ponds, canals or reservoirs) somewhere in the vicinity.

TABLE 5.7-3
RAVENS RECORDED DURING TIME-CONSTRAINED COUNTS

DATE	TIME		
	MORNING (0800-1000 HRS)	MID-DAY (1100-1300 HRS)	EVENING (1700-1900 HRS)
April 18	-	-	66 (58-73)
April 19	18* (13-28)	16 (5-42**)	98 (81-103)
April 20	21 (10-28)	9 (30-26**)	93 (72-131)
April 21	25 (20-30)	34 (23-41)	143 (124-160)
April 22	14 (8-18)	31 (26-37)	-

* Average number of Ravens counted during six, binocular-aided, horizon sweeps taken at five-minute intervals for 30 minutes from a fixed blind.
** Mixed raven and gull flock "wheeling" above the landfill.

The location of two active raven nests in Joshua Trees in the EEA and WEA are shown in Figures 5.7-1 and 5.7-2 (Harrison, 1978). Birds attending these nests were observed as they returned from the direction of the landfill with items of garbage to feed their nestlings. It is probable that a high concentration of nesting Ravens has developed in the vicinity as a direct result of the easily accessible food source available at the landfill (USDI, BLM, CDD, 1990).

It is probable that this unnatural concentration of Ravens would have a depressing effect on local stocks of the normal foraging items selected by this species under natural conditions (Boarman, 1993). Ravens usually glean on the ground to collect a wide variety of plant materials such as nuts, grains and berries as well as carrion.

They are also adept at searching for food while in flight and will pursue and take small prey including birds eggs, reptiles (lizards, snakes, and young tortoises) mice and other small mammals as large as rabbits (Bent, 1946).

5.7.2 THRESHOLDS OF SIGNIFICANCE

Impacts to biological resources would be considered potentially significant impacts of the project if they meet any of the following conditions:

- ❑ Cause a fish or wildlife population to drop below self-sustaining levels.
- ❑ Threaten to eliminate a plant or animal community.
- ❑ Substantially affect, reduce the number, or restrict the range of unique, rare, or endangered species of animal or plant, or the habitat of the species.
- ❑ Interfere substantially with the movement of any resident or migratory fish or wildlife species.
- ❑ Change the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants) or animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects).
- ❑ Introduction of new species of plants or animals into an area, or in a barrier to the normal replenishment of existing species.
- ❑ Reduction in acreage of any agricultural crop.
- ❑ Increase the rate of use of any natural resources.
- ❑ Deteriorate existing fish or wildlife habitat.
- ❑ Adversely affect significant riparian lands, wetlands, marshes, or other wildlife habitats.

5.7.3 IMPACTS

5.7.3.1 CONSTRUCTION IMPACTS

In general, impacts that can be directly caused by construction activities include potential temporary or permanent disturbance of vegetation and sensitive plants due to the demolition of old facilities or to the clearance of existing open space for new construction. Potential impacts on terrestrial and aquatic animals can result from construction activities that alter habitat, disrupt wildlife migration, change wildlife productivity, or destroy wildlife.

The project would result in the removal of approximately 50 acres of Joshua Tree Woodland Habitat and as many as 122 Joshua Trees. Joshua Trees are not a special status species.

Joshua Tree habitat is considered common in the Antelope Valley region and the Mojave Desert. The project site contains many mature (DBH greater than 12 inches) as well as young Joshua trees. As presently designed, the development planned for this site would result in the elimination of most of the vegetation and wildlife resources presently on the property. Loss of 50 acres of this habitat type is considered a less than significant impact.

The project could result in the loss of specific habitats of one or more sensitive wildlife species, the Desert Tortoise and the Mojave Ground Squirrel. However, these species are not resident on site. Most of the EEA and all of the WEA represent poor habitat for the desert tortoise due to previous impacts of the model airplane club on the EEA and the landfill borrow pit on the WEA. The eastern third of the EEA, approximately 40 acres, represents higher quality habitat for both the desert tortoise and Mojave ground squirrel. However, on-site surveys have found little indirect evidence of tortoises and the site is considered to be marginal tortoise habitat due to the scarcity of the creosote shrub vegetative community with which the tortoise is most often associated. No sign of Mojave Ground Squirrel was found on-site during focused surveys for that species.

Actions of federal agencies that may result in the take of listed Threatened or Endangered species or their habitat are often resolved through a consultation under

Section 7 of the federal Endangered Species Act between the affecting agency and the USFWS, the federal agency responsible for the protection of endangered species.

The project could result in the "taking" of one or more of two rare plant species (Federal candidates for listing) known to occur in the project region.

Marginal habitat for these species is available within project boundaries but past and present disturbances, lack of ideal habitat conditions required by each species, and the failure to find either plant during timely surveys for this report, make it unlikely that they would be present. This is considered to be a less than significant impact.

The project could result in the "taking" of one or more state or federally listed or candidate wildlife species known to be present within project region.

One or more of five bird species occur in the project region which could utilize portions of the project site. Among those most likely to be adversely effected by the project are the Loggerhead Shrike, Horned Lark and Common Barn Owl, species observed during field surveys and for which suitable nesting habitats are present within project boundaries.

Habitats exist on the site which could support the year-round or seasonal occurrence of one rare mammal and two reptile species which could be adversely affected by the project. While none of these were observed during the field surveys the Mojave Ground Squirrel and Desert Tortoise have been reliably reported to have occurred recently in the vicinity. Additional, intensive and timely surveys would be required to determine the presence or absence of any of these species within project boundaries prior to any construction activities. Any disruption or loss of these animals or their habitats, if occupied by these species, would be considered a potentially significant impact.

5.7.3.2 OPERATIONS IMPACTS

Potential environmental effects are also related to the long-term operation of the landfill as well as its future maintenance and management.

Landfill expansion may attract increased numbers of pest species such as Ravens, Starlings, blackbirds and gulls.

Under present operation procedures, large numbers of Ravens and lesser numbers of other birds are attracted to the working face of the landfill to scavenge for food in exposed refuse. While most of these species pose no significant threat to nearby desert environments, the unnatural concentration of Ravens in the area does create a potentially significant impact by increasing predatory pressure on newly hatched offspring of the federally Threatened, Desert Tortoise population in the vicinity.

5.7.4 MITIGATION MEASURES

The proposed action will not substantially diminish a wildlife community. The proposed action will result in the loss of approximately 64 acres of Joshua Tree woodland and approximately 66 acres of Shadscale scrub habitat, which provides cover and forage for some species. This habitat loss will occur in phases over a period of approximately 20-25 years. As each phase of the landfill is filled, it will be revegetated with native species. Prior to construction activities in the EEA, a botanical survey will be conducted to establish existing vegetation densities in order to develop appropriate revegetation seed mixes. As each new landfill phase is constructed, organic matter from the top 12 inch to 18 inch of in-place soils will be stockpiled for use in augmenting the vegetative layer of the final landfill cover. This is expected to enhance and accelerate native habitat re-establishment on closed areas of the landfill.

Wildlife species resident on-site are expected to move to either undisturbed localities on-site or off-site as their range becomes affected by construction or operations activities. Ample off-site area is available for relocation, and the movement of non-sensitive species is not considered to be a significant effect of the proposed action.

* The revegetation of completed landfill cells will restore vegetative cover, resulting in repopulation of disturbed areas. Revegetation of individual landfill cells is expected to require 50 to 100 years to establish a functional perennial plant community that approaches pre-disturbance cover, density, and species composition capable of supporting wildlife.

* Landfill operating procedures will continue to restrict the size of the working face of the landfill and all exposed refuse will be covered daily to reduce the attraction of such bird species as gulls, starlings, blackbirds and ravens as well as mammal and insect pests. Tarps used in place of daily cover should overlap the edge of the working face by at least ten feet in each direction and should be weighted down with tires at ten foot intervals to prevent access to refuse.

To ensure that no sensitive plant species are affected by the project, additional, intensive and timely preconstruction surveys will be undertaken to determine the presence or absence of either of these species within project boundaries prior to any construction activities. Surveys will focus on habitats capable of supporting Alkali Mariposa Lily and Parish's alkali grass. The only habitat on the site with potential to support these species is the small (0.4 acre) desert meadow habitat located on the northern edge of the EEA. If sensitive plants are found as a result of preconstruction surveys, further mitigation will include transportation of individual plants to undisturbed areas.

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* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

The 0.4 acre of desert meadow habitat on the northern edge of the EEA may constitute a jurisdictional wetland as defined by the USACE. Prior to any construction activities in this area, the applicant will obtain a verification from the USACE regarding the wetlands delineation conducted for this site in 1993. If necessary, the applicant will redesign this portion of the EEA to avoid impacts to this area. However, the USACE may decide to accept mitigation at an off-site location and issue a Nationwide 26 Permit to fill this potential wetland. Avoidance or off site compensatory mitigation would reduce this impact to a less than significant level.

If any desert tortoises are found as a result of preconstruction surveys, there will be relocated to undisturbed areas, in coordination with the SCDFG and the U.S. Fish and Wildlife Service.

5.8 CULTURAL AND PALEONTOLOGICAL RESOURCES

5.8.1 EXISTING CONDITIONS

5.8.1.1 CULTURAL RESOURCES

Natural Setting

The physiographic setting consists of undeveloped relatively flat land and only one intermittent drainage on the extreme eastern boundary of the project area. The project area lies on the valley floor consisting of a thin covering of Quaternary alluvium characterized by sand, mud and clay deposits. These deposits may have been left by streams flowing through the area near the end of the Ice Age (Raschke 1991:3).

A Joshua Tree woodland plant community was one vegetation type observed in the eastern portion of the project area. A Joshua Tree woodland is usually found on the desert slopes of the southern Sierra Nevada, Tehachapi and transverse ranges of Inyo, Kern, Los Angeles, San Bernardino and northern Riverside counties, ranging from 2,500 to 5,000 feet in elevation. This community occurs on gravely, well-drained alluvial slopes (Nelson 1991). The Joshua Tree woodland intergrades with desert scrub communities on site in the eastern parcel of the project property. Due to recent disturbance, the western parcel is characterized by a desert scrub community. On-site vegetation is dominated by saltbush and grasses.

There are no notable physiographic features, outcrops, springs or other sources of permanent surface water on the two parcels. The western parcel has been cleared and graded in the past and is characterized by a mixture of natural vegetation and introduced weeds, and grasses. This parcel has been associated with the LLRC where dirt is presently removed from the borrow pit and used to bury trash. The eastern parcel appears to have had no previous land use (i.e., agriculture or grazing activities).

Cultural Resources Records Search

Prior to initiating the archaeological reconnaissance field surface survey of the subject property, an intensive literature records search of archival sources housed at the Archaeological Information Center, Institute of Archaeology, University of California, Los Angeles was conducted. Archival sources consulted include:

1. State archaeological site map archives
2. State site records archives
3. State archaeological report files
4. Historic USGS topographic quadrangle maps
    a. Lancaster (1958)
    b. Rosamond (1943 and 1956)

5. The National Register of Historic Places
6. California Historical Landmarks (1990)
7. California Inventory of Historic Resources
8. Historic Cultural Monuments
9. Cultural Heritage Board of Historic-Cultural Monuments

Four previous archaeological surveys have been conducted within the general area and are on file at the Archaeological Information Center, Institute of Archaeology, University of California, Los Angeles.

Prehistoric-Aboriginal Records Search

A cultural resource records and literature search revealed that no prehistoric-aboriginal period sites are recorded within the project property, and no prehistoric sites are recorded within the general area (one mile) from the project property.

Historic Archival Records Search

A cultural resource records and literature search of historical and archival records revealed that no historic sites have been identified within the project property; however, one historic site (CA-LAn-1501H) is located within a one mile radius of the subject area. The site consists of three foundations dating from as early as perhaps the 1900's to the 1950's, and it was recorded by Norwood and Wessel in August of 1986.

Archaeological Field Procedures

A physical field inspection of the project area was conducted in 20 hours over two days from January 15 to 16, 1994 by Louis James Tartaglia, Ph.D. The entire project area was examined for surface indications of cultural occupations such as artifacts, features, soil changes and other cultural features. The surface field inspection was conducted on foot to examine all land surfaces for any visible cultural resources.

The land surface was primarily flat and the entire property was surveyed; however, some portions of the project property were affected by modern period development associated with the LLRC in the form of surface and subsurface modifications (i.e., asphalt parking lots, storage yards, graded roads and a borrow pit). As a result, approximately 20 acres of the 62-acre parcel (approximately 33 percent) were totally destroyed by the presence of a borrow pit (approximately 15 meters deep) and its associated roads while other portions were severely impacted as in the case of graded roads.

Since the subject property was characterized by flat land, a transect sweep method was employed to insure areal coverage. Transects were spaced between five to ten meters apart depending upon the nature of the surface vegetation and the amount of surface disturbance. If an area was characterized by dense surface vegetation, then a five meter transect was employed; however, if the surface was characterized by a relative absence of vegetation, then a ten meter transect interval was utilized.

Vegetation associated with the 62-acre parcel (west of the existing LLRC) was characterized by extremely sparse vegetation which allowed a clear unimpaired visual inspection of the ground. The vegetation associated with the 112 acre parcel (east of the existing LLRC) was characterized by occasional patches of dense vegetation (grass); however, the majority of the vegetation consisted of open areas with sporadic stands of bushes (i.e., saltbush) and Joshua Trees. In both parcels, all backdirt associated with rodent burrows was examined for any subsurface artifacts that might have been transported to the surface.

The major modern surface modification affecting the 60-acre parcel is a borrow pit over 15 acres in extent and approximately 15 meters deep. In contrast, the eastern parcel consisting of 112 acres was impacted by the Antelope Valley Model Air Park operated by the Antelope Valley Tailwinds Incorporated which covers approximately two acres (including the model airplane runway and associated parking and activity areas). Within both parcels were areas of significant disturbance as a byproduct of roads traversing the property.

<u>Analysis of Cultural Resources</u>

Prehistoric-Aboriginal Period Sites - An archival records search of the project area revealed that no prehistoric-aboriginal period sites were recorded within the project area. The field inspection of the project area did not locate any surface evidence of an archaeological site or past aboriginal occupation (including isolated artifacts).

Historic Period Sites - An archival records search of the project area revealed that no historic period sites were recorded within the confines of the project property. The surface field inspection did not locate any surface evidence of a historic period site and/or structure or past historic period occupation (including isolated artifacts).

Modern Period Sites - An archival records search of the project area revealed that no buildings and/or structures exist within the confines of the project property. The surface field inspection did not locate any surface evidence of any buildings or structures. However, on only the northern portion of the project property immediately adjacent to the dirt road which is the northern boundary of the subject area are located a number of modern period trash dumps. They consist of modern items and are not culturally significant and do not require any additional mitigation measures.

5.8.1.2 PALEONTOLOGICAL RESOURCES

The paleontological resources section of this report is based on a review of published and unpublished paleontological and geological literature of the area. A field reconnaissance of the area was conducted by Mr. Chris Morgan and Mr. Dave Stevens of RMW in May, 1994.

Geologic mapping of the region shows Quaternary age alluvial deposits exposed within the site. These deposits were left by streams and runoff waters flowing across the region. Some of the sediments at the site appear to be lake deposits. This is likely since the alluvium in the region grades into the sediments of Rosamond Dry Lake. Additionally, the site is in the range of elevation of the maximum level of the ancient Lake Thompson. This lake covered about 200 square miles of the Antelope Valley 13,000$\pm$ years ago. Records of the San Bernardino County Museum revealed several fossil occurrences north of the study area in similar deposits. These occurrences contain the remains of fish, frog, lizard, snake, rabbit, several rodents, badger, coyote, and an extinct horse. Further north in deposits of the ancient Lake Thompson, hundreds of fossils of ice age animals have been discovered. These discoveries include a diverse assemblage of animal and occasional plant remains. No fossil remains were located during the site survey.

5.8.2 THRESHOLDS OF SIGNIFICANCE

Impacts of the proposed project would be considered potentially significant impacts if they meet any of the following conditions:

- ❑ Disturb or destroy a resource which is associated with an event or person of recognized significance in California or American history.
- ❑ Disturb or destroy an archaeological resource which has recognized scientific importance in prehistory.
- ❑ Disturb or destroy an archaeological resource which can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions.
- ❑ Disturb or destroy an archaeological or historic resource which has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind.
- ❑ Disturb or destroy an archeological or historic resource which is at least 100 years old and possesses substantial stratigraphic integrity.
- ❑ Disturb or destroy an archaeological resource which involves important research questions that historical research has shown can be answered only with archaeological methods.
- ❑ Disturb or destroy any human remains.
- ❑ Disturb or destroy human remains that are of Native American origin.
- ❑ Disturb, alter, or destroy a site that is currently used for religious ceremonial, or other sacred purposes.

- ❑ Disturb, alter, or destroy a site that is important in preserving unique ethnic cultural values.
- ❑ Disrupt or adversely affect a paleontological site.

5.8.3 IMPACTS

5.8.3.1 CULTURAL RESOURCES

Direct Impacts

Archival records searches of the project area revealed no prehistoric-aboriginal or historic period sites were recorded within the project area. Field inspection of the project area did not locate any surface evidence of archeological sites, postaboriginal occupation, or historic sites. The proposed project will therefore have no direct impacts on cultural resources that can be foreseen at this time.

Due to the nature of this type of surface survey, it is impossible to assess any buried cultural remains and/or resources; it must be stressed that no known buried materials have been recorded within the project property, but unknown archaeological and/or historical materials could be buried beneath the present land surface.

Indirect Impacts

The proposed project will have no significant impact on known cultural resources in the general area. Only one historic site was identified within one mile of the project site, and no prehistoric sites were identified within one mile of the site. There are no activities associated with the project which could indirectly impact any off-site historic or prehistoric resources.

5.8.3.2 PALEONTOLOGICAL RESOURCES

The primary method for estimating impacts to paleontological resources is to estimate the potential for the discovery of fossils. Potential for discovery is a measure of the likelihood that fossils will be discovered during excavations into a given rock unit.

This potential is based on the past discovery of fossils from that rock unit. Paleontological potential does not measure the significance of individual fossils present within the study area, because it is impossible to accurately predict what individual fossils will be discovered.

During the last ice age, several lakes, like Lake Thompson, were present in the Mojave Desert. These lakes supported a large and diverse assemblage of animals. At the end of the last ice age, as these lakes shrank, the fauna surrounding them disappeared. This mass extinction of large mammals is one of the major questions in science today. Many ideas ranging from unfavorable climate to the appearance of man in North America have been proposed as the cause of these extinctions. Fossils from these deposits may hold some of the clues needed to explain these events.

The alluvial deposits have a high potential for the discovery of fossils during grading operations, based on the proximity of fossil localities in similar deposits and the possible presence of lake deposits in the study area. A high potential indicates that grading operations are likely to expose fossils during development. These activities will destroy the fossils. The destruction of these fossils would be a potentially significant adverse impact on the region's paleontological resources.

5.8.4 MITIGATION MEASURES

5.8.4.1 CULTURAL RESOURCES

In the event that cultural resources are encountered during any phase of construction, construction will cease in these areas until the cultural resources are properly assessed and subsequent recommendations are determined by a qualified archaeologist.

If at any time during development Indian burials (any aboriginal human remains-bones) are encountered, then a Native American advisor for the local Native American Indian tribe as well as the County Coroner must be contacted immediately and construction in that restricted area must be stopped until the human remains are legally and ethically dealt with by the appropriate parties.

5.8.4.2 PALEONTOLOGICAL RESOURCES

The following mitigation measures will reduce the adverse impacts of the construction of the LLRC on the region's paleontological resources to a less than significant level. The mitigation measures have proven successful in protecting paleontological resources, while allowing the timely completion of many projects in Southern California.

1. 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. Monitoring will initially need to be on a full-time basis during grading.

2. The paleontologist shall be allowed to divert or direct grading in the area of an exposed fossil to facilitate evaluation and, if necessary, salvage.

3. Because some of the fossils within the alluvial deposits are small, it will be necessary to collect samples of promising horizons for processing through fine mesh screens.

4. Fossils shall be prepared to the point of identification and catalogued before they are donated to their final repository.

5. All fossils collected should be donated to a public, non-profit institution with a research interest in the materials, such as the San Bernardino County Museum.

6. A report detailing the results of these efforts, listing the fossils collected, and naming the repository shall be submitted to the lead agency at the completion of the project.

Implementation of these mitigation resources would reduce potential impacts to paleontologic resources to a less than significant level.

5.9 TRAFFIC

5.9.1 EXISTING CONDITIONS

The existing LLRC is located in a remote area two miles northeast of the City of Lancaster in an unincorporated portion of Los Angeles County. The project site is located within the jurisdiction of Los Angeles County and the City of Lancaster's sphere of influence.

The existing landfill site occupies 102 acres. It is bounded on the north by Avenue F, on the east by 10th Street East and on the south by Avenue F-8. There are currently no roads on the western edge of the site, but the location coincides with the approximate extension of 6th Street East. The WEA will add 62 acres to the site directly to the west of the existing site. The eastern expansion will encompass 112 acres of currently undeveloped land. It is separated from the existing site by a County road - 10th Street East.

The existing facility currently operates Monday through Saturday, between 6:00 a.m. and 5:00 p.m. Proposed hours for the facility are Monday through Saturday, from 5:00 a.m. to 8:00 p.m.

The current operation accepts an average of about 600 tons of refuse per day (based on 1995) to be disposed of at the site. It is anticipated that the proposed expansion will see a four percent yearly increase in daily tonnage until 2010, when the daily intake will be increased to approximately 1,700 tons of refuse per day.

There is currently one access driveway into the LLRC. This is a controlled entrance located on Avenue F, west of 10th Street East along the north boundary of the property.

5.9.1.1 STREET SYSTEM

The primary east-west access road to the site is Avenue G. The principal local north-south access roads are shared between Division Street and 10th Street East. Regionally, north-south access is provided by the Antelope Valley Freeway (SR-14) and Sierra Highway which are both located to the west of the site. A general description of the roads providing access to the project site are listed below.

Avenue F is a two-lane (one lane in each direction) discontinuous roadway which forms the northern boundary of the project site. Currently, this roadway consists of two 11-foot lanes, unpaved shoulders and has a 55 miles per hour (mph) speed limit. Avenue F has a full interchange (half cloverleaf) with the Antelope Valley Freeway (SR-14). In the long-range planning effort, it is assumed that this roadway would be connected between Sierra Highway and Division Street. If this long-range planning effort is implemented, this roadway will become the principal east-west access road to the project site.

Avenue G is currently a two-lane arterial road located south of the project site. Avenue G is currently the primary east-west corridor between the Antelope Valley Freeway and the project site. This roadway consists of two 11-foot lanes, unpaved shoulders and a 55 mph speed limit. Avenue G also has a full interchange (half cloverleaf) at the Antelope Valley Freeway, providing regional connections to the north and south.

Avenue H is a discontinuous roadway that, currently, has no connection between Sierra Highway and Division Street. However, an Avenue H flyover is presently being constructed over Sierra Highway, providing a connection between Division Street and just west of Sierra Highway. This future overcrossing will provide four travel lanes. West of the Antelope Valley Freeway, Avenue H consists of one lane in each direction, no paved shoulders and a 55 mph speed limit. Avenue H also has a full interchange (half cloverleaf) with the Antelope Valley Freeway. Between the Antelope Valley Freeway and Sierra Highway, this segment of Avenue H has a 55 mph speed limit until 10th Street West where the speed decreases to 50 mph, two eastbound lanes and one westbound lane. Presently, Avenue H comes to "T" intersection at Sierra Highway and shares a left and right-turn lane onto Sierra Highway. From Division Street, Avenue H is a two-lane roadway with unpaved shoulders and a 55 mph speed limit.

Sierra Highway is a two-lane, north-south arterial between Avenue I and Avenue F with left-turn pockets in both directions at Avenue G and a northbound left-turn pocket at Avenue H. This segment of roadway currently has a 55 mph speed limit and provides regional access to the north and south and is located east of the Antelope Valley Freeway.

Division Street is one of the principal north-south arterial to the project site. This roadway currently operates with a 50 mph speed limit and has one lane in each direction and unpaved shoulders.

10th Street East/Challenger Way is the other principal north-south access road to the landfill. 10th Street East has two 11-foot lanes and unpaved shoulders.

Access Roads. The site is currently accessible via Avenue F. The current site entrance is located 2,450 feet west of the Avenue F East and 10th Street East intersection. This entrance is 40 feet wide and provides all weather access. For the EEA there would be one access road on the east side of 10th Street East, south of Avenue F and another on the south side of Avenue F just east of 10th Street East.

5.9.1.2 REGIONAL ACCESS

Regional access to and from the project site is provided by the Antelope Valley Freeway (SR-14) located west of the project. The Antelope Valley Freeway runs north-south and has three southbound and two northbound travel lanes. This freeway provides access to the project site via grade-separated interchanges which exist at Avenue F, Avenue G and Avenue H.

5.9.1.3 STUDY SCENARIOS

The scope for this study was developed in conjunction with the County of Los Angeles and the City of Lancaster. The base assumptions, technical methodologies and geographic coverage of the study were all identified as part of the study approach.

The following traffic scenarios are addressed in the study:

- **Existing (1996) Conditions** - The analysis of existing traffic conditions is intended to provide a base of analysis for the remainder of the study. The existing conditions analysis includes an assessment of the adjacent land use, streets and highways in the area, current traffic volumes, and operating conditions.

- **Existing + Ambient Growth (Year 2010) Conditions** - This phase of analysis projects future background traffic growth and operating conditions in the year 2010 which could be expected to result from overall regional growth without the addition of project traffic.

- **Existing + Ambient Growth (Year 2010) + Project Conditions** - This is an analysis of future background traffic conditions in year 2010 with the addition of project-generated traffic.

  Two project scenarios are analyzed in this study. The first project scenario assumes the future extension of Avenue F between Sierra Highway and Division Street. This future improvement is included in the City of Lancaster's long-range planning effort. The second project scenario assumes that this roadway will not be extended. It was necessary to analyze these two project scenarios since Avenue F provides the primary access to the proposed expansion project.

- **Year 2010 Cumulative Base Conditions** - This phase of analysis projects future traffic growth and operating conditions in the year 1998 which could be expected to result from regional growth and related projects without the addition of project traffic.

- **Year 2010 Cumulative + Project Conditions** - This is an analysis of future traffic conditions in year 2010 with the addition of project-generated traffic. Any potential traffic impacts will be determined under the two project scenarios: with and without the extension of Avenue F between Sierra Highway and Division Street.

Based upon County of Los Angeles guidelines, both intersection and roadway segment level of service analysis were performed to identify potential project impacts on the surrounding street system during the morning and afternoon peak hours (by analyzing intersections) and on an average weekday (by analyzing roadway segments). Traffic counts for these locations were conducted in November, 1996.

A total of 13 intersections have been selected for detailed analysis under each of the traffic scenarios identified above. The analysis is focused on assessing potential impacts during the morning and afternoon peak hours during a typical weekday. The 13 intersections analyzed in the study include:

- Avenue F & SR-14 Southbound Ramps
- Avenue F & SR-14 Northbound Ramps
- Avenue F & Division Street
- Avenue F & 10th Street East/Challenger Way
- Avenue G & SR-14 Southbound Ramps
- Avenue G & SR-14 Northbound Ramps
- Avenue G & Sierra Highway
- Avenue G & Division Street
- Avenue G & 10th Street East/Challenger Way
- Avenue H & SR-14 Southbound Ramps
- Avenue H & SR-14 Northbound Ramps
- Avenue H & Sierra Highway
- Avenue H & Division Street

Average Daily Traffic (ADT) level of service analysis was conducted at the following 13 roadway segments:

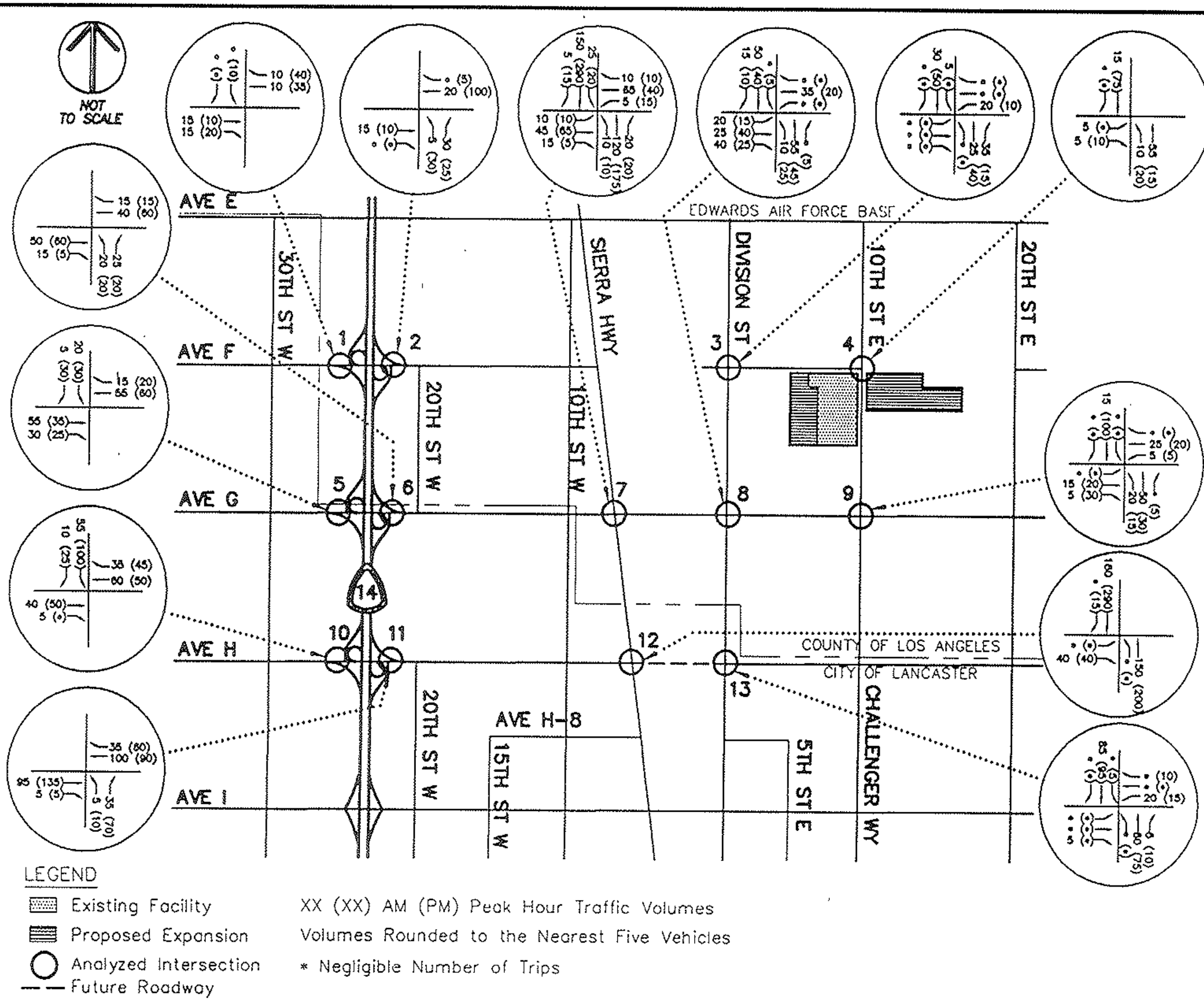
- Avenue F east of SR-14 Northbound Ramps
- Avenue F east of Division Street
- Avenue G east of SR-14 Northbound Ramps
- Avenue G east of Sierra Highway
- Avenue G east of Division Street
- Avenue H east of SR-14 Northbound Ramps
- Avenue H east of Division Street
- Sierra Highway south of Avenue F
- Sierra Highway south of Avenue G
- Division Street south of Avenue F
- Division Street south of Avenue G
- 10th Street East/Challenger Way north of Avenue F
- 10th Street East/Challenger Way south of Avenue F

5.9.1.4 EXISTING TRAFFIC VOLUMES

Traffic counts were conducted during November 19-21, 1996 at each of the analyzed locations during the morning and afternoon peak periods. These counts are documented in Appendix G of this report. Existing peak hour traffic volumes are shown in Figure 5.9-1.

5.9.1.5 PEAK HOUR LEVEL OF SERVICE (LOS)

Level of service (LOS) qualitatively measures the operating conditions within a traffic system and how these conditions are perceived by drivers and passengers. Level of service ranges from LOS A to overloaded conditions at LOS F. Level of service definitions are summarized below in Table 5.9-1.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9-1

EXISTING (1996) PEAK HOUR TRAFFIC VOLUMES

Source: DKS Associates Traffic Impact Study, 1996

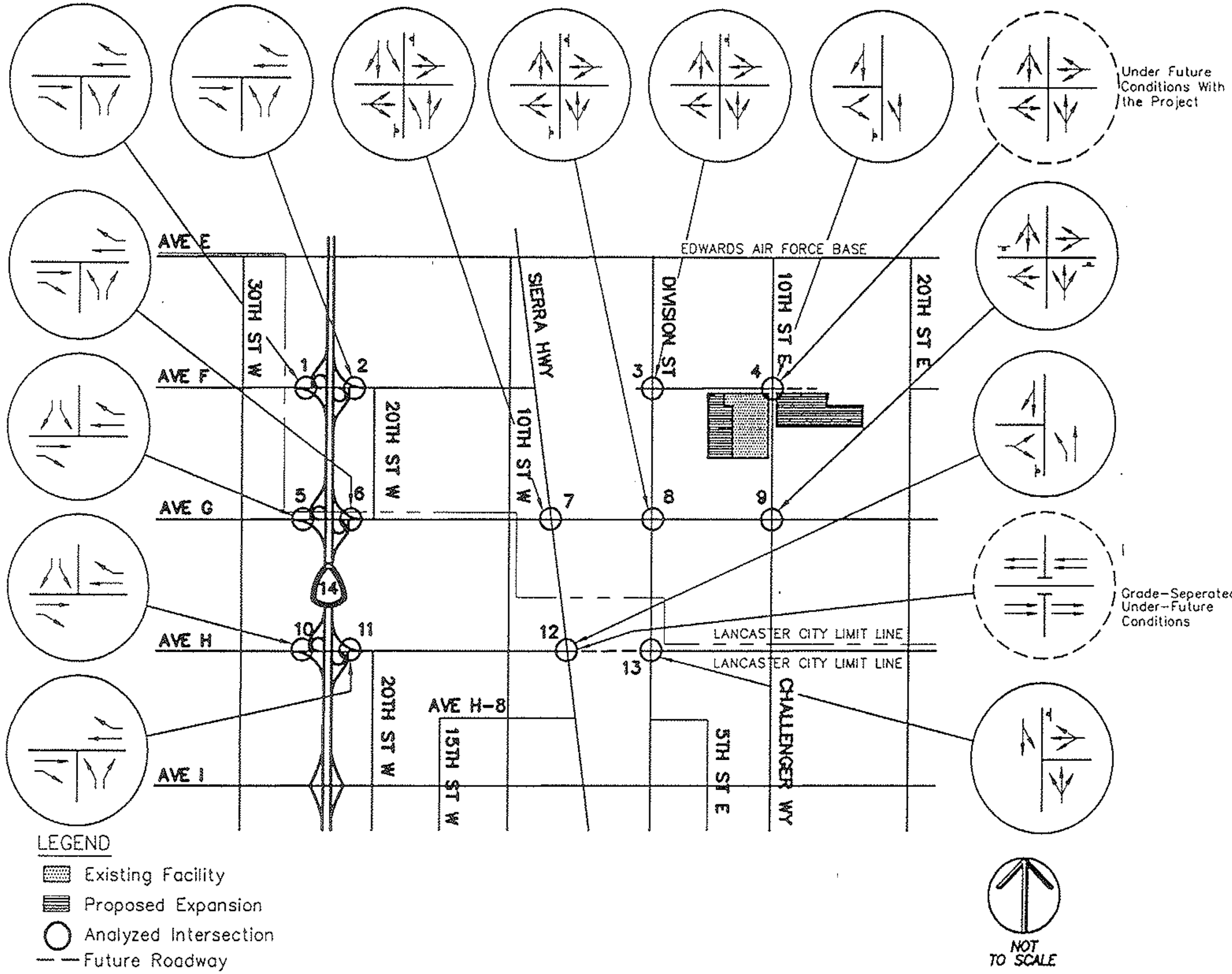
TABLE 5.9-1
LEVEL OF SERVICE AND VOLUME TO CAPACITY RATIO CORRELATIONS

Level of Service	Volume to Capacity Ratio (V/C)
A	0 - .60
B	.61 - .70
C	.71 - .80
D	.81 - .90
E	.91 - 1.00
F	Over 1.00

As set forth in the County of Los Angeles traffic study guidelines, the *Intersection Capacity Utilization* (ICU) method of intersection analysis was used to determine the intersection volume-to-capacity ratio (V/C) and corresponding level of service at the analyzed intersections. By assuming 1,600 vehicles per lane per hour as the practical capacity for critical movements, the ICU method was employed to directly relate traffic demand to the available capacity. The resulting V/C represents the greatest green time requirements plus an allowance for clearance intervals (V/C increment of 0.10) for the entire intersection.

Based upon conversations with Los Angeles County Traffic & Lighting Division staff, the signalized intersection level of service methodology described above was applied to the 13 stop-controlled intersections analyzed in this study.

Based upon the level of service methodology described above, the peak hour traffic volumes presented in Figure 5.9-1 were used in conjunction with existing lane configurations illustrated on Figure 5.9-2 to determine the existing operating conditions at the analyzed intersections. Appendix G of this report contains the existing level of service worksheets.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9–2

LANE CONFIGURATIONS

Source: DKS Associates Traffic Impact Study, 1996

Table 5.9-2 summarizes the existing morning and afternoon peak hour V/C ratio and corresponding level of service at the analyzed intersections during a typical weekday. As shown in the table, all the intersections evaluated are currently operating at satisfactory levels of service (i.e., LOS A).

Traffic signal warrant analysis was also conducted at the intersections. Traffic signal warrants from the California Department of Transportation *Traffic Manual* (December 1986) and the U.S. Department of Transportation, Federal Highway Administration *Manual on Uniform Traffic Control Devices* (March 1986) were used to evaluate the need for traffic signals at the stop-controlled intersections. It was determined from the analysis that none of the study locations currently requires a traffic signal.

5.9.1.6 AVERAGE DAILY TRAFFIC (ADT) LEVEL OF SERVICE

Existing ADT volumes were compared to roadway capacities established by the County of Los Angeles in order to determine the corresponding V/C and level of service for each of the analyzed segments. For a two-lane, undivided minor arterial, a daily roadway capacity of 12,000 vehicles per segment was used in the analysis. Table 5.9-1 summarizes the level of service definitions applied to the analysis of the 13 roadway segments.

The County of Los Angeles and City of Lancaster consider LOS C as the minimum acceptable level of service for daily traffic analysis.

Table 5.9-3 summarizes the V/C ratios and corresponding levels of service for the 13 analyzed roadway segments. As can be seen from Table 5.9-3, all segments evaluated currently operate at acceptable levels of service (LOS A) during a typical weekday.

TABLE 5.9-2
INTERSECTION PEAK HOUR LEVELS OF SERVICE
EXISTING CONDITIONS

INTERSECTION [a]	AM PEAK		PM PEAK	
	V/C	LOS	V/C	LOS
1. Avenue F & SR-14 SB Ramps	0.11	A	0.13	A
2. Avenue F & SR-14 NB Ramps	0.13	A	0.18	A
3. Avenue F & Division Street	0.17	A	0.18	A
4. Avenue F & 10th Street East	0.16	A	0.18	A
5. Avenue G & SR-14 SB Ramps	0.15	A	0.16	A
6. Avenue G & & SR-14 NB Ramps	0.14	A	0.15	A
7. Avenue G & Sierra Highway	0.30	A	0.39	A
8. Avenue G & Division Street	0.26	A	0.25	A
9. Avenue G & 10th Street East	0.18	A	0.24	A
10 Avenue H & SR-14 SB Ramps	0.17	A	0.19	A
11 Avenue H & SR-14 NB Ramps	0.17	A	0.19	A
12 Avenue H & Sierra Highway	0.23	A	0.32	A
13 Avenue H & Division Street	0.22	A	0.23	A

Note:
[a] All analyzed intersections are currently stop-controlled. Based upon County of Los Angeles traffic study guidelines, th intersections were analyzed as if they were signalized.

TABLE 5.9-3
EXISTING ROADWAY LEVELS OF SERVICE

ROADWAY SEGMENT	ADT	V/C [a]	LOS
1. Avenue F east of SR-14 NB Ramps	1,700	0.14	A
2. Avenue F east of Division Street	338	0.03	A
3. Avenue G east of SR-14 NB Ramps	2,000	0.17	A
4. Avenue G east of Sierra Highway	2,243	0.19	A
5. Avenue G east of Division Street	1,143	0.10	A
6. Avenue H east of SR-14 NB Ramps	2,060	0.17	A
7. Avenue H east of Division Street	667	0.06	A
8. Sierra Highway north of Avenue G	4,718	0.39	A
9. Sierra Highway south of Avenue G	4,655	0.39	A
10. Division Street north of Avenue G	1,967	0.16	A
11. Division Street south of Avenue G	2,038	0.17	A
12. 10th Street East north of Avenue F	1,163	0.10	A
13. 10th Street East south of Avenue F	1,588	0.13	A

Note:
[a] Roadway Capacity = 12,000 vehicles per segment.

5.9.2 THRESHOLDS OF SIGNIFICANCE

In order to provide a quantitative basis for determining the significant traffic impact at a specific location, it was necessary to establish the criteria to be used in the analysis. Based upon Los Angeles County traffic study guidelines, the project is considered to have a significant impact if the following criteria are met:

- The project-related increase in the V/C ratio is equal to or exceeds 0.01.
- Traffic conditions with the project are projected to operate at LOS D and V/C equal to or greater than 0.85.

5.9.3 IMPACTS

5.9.3.1 PROJECT TRAFFIC

In order to determine potential traffic impacts of the project on the surrounding street system, it was first necessary to develop forecasts of future increases in traffic due to the project. The following sections discuss project traffic generation, distribution, and assignment on the street network.

5.9.3.1.1 Project Traffic Generation

As indicated, the proposed project includes the expansion of the existing LLRC which would increase current refuse disposal operations from about 600 tons per day to 1,700 tons per day in the year 2010. Based upon operating data at the existing site and the general trend in the waste management industry towards using larger transfer trucks, the LLRC staff anticipate that a net number of 91 refuse-hauling vehicles and 11 employees will be required by the year 2010. The LLRC staff also anticipate that peak activity at the facility would occur outside of the typical morning and afternoon peak hours of adjacent street traffic (i.e., 7:30 - 8:30 a.m., 5:00 - 6:00 p.m.).

Trip generation estimates for development projects are normally calculated using standard rates provided in *Trip Generation, 5th Edition* (Institute of Transportation Engineers, 1991). However, it does not adequately address the proposed land use for the project. Therefore, it was necessary to develop project trip rates based upon empirical data. Information was obtained from the existing facility to derive these trip rates. Appendix G outlines the assumptions and steps in deriving project trip rates, and Table 5.9-4 summarizes the resulting trip generation estimates for the project.

All refuse-hauling vehicle trips were all assumed to be truck trips and multiplied by 2.0 in order to convert them to Passenger Car Equivalents (PCE). This adjustment is made in accordance with County of Los Angeles traffic study guidelines and produces more conservative estimates of project trip generation. All employee trips were assumed to be made in passenger cars.

As indicated in Table 5.9-4, the proposed project is expected to generate approximately 400 daily trips, of which 35 trips are expected to occur during the morning commuter peak hour and 55 trips during the afternoon commuter peak hour.

5.9.3.1.2 Project Traffic Distribution and Assignment

The geographic distribution of traffic generated by a development such as the proposed project is dependent upon several factors. These factors include the geographic distribution of trip destinations; the location of site access points in relation to the surrounding street system; the level of congestion on the local and regional access routes; and the physical characteristics of the street system. The distribution pattern used in this study was based upon the anticipated service areas for the project, which are Lancaster/Palmdale, Quartz Hill, Antelope Acres, Lake Los Angeles, Pear Blossom, Edwards Air Force Base (EAFB), Acton, Wrightwood, and Gorman.

TABLE 5.9-4
PROJECT TRIP GENERATION ESTIMATES

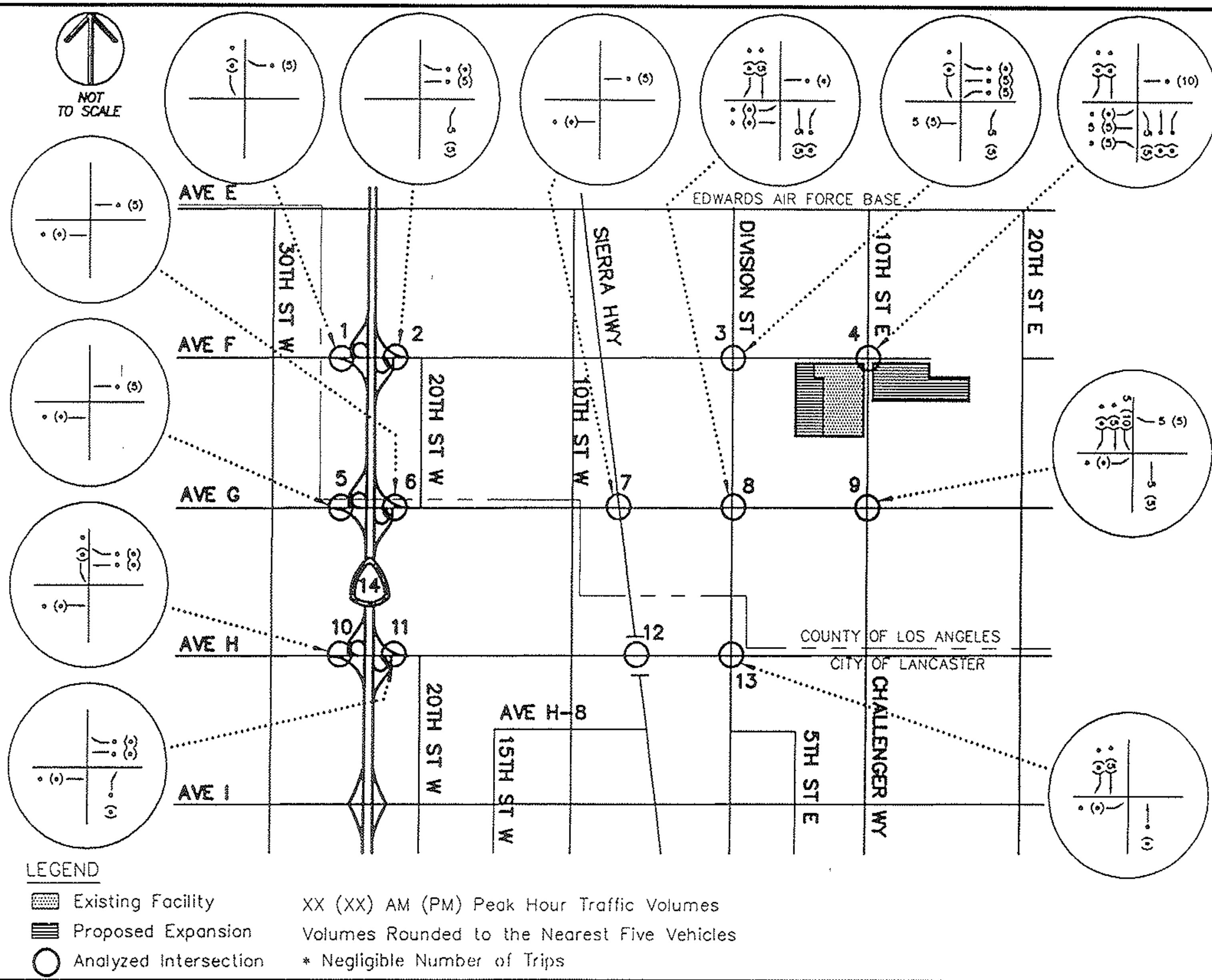
Project Component	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Truck-related PCE Trips	364	20	13	33	20	24	44
Employee Trips	35	2	0	2	2	9	11
Total Trips	**399**	**22**	**13**	**35**	**22**	**33**	**55**

As discussed previously, long-range planning efforts include the extension of Avenue F between Sierra Highway and Division Street. This roadway extension would make Avenue F the primary access route between the Antelope Valley Freeway (SR-14) and the project. Since this is a long-range plan, its implementation is not certain. Therefore, traffic conditions without the proposed extension would need to be evaluated. Due to this, two distribution patterns were applied to the project: one with the Avenue F extension, and one without the planned connection.

The traffic expected to be generated by the proposed project was assigned to the local street network using the trip generation estimates and the distribution patterns described above. Figure 5.9-3 illustrates the resulting project-generated traffic volumes at the analyzed intersections assuming the implementation of the Avenue F planned extension. Figure 5.9-4 illustrates the peak hour project trips on the existing roadway network (i.e., without the Avenue F extension).

5.9.3.2 EXISTING + AMBIENT GROWTH (YEAR 2010)

Based upon information from the County of Los Angeles and the City of Lancaster staff, the background traffic in the study area has been estimated to increase at a rate of two percent per year. Future increases in background traffic due to regional development are expected to continue at the same rate. By assuming that the project is to be completed in year 2010, the existing traffic volumes were increased by 28 percent

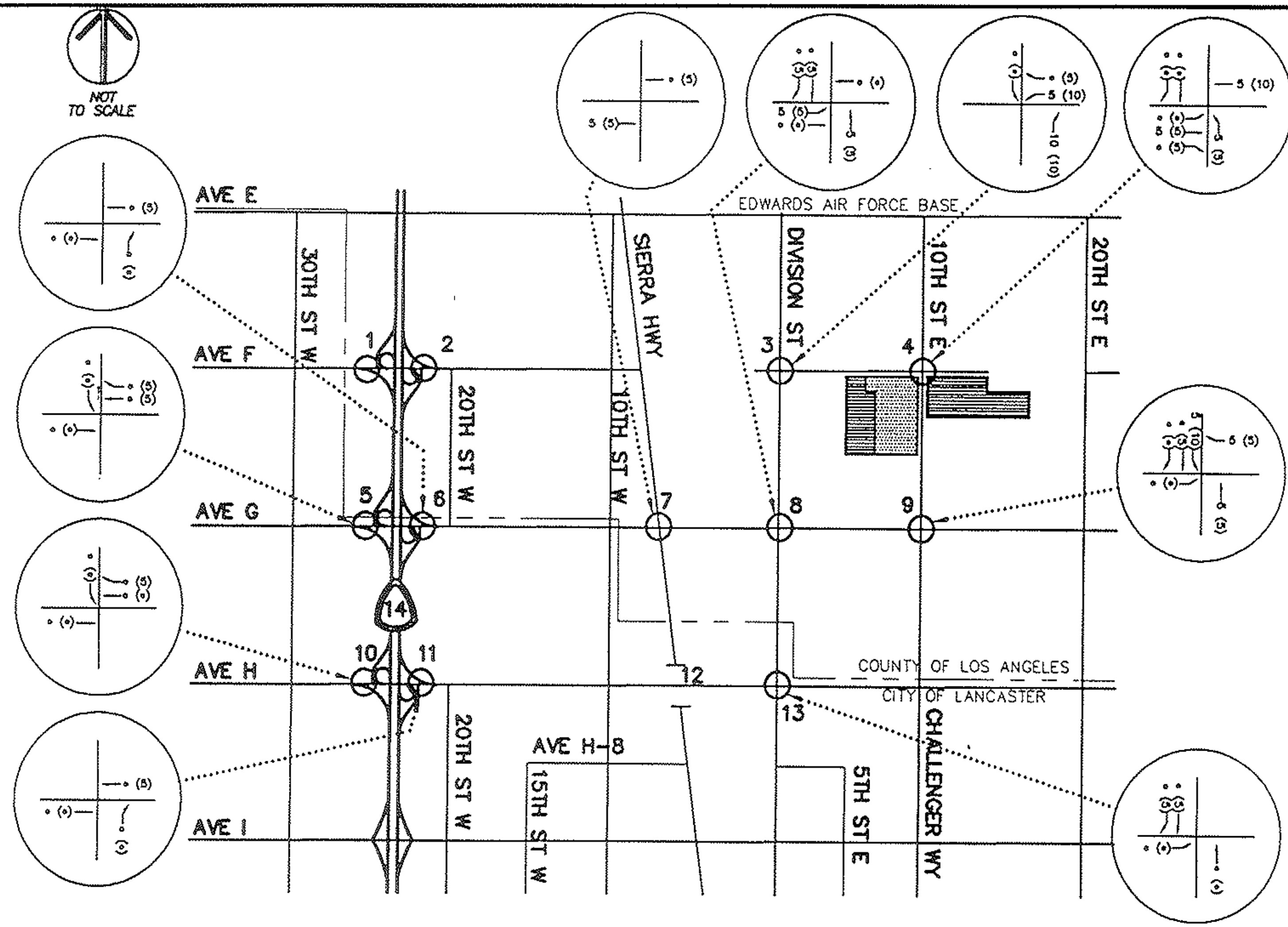


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9–3

PROJECT-GENERATED PEAK HOUR TRAFFIC VOLUMES (WITH AVENUE F EXTENSION)

Source: DKS Associates Traffic Impact Study, 1996



LEGEND

- Existing Facility
- Proposed Expansion
- Analyzed Intersection

XX (XX) AM (PM) Peak Hour Traffic Volumes
Volumes Rounded to the Nearest Five Vehicles
* Negligible Number of Trips

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9–4

PROJECT-GENERATED PEAK HOUR TRAFFIC VOLUMES (WITHOUT AVENUE F EXTENSION)

Source: DKS Associates Traffic Impact Study, 1996

to reflect areawide regional growth in traffic. It should be noted that the annual growth rate of two percent used for this analysis is twice as much as what is projected in the Congestion Management Program for Los Angeles County.

Figure 5.9-5 illustrates the peak hour traffic volumes at the analyzed intersections under the Existing + Ambient Growth (year 2010) conditions.

5.9.3.3 EXISTING + AMBIENT GROWTH (YEAR 2010) + PROJECT

The project-generated trips illustrated in Figures 5.9-3 and 5.9-4 were added to the Existing + Ambient Growth (year 2010) traffic volumes (shown in Figure 5.9-5) to determine the peak hour traffic volumes with the project.

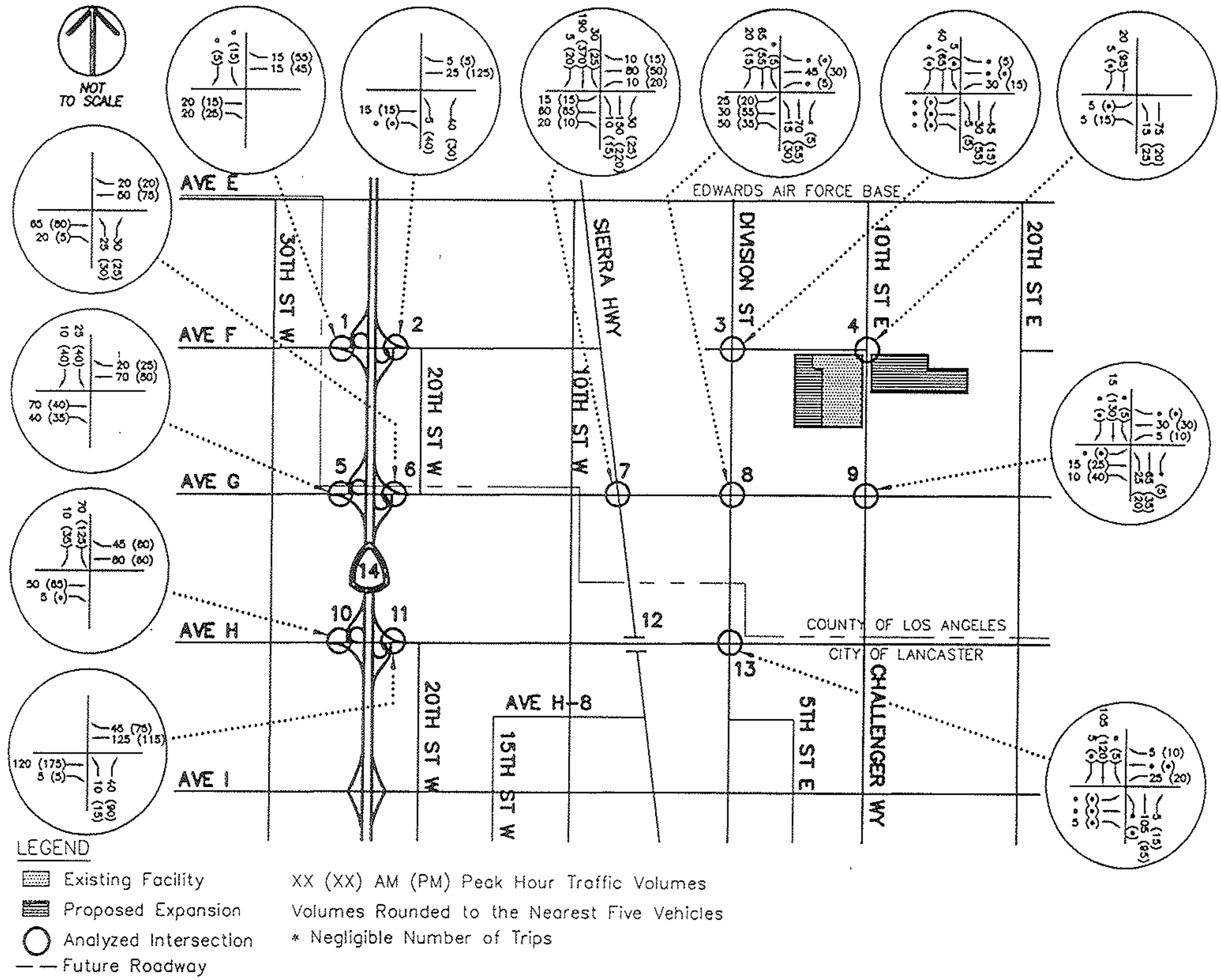
Figures 5.9-6 and 5.9-7 present the peak hour traffic volumes under Existing + Ambient Growth (year 2010) + Project conditions with and without the Avenue F extension, respectively.

5.9.3.4 TRAFFIC IMPACT ANALYSIS

A comparison of traffic conditions with and without the project at each of the analyzed intersections and roadway segments was performed to determine the incremental effect of the project on future traffic conditions. Detailed calculations of the levels of service are included in Appendix G of this report.

5.9.3.4.1 Existing + Ambient Growth (Year 2010) Conditions

The projected Existing + Ambient Growth (year 2010) peak hour traffic volumes were analyzed to determine the V/C ratio and level of service for each of the analyzed intersections. Table 5.9-5 indicates that all of the intersections are projected to operate at excellent levels of service (LOS A) during both peak hours.

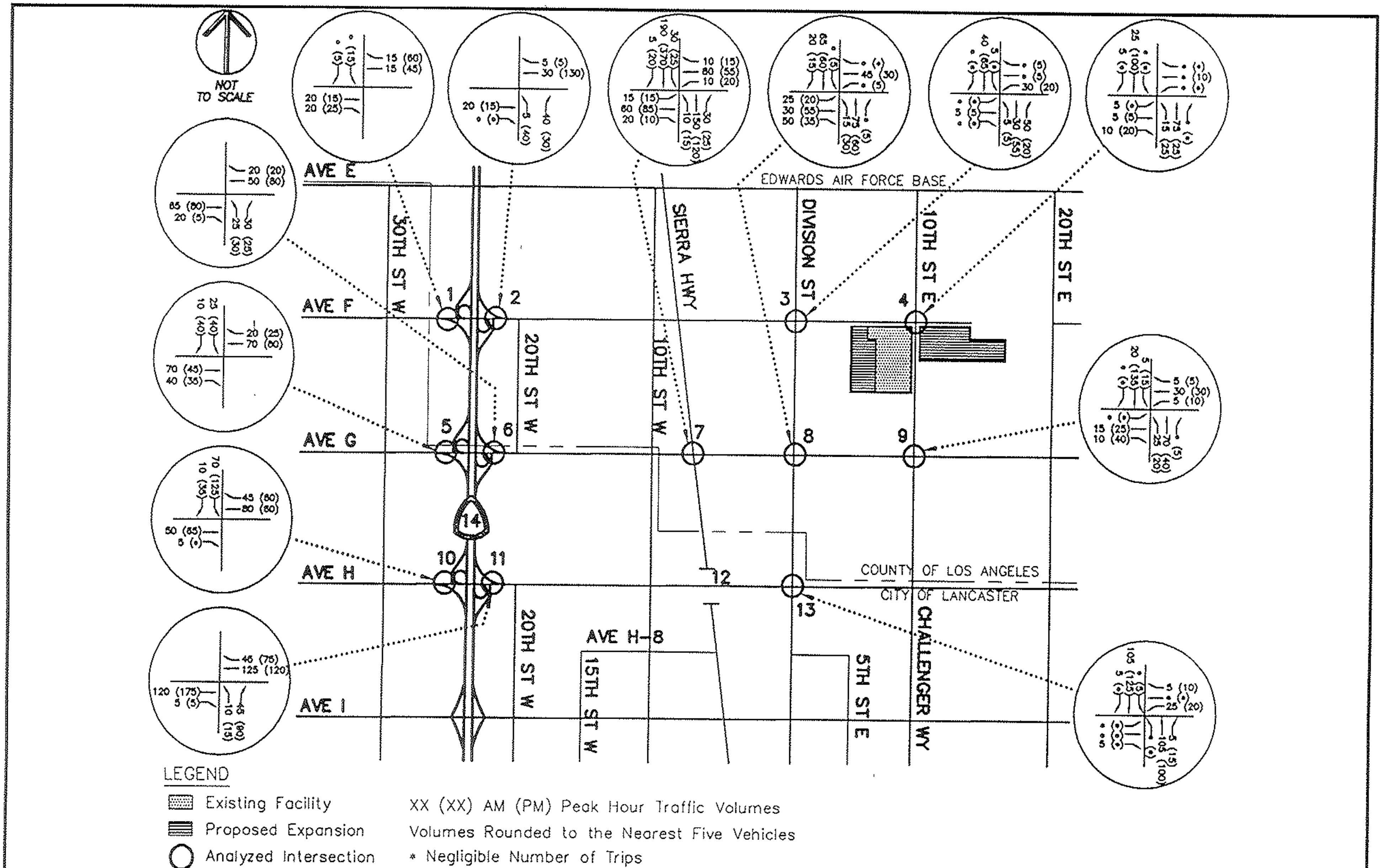


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9-5

EXISTING + AMBIENT GROWTH (2010) PEAK HOUR TRAFFIC VOLUMES

Source: DKS Associates Traffic Impact Study, 1996

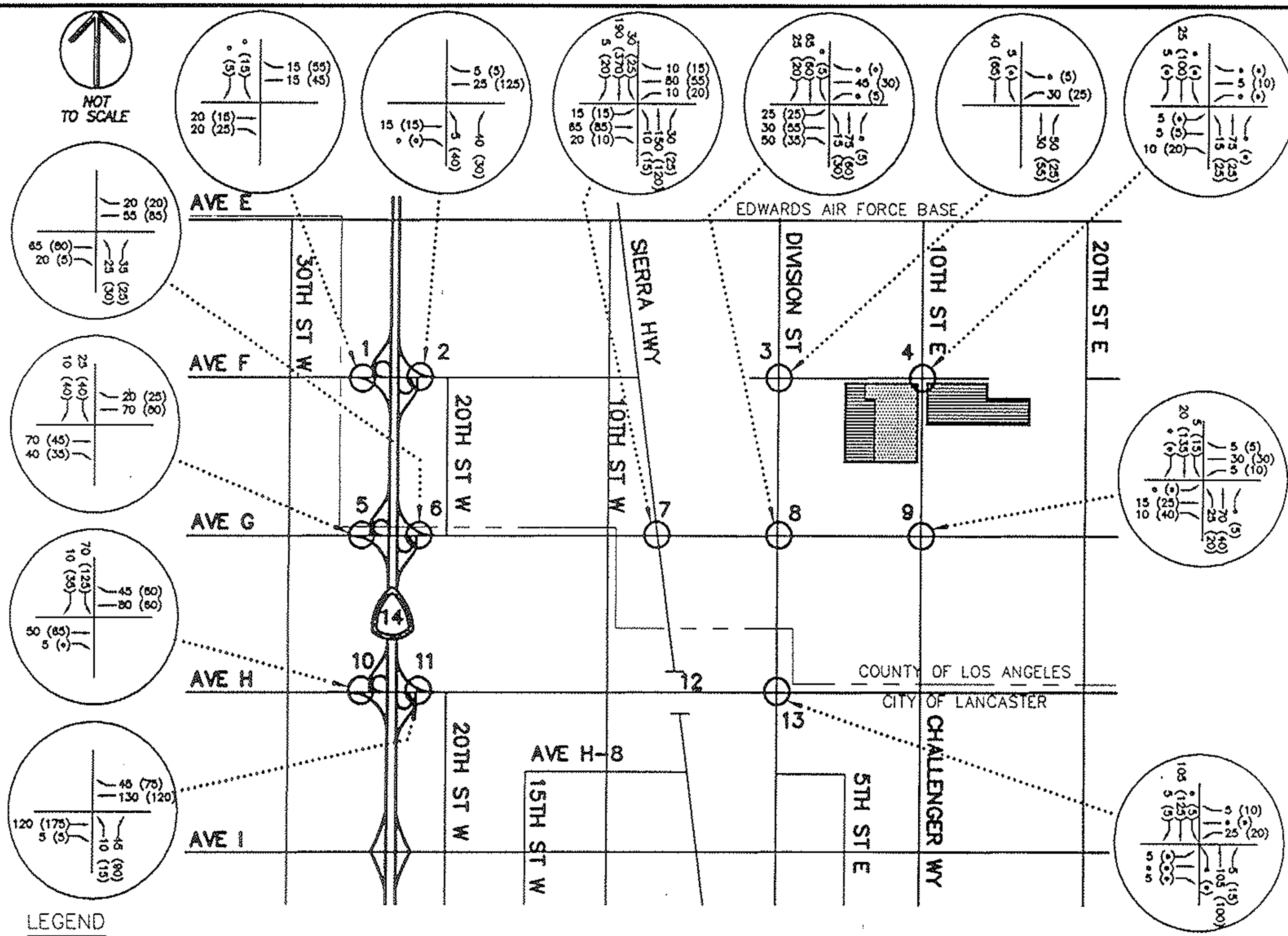


LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9–6

EXISTING + AMBIENT GROWTH (2010) PEAK HOUR TRAFFIC VOLUMES (WITH AVENUE F EXTENSION)

Source: DKS Associates Traffic Impact Study, 1996



LEGEND

- Existing Facility
- Proposed Expansion
- Analyzed Intersection

XX (XX) AM (PM) Peak Hour Traffic Volumes

Volumes Rounded to the Nearest Five Vehicles

* Negligible Number of Trips

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.9–7

EXISTING + AMBIENT GROWTH (2010) PEAK HOUR TRAFFIC VOLUMES (WITHOUT AVENUE F EXTENSION)

Source: DKS Associates Traffic Impact Study, 1996

The roadway segment traffic volumes and levels of service under the Existing + Ambient Growth scenario are summarized in Table 5.9-6. As can be seen from Table 5.9-6, the resulting levels of service at all of the analyzed roadway segments are LOS A.

5.9.3.4.2 Existing + Ambient Growth (2010) + Project Conditions

Tables 5.9-5 and 5.9-6 also summarize the results of the analysis of future conditions with the addition of the project. As indicated in Tables 5.9-5 and 5.9-6, traffic generated by the project would not cause a change in the reported level of service at any of the analyzed intersections and roadway segments (LOS A at all of the analyzed locations).

5.9.3.5 TRAFFIC SIGNAL WARRANTS

Traffic signal warrant analysis was conducted at all of the analyzed intersections. Traffic signal warrants from the California Department of Transportation *Traffic Manual* (December 1986) and the U.S. Department of Transportation, Federal Highway Administration *Manual on Uniform Traffic Control Devices* (March 1986) were used to evaluate the need for traffic signals at the stop-controlled intersections. It was determined from the analysis that none of the study locations met the traffic signal warrants.

5.9.3.6 PAVEMENT ANALYSIS

Pavement analysis was conducted along the roadway segments adjacent to the project site to determine whether the additional trucks accessing the site would have a significant/detrimental impact on the pavement conditions. The four roadway segments analyzed are:

- Avenue F between Division Street and 10th Street East
- Avenue G between Division Street and 10th Street East

TABLE 5.9-5
INTERSECTION PEAK HOUR LEVELS OF SERVICE
EXISTING + AMBIENT GROWTH (YEAR 2010) + PROJECT

Intersection [a]	Peak Hour	Existing + Ambient Growth (Year 2010)		Existing + Ambient + Project (w/ Avenue F Ext.)		Project Increase in V/C	Significant Project Impact	Existing + Ambient + Project (w/o Avenue F Ext.)		Project Increase in V/C	Significant Project Impact
		V/C	LOS	V/C	LOS			V/C	LOS		
1. Avenue F &	AM	0.11	A	0.11	A	0.00	NO	0.11	A	0.00	NO
SR-14 SB Ramps	PM	0.14	A	0.14	A	0.00	NO	0.14	A	0.00	NO
2. Avenue F &	AM	0.14	A	0.14	A	0.00	NO	0.14	A	0.00	NO
SR-14 NB Ramps	PM	0.21	A	0.21	A	0.00	NO	0.21	A	0.00	NO
3. Avenue F &	AM	0.20	A	0.20	A	0.00	NO	0.20	A	0.00	NO
Division Sttreet	PM	0.20	A	0.21	A	0.01	NO	0.21	A	0.01	NO
4. Avenue F &	AM	0.18	A	0.19	A	0.01	NO	0.19	A	0.01	NO
10th Street East	PM	0.20	A	0.21	A	0.01	NO	0.21	A	0.01	NO
5. Avenue G &	AM	0.16	A	0.16	A	0.00	NO	0.16	A	0.00	NO
SR-14 SB Ramps	PM	0.18	A	0.18	A	0.00	NO	0.18	A	0.00	NO
6. Avenue G &	AM	0.15	A	0.16	A	0.01	NO	0.16	A	0.01	NO
SR-14 NB Ramps	PM	0.17	A	0.17	A	0.00	NO	0.17	A	0.00	NO
7. Avenue G &	AM	0.35	A	0.35	A	0.00	NO	0.36	A	0.01	NO
Sierra Highway	PM	0.47	A	0.47	A	0.00	NO	0.47	A	0.00	NO
8. Avenue G &	AM	0.30	A	0.31	A	0.01	NO	0.31	A	0.01	NO
Division Street	PM	0.29	A	0.30	A	0.01	NO	0.30	A	0.01	NO
9. Avenue G &	AM	0.21	A	0.22	A	0.01	NO	0.22	A	0.01	NO
10th Street East	PM	0.28	A	0.30	A	0.02	NO	0.30	A	0.02	NO
10. Avenue H &	AM	0.19	A	0.19	A	0.00	NO	0.19	A	0.00	NO
SR-14 SB Ramps	PM	0.22	A	0.22	A	0.00	NO	0.22	A	0.00	NO
11. Avenue H &	AM	0.18	A	0.18	A	0.00	NO	0.19	A	0.01	NO
SR-14 NB Ramps	PM	0.22	A	0.22	A	0.00	NO	0.22	A	0.00	NO
12. Avenue H &	AM	[b]		[b]		-	-	[b]		-	-
Sierra Highway	PM	[b]		[b]		-	-	[b]		-	-
13. Avenue H &	AM	0.26	A	0.26	A	0.00	NO	0.26	A	0.00	NO
Division Street	PM	0.27	A	0.27	A	0.00	NO	0.27	A	0.00	NO

Notes:
[a] All analyzed intersections are currently stop-controlled. Based upon County of Los Angeles traffic study guidelines, these intersections were analyzed as if they were signalized.
[b] Grade-separated under future conditions.

TABLE 5.9-6
ROADWAY LEVELS OF SERVICE
EXISTING + AMBIENT GROWTH (YEAR 2010) + PROJECT

Roadway Segment	Existing + Ambient Growth (2010)			Project Only (w/ Ave F Ext.) ADT	Existing + Ambient Growth + Project (w/ Ave F Ext.)				Project Only (w/o Ave F Ext.) ADT	Existing + Ambient Growth + Project (w/ Ave F Ext.)			
	ADT	V/C [a]	LOS		ADT	V/C [a]	LOS	V/C Inc		ADT	V/C [a]	LOS	V/C Inc
1 Avenue F east of SR-14 NB Ramps	2,176	0.18	A	80	2,256	0.19	A	0.01	0	2,176	0.18	A	0.00
2 Avenue F east of Division Street	432	0.04	A	200	632	0.05	A	0.02	200	632	0.05	A	0.02
3 Avenue G east of SR-14 NB Ramps	2,560	0.21	A	40	2,600	0.22	A	0.00	80	2,640	0.22	A	0.01
4 Avenue G east of Sierra Highway	2,871	0.24	A	40	2,911	0.24	A	0.00	80	2,951	0.25	A	0.01
5 Avenue G east of Division Street	1,463	0.12	A	0	1,463	0.12	A	0.00	0	1,463	0.12	A	0.00
6 Avenue H east of SR-14 NB Ramps	2,637	0.22	A	20	2,657	0.22	A	0.00	40	2,677	0.22	A	0.00
7 Avenue H east of Division Street	853	0.07	A	0	853	0.07	A	0.00	0	853	0.07	A	0.00
8 Sierra Highway north of Avenue G	6,039	0.50	A	0	6,039	0.50	A	0.00	0	6,039	0.50	A	0.00
9 Sierra Highway south of Avenue G	5,958	0.50	A	0	5,958	0.50	A	0.00	0	5,958	0.50	A	0.00
10 Division Street north of Avenue G	2,517	0.21	A	100	2,617	0.22	A	0.01	160	2,677	0.22	A	0.01
11 Division Street south of Avenue G	2,608	0.22	A	60	2,668	0.22	A	0.01	80	2,688	0.22	A	0.01
12 10th Street East north of Avenue F	1,488	0.12	A	20	1,508	0.13	A	0.00	20	1,508	0.13	A	0.00
13 10th Street East south of Avenue F	2,032	0.17	A	180	2,212	0.18	A	0.02	180	2,212	0.18	A	0.02

Note:
[a] Roadway Capacity = 12,000 vehicles per segment

- 10th Street East between Avenue E and Avenue F
- 10th Street East between Avenue F and Avenue G

The California Department of Transportation *Highway Design Manual* (Fourth Edition, July 1990) was utilized to assess potential impacts of the project-generated truck traffic on the surrounding street system. Truck counts were conducted on November 19-21, 1996. A growth factor of 28 percent was applied to these existing volumes in order to project Existing + Ambient Growth (year 2010) and year 2010 Cumulative Base conditions. The Existing + Ambient Growth truck projections are the same as Cumulative Base since there are no truck trips added by specific cumulative projects. All project-generated trips were assumed to be trucks, and were added to the Existing + Ambient Growth and Cumulative Base truck volumes in order to forecast conditions with the implementation of the expansion project.

Daily truck traffic was converted to 20-year Equivalent 18-kip Single Axle Loads (ESAL) by multiplying the truck volumes by an ESAL 20-year Constant value (i.e., 3,680 ESAL 20-year constant used, corresponding to three-axle trucks). The Traffic Index (TI) was then based upon the total 20-year ESAL calculated. Table 5.9-7 below summarizes the relationship between ESAL and the TI:

TABLE 5.9-7
ESAL VERSUS TRAFFIC INDEX (TI)

Total 20-Year ESAL	Traffic Index (TI)
4,710	
10,900	5.0
23,500	5.5
47,300	6.0
89,800	6.5
164,000	7.0
288,000	7.5
487,000	8.0
798,000	8.5
1,270,000	9.0
1,980,000	9.5

Source: Caltrans, Highway Design Manual (July 1990).

Table 5.9-8 summarizes the results of the pavement analysis. Based upon conversations with the County of Los Angeles staff, the four roadway segments analyzed were designed for a TI of 6.0. As can be seen from Table 5.9-8, the existing truck volumes on these roadways result in TI's which are higher than the design TI of 6.0. These results indicate that the existing pavement design cannot adequately accommodate truck traffic in the area (with or without the implementation of the expansion project). Addition of project-generated truck traffic will further aggravate this existing inadequacy. Therefore, the project should be required to contribute towards the reconstruction of the pavement and thickening of the base/subbase.

Table 5.9-8 also shows that the TI increased between conditions without the project, to conditions with the proposed expansion on two of the four analyzed roadway segments. This would constitute project significant impacts at these two locations. The two impacted segments are:

- Avenue F between Division Street and 10th Street East
- 10th Street East between Avenue F and Avenue G

5.9.4 MITIGATION MEASURES

A total of 13 intersections and 13 roadway segments were analyzed in this study. All of the study locations are currently operating at satisfactory levels of service (i.e., LOS A) during the analyzed time periods (daily, morning and afternoon peak hour). Under all future (Year 2010) scenarios: Existing + Ambient Growth (with and without the project), all study locations are projected to operate at an acceptable level of service (i.e., LOS A) during the analyzed time periods. Using criteria established for this study, net traffic generated by the proposed project would not have a significant impact at any of the analyzed locations. Traffic signal warrants were not met at any of the analyzed intersections.

TABLE 5.9-8
PAVEMENT ANALYSIS

Roadway Segment	Existing (Year 1996)			Existing + Ambient Growth			Existing + Ambient + Project (w/ Ave F)			Existing + Ambient + Project (w/o Ave F)			Cumulative Base (Year 2010)			Cumulative + Project (w/ Ave F)			Cumulative + Project (w/o Ave F)		
	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI	Daily # of Trucks	20 yr Total ESAL [a]	TI
1. Avenue F East of Division St.	81	299,000	8.0	104	382,720	8.0	204	750,720	8.5	204	750,720	8.5	104	382,720	8.0	204	750,720	8.5	204	750,720	8.5
2. Avenue G East of Division St.	57	210,275	7.5	73	269,152	7.5	73	269,152	7.5	73	269,152	7.5	73	269,152	7.5	73	269,152	7.5	73	269,152	7.5
3. 10th Street East North of Avenue F	0	-	na	0	-	na	10	36,800	6.0	10	36,800	6.0	0	-	na	10	36,800	6.0	10	36,800	6.0
4. 10th Street East South of Avenue F	50	184,000	7.5	64	235,520	7.5	154	566,720	8.5	154	566,720	8.5	64	235,520	7.5	154	566,720	8.5	154	566,720	8.5

Note:
[a] As contained in the Caltrans, ***Highway Design Manual*** July (1990), the ESAL 20-year Constant used was 3.680 (corresponding to 3-axle trucks).

However, the project does significantly impact the pavement structure of the following two segments:

- Avenue F between Division Street and 10th Street East
- 10th Street East between Avenue F and Avenue G

The results of the analysis indicate that the existing pavement design cannot adequately accommodate truck traffic in the area (with or without the implementation of the expansion project). Addition of project-generated truck traffic will further aggravate this existing inadequacy. To mitigate this impact, the project will contribute on a fair share pro-rata basis to the City of Lancaster for reconstruction of the pavement and thickening of the base/subbase to accommodate truck traffic.

5.10 ENVIRONMENTAL SAFETY

5.10.1 EXISTING CONDITIONS

This section discusses elements related to environmental safety such as hazardous waste; other issues such as groundwater contamination and flooding are addressed in the Water Quality and Flood sections of this EIR. Impacts related to methane gas emissions are discussed in the Air Quality section of this EIR.

5.10.1.1 SETTING

Disposal of hazardous waste is not permitted at the LLRC as it is a Class III facility. Under the terms of the SWFP, the site is prohibited from accepting liquids, hazardous and untreated medical wastes. This is in accordance with the WDRs issued by the RWQCB.

It is recognized, however, that some household hazardous materials will enter the waste material that is brought to the landfill. This situation generally occurs when refuse is received from households which could include such materials as paint and paint thinner, used motor oil, pesticide and herbicide containers (empty containers less than one gallon in size are considered to be exempt from hazardous waste regulations), lye, bleach, and ammonia. 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 be contained in 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.

Studies have indicated that municipal waste generally contains extremely small quantities of household hazardous materials and therefore the SWRCB and the State Department of Health Services regard the hazards presented by disposal of residential refuse in sanitary landfills as insignificant (Mission Canyon Landfill Draft Environmental Impact Report, The Sanitation District of Los Angeles County, 1980). 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.

5.10.2 THRESHOLDS OF SIGNIFICANCE

Project impacts associated with environmental safety would be considered potentially significant if the proposed project would:

- Create a potential public health hazard or include the use, production, or disposal of materials which pose a hazard to people or animal or plant populations in the area affected.

5.10.3 IMPACTS

CEQA identifies a significant adverse impact as a potential human health or public safety hazard that involves the use, production, or disposal of materials that pose a hazard to people, animal, or plant populations. For purposes of this EIR, the potential for significant adverse effects would occur if project development caused disposal of waste inconsistent with the LACoSWMP and statewide statutory and regulatory standards established by the CIWMB.

Hazardous waste/materials will not be accepted at the landfill facility; however, insignificant quantities of household 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 landfill. These are potentially significant impacts.

Disposal of hazardous waste/materials at the landfill could result in exposure of site personnel and site users (general public and commercial haulers) to potentially toxic or cancer-causing materials. In addition, hazardous waste/materials placed in the landfill could contribute toxic contaminants to leachate generated in refuse pile, which could create problems with leachate treatment and disposal.

5.10.4 MITIGATION MEASURES

* There are prominently displayed signs outside the existing facility that specify the type of facility and what wastes are accepted. There is also a sign that specifies that hazardous materials, liquids, and special wastes are not accepted. Disposal of such wastes is an unlawful act subject to loss of dumping privileges and prosecution.

The LLRC accepts no hazardous or liquid waste. The following summary outlines a three part system that has been developed to exclude hazardous wastes from refuse that comes to the landfill.

The first of three parts is the Special Waste Identification Plan (SWIP). The purpose of the SWIP is to identify potential sources of hazardous wastes. By using a combination of individual customer waste stream surveys, personal customer contact, and a tracking system, hazardous waste is excluded from the waste stream before it reaches the landfill.

The second part of the system is the Hazardous Waste Exclusion Program (HWEP). The HWEP is essentially a load-checking program. It is designed to enable the LLRC

* Measures required per current Federal, State and Local landfill regulations pertaining to operations.

to identify and remove hazardous waste from individually chosen loads while the driver of the particular vehicle is still on site. Loads are randomly chosen for inspection which discourages landfill users from attempting to hide hazardous waste in their non-hazardous refuse. The program includes documentation of all load-checks, noting all rejected waste returned to the respective drivers.

The third part of the system addresses activities to be taken in the event of the discovery of hazardous waste in the refuse on-site when a driver is not present and a generator is unknown. It is comprised of the Hazardous Waste Storage Area (HWSA), on-site storage for less than 90 days, and removal by a licensed transporter for proper disposal. When hazardous waste with no identifiable owner is discovered at the landfill, it is removed from the working face by trained spotters and deposited in the HWSA. A designated employee logs the addition to the HWSA inventory and the HWSA policies are activated.

5.11 VISUAL QUALITY

5.11.1 ENVIRONMENTAL SETTING

The proposed LLRC area is located adjacent to the existing LLRC and includes two separate parcels. The two separate parcels that form the expansion areas are defined in the Visual Quality Section as the EEA and the WEA. The EEA borders 10th Street East for approximately 1,000 feet starting at Avenue F moving south and then extends eastward for one-half mile. The EEA is approximately 112 acres. The WEA is bordered by the existing landfill borrow site area on the north side and by the existing fill area on the east edge. The WEA is approximately 62 acres.

The elevation of the existing landfill and expansion areas is approximately 2,300 feet amsl. The proposed ultimate height of the existing LLRC grading configuration varies between two highpoints of 2420 and 2400. A high point of 2405 is proposed for the WEA. The EEA incorporates a single high point of 2420 and two ridgeline highpoints of 2400.

The expansion areas are currently a mix of disturbed and undisturbed native desert vegetation, ongoing related landfill activities, and recreational activities. The EEA is currently used as a remote control/model airplane fly zone. The facility includes an unimproved access road, denuded areas for parking and fire safety, an asphalt landing strip and a metal overhead shade structure. The WEA is bordered by an unimproved access road and has been disturbed by current landfill operations such as a borrow site.

The immediate regional setting of the area includes mostly undisturbed open space. Land uses to the north of the site include undisturbed open space of EAFB. To the east are rural residential home sites and undisturbed native vegetation.

Areas within a two mile vicinity to the south include rural residential and disturbed and undisturbed natural areas. Areas beyond two miles to the south are developed as high density residential and commercial/industrial. The closest high density development (mobile home park) is one and one-half miles to the south on 10th Street East. The land uses to the west are mainly rural residential with the exception of small commercial and light industrial businesses along Division Street, approximately one-half mile west of the project site. The Sierra Highway corridor is one and one-half miles west of the project site and is currently undeveloped.

The City of Lancaster General Plan Proposed Trail System Section includes a rural trail to be located parallel to and east of 10th Street East from Avenue H north to Avenue E. As currently proposed, the trail may bisect the EEA. In addition, a bikeway within the street right-of-way is proposed for Division Street from the City of Palmdale north to Avenue E.

5.11.2 VISUAL SETTING

The project site is regionally situated within the basin of the Antelope Valley High Desert. The basin is a predominantly flat expansive topography surrounded by distant hills and mountains that naturally and visually define the basin. The basin is vegetated with low shrubs or bushes of a gray hue. Occasional dark green vegetative species are relatively rare and occur randomly such as Yucca brevifolia - Joshua Tree. True trees are absent in the area.

Significant natural topographic features such as rock outcrops, hills and or ridges do not occur in or around the project site area. Low sandy washes draining to the northwest disrupt the continuity of the desert vegetation.

The existing landfill area is currently visible from portions of the basin where the line-of-sight to the landfill is not broken by visual barriers. The expansion areas will be similarly visible from areas in the basin. Visibility to the existing landfill within developed areas is buffered by built structures higher than eye level. The same is true for visibility to the expansion areas.

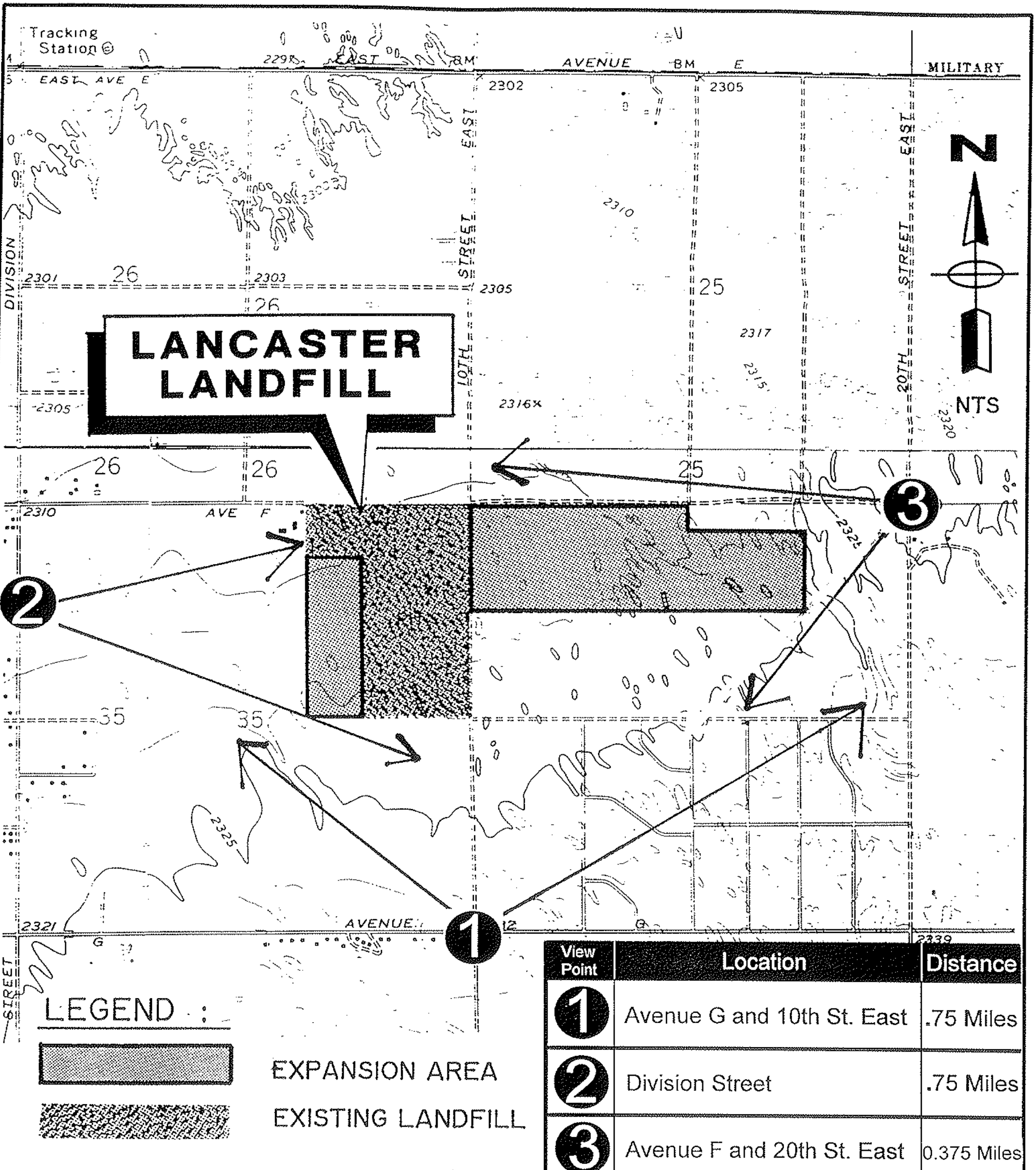
5.11.3 IMPACTS

CEQA defines a significant adverse visual impact as one which has a substantial and demonstrable negative aesthetic effect. For purposes of this EIR, the criteria that are used to define such an impact are substantial obstruction of: 1) unique environmental or manmade visual features; 2) views from important public gathering places; or 3) views from a County Scenic Highway.

5.11.3.1 VIEWPOINT SETTING

Visual representation of the expansion areas has been provided in Figures 5.11-1 through 5.11-4. Figure 5.11-1 provides an index to the three individual viewpoints (local roadways) depicted in Figures 5.11-2 through 5.11-4. The locations of the viewpoints were selected because of their proximity to the site and their view. Local roadways allow daily public visibility of the expansion areas. The roadways are not scenic highways and are not being considered for scenic highway designation. State Route 14 is designated as a scenic highway, but there are no views of the project site from any point on this highway.

The existing landfill facility and the expansion areas are both visible from the three viewpoints. The land form of the expansion areas will be similar to the existing landfill by becoming a low linear form with soft undulations created by various highpoints, subridges and gradual sideslopes. These undulating land forms will be typical from all view locations and will convey a similar appearance as the background hills and mountains surrounding the basin.



View Point	Location	Distance
1	Avenue G and 10th St. East	.75 Miles
2	Division Street	.75 Miles
3	Avenue F and 20th St. East	0.375 Miles

LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 5.11-1

VIEW POINT LOCATION MAP

5.11-2
3
4

5.11.3.2 VIEWPOINTS

Visibility of the expansion areas from the east and west directions is substantially reduced by the existing landfill area. From these directions, the existing landfill either absorbs an expansion area in the foreground or buffers an expansion area behind. There is no increase in the visible size of the landfill from these directions, and, hence, there would be no increased adverse visual impact. Views from the north and south will include the existing landfill and the expansion areas. The low undulating land form will be visible for the existing landfill and the expansion areas. The view will be adversely affected due to the increase in landfill area but would not be significant because of the relatively minor incremental impact beyond the visual impact of the existing landfill and because no natural features exist that will be negatively impacted.

Figure 5.11-2, Viewpoint 1 looks north from Avenue G and 10th Street East to the existing landfill and expansion areas. The foreground is comprised of undisturbed native vegetation. The middleground is visible only by the impact of the existing landfill. The background consists of the distant hills at the north edge of the Antelope Valley. The proposed expansion areas lie in the same visible area as the existing landfill and at the ultimate height, the expansion areas would be equal to the existing landfill. From Viewpoint 1, the visual impact of the proposed expansion areas and existing landfill may be considered adverse due to the increased size of the facility, however, the impact may not be considered significant since the existing landfill is currently visible and no significant natural features are adversely effected.

Figure 5.11-3, Viewpoint 2 looks east from Division Street to the western perimeter of the existing landfill. The foreground includes native vegetation over level terrain. The background is intermittently visible from this viewpoint with distant hills and mountains. From this viewpoint, the WEA is visible in front of the existing landfill and is thereby absorbed into the existing landfill. The EEA is situated behind the existing landfill and is buffered entirely from view. Visual impacts due to the expansion areas are insignificant from this viewpoint.

Figure 5.11-4, Viewpoint 3 looks west from the unimproved road portions of Avenue F and 20th Street East approximately one-half mile from the eastern edge of the EEA. The visible foreground is again level terrain vegetated with undisturbed native vegetation. The existing landfill is seen in the middle ground and distant hills and mountains form the background.

From Viewpoint 3, the EEA is now visible in front of the existing landfill area whereas the WEA is buffered entirely by the existing landfill area. Again, due to the existing landfill, the visual impacts of the expansion areas are insignificant from this viewpoint.

5.11.4 TRAILS

The City of Lancaster General Plan Trail Element indicates that a rural trail is proposed extending parallel to 10th Street East and along the eastern perimeter of the existing landfill. The trail, as proposed, would bisect the EEA before termination at Avenue F. As currently proposed, the rural trail would be impacted by the existing landfill. Development of the EEA would also result in a need to relocate this section of the trail.

5.11.5 MITIGATION MEASURES

As currently proposed for closure, the project site is to be graded into an undulating natural landform and returned to a natural open space environment. The graded landform and the open space vegetative cover will provide substantial visual integration with surrounding open space areas.

Prior to final closure, interim visual mitigation measures will be implemented for ongoing operations. The interim measures are intended to provide visual buffering of landfill operations. Visual buffering will be achieved through the placement of a visual berm. As each new lift or cell is opened, a berm will be constructed along the perimeter of the landfill. The berm will buffer views of daily operations from adjacent residential areas and will be landscaped with an interim vegetative cover similar to the vegetative cover proposed for closure.

Since the proposed rural trail in the Lancaster General Plan Trail Element bisects the EEA, coordination between Waste Management of Lancaster, the County of Los Angeles Department of Parks and Recreation and Antelope Valley Trails, Recreation and Environmental Council (AVTREC) is required, to the extent that the proposed new trail would be beneficially relocated without a greater visual impact than what would occur with the current alignment.

SECTION 6.0

CUMULATIVE IMPACTS

6.0 CUMULATIVE IMPACTS

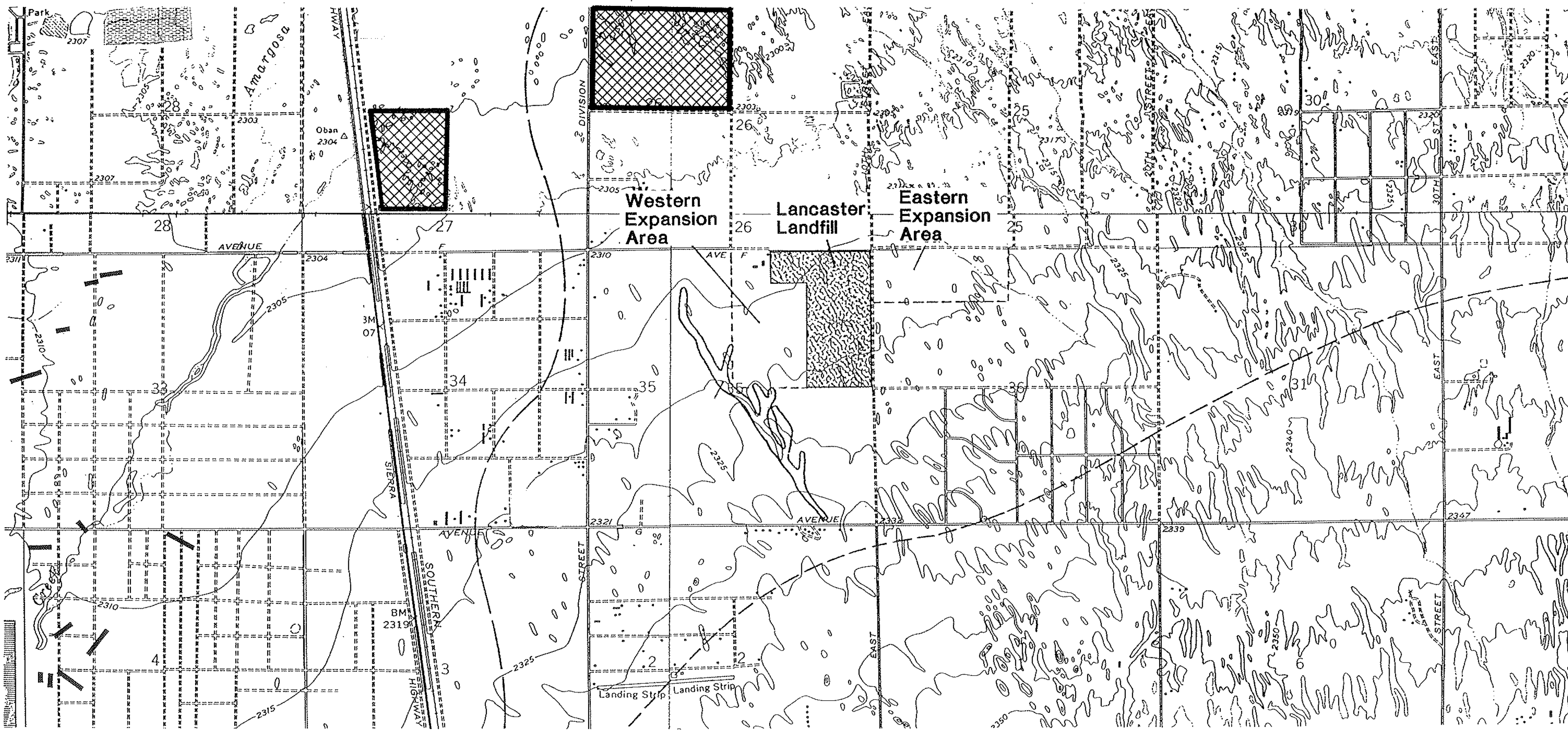
6.1 INTRODUCTION

CEQA defines cumulative impacts as two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts (State CEQA Guidelines, Section 15355). Accordingly, individual effects may be changes from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonable anticipated future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. As such, the impacts associated with the proposed expansion of the LLRC are analyzed in conjunction with the anticipated impacts associated with other development proposals in the project area.

The projects currently planned or proposed in the vicinity of the LLRC were identified through review of the Development Monitoring System (DMS) of the LACDRP (June 1994 and December 1996), and through discussions with the City of Lancaster (May 1994). A total of two planned projects were thus identified in the general vicinity of the LLRC (see Figure 6-1 for location) as described below:

1. County Case No. 92105, tract 51296, located on the southeast corner of Avenue E-8 and 8th Street West, consists of 16 single family lots on 81.9 acres. This project is still pending.

2. County Case No. 90372, tract 49681, located at the southeast corner of Division Street and Avenue E, consists of 23 single family lots on 112.6 acres. This project was approved on October 29, 1991 but has not been recorded.



5000 feet

Projected Residential Developments

LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 6–1

PLANNED OR PROPOSED PROJECTS IN THE VICINITY OF L.L.R.C.

Source: Geologic Associates Geology Report 1994

The cumulative impact project list includes only two single family residential projects with a sum total of 39 single family lots. The great majority of these - 23 - have been approved since 1991 but not constructed, most likely due to the recessionary economy. No industrial, commercial, or office space projects were identified in the general vicinity of the LLRC.

This section contains a description of the cumulative effects of the LLRC expansion and the projects described above pursuant to Section 15355 and 15730 of the CEQA guidelines. Significant cumulative impacts have been identified for air quality and noise. There are no cumulatively significant impacts related to geotechnical, flood hazard, fire hazard, water quality, biota, cultural and paleontological resources, traffic, environmental safety, and visual quality.

6.2 GEOTECHNICAL

Cumulative impacts related to geologic resources would be limited to the removal of native topsoils and the potential export of some excavated soil. Similar effects may be associated with the proposed residential developments, however, most projects typically strive for a balanced cut-and-fill grading. This impact would not be considered cumulatively significant because projects try to minimize export of soil owing to costs.

The proposed project, in conjunction with the proposed residential development projects, would not produce cumulatively significant effects associated with geologic hazards because such effects are site specific and require mitigation for project implementation. That is, potential impacts such as landsliding and seismicity hazards must be mitigated on a project-by-project basis using project designs to satisfy regulatory requirements.

6.3 FLOOD HAZARD

Increased runoff from development of previously vacant land has the potential to add incrementally to flooding impacts associated with local development. However, proper design of drainage facilities and coordination with other developments within the immediate watershed would mitigate these potential impacts to insignificance. The residential projects must demonstrate to the County that 25 to 50-year floodwaters will be accommodated by onsite drainage structures and the landfill must demonstrate that 100-year floodwaters will be accommodated; therefore, no significant cumulative surface water runoff/flooding impacts are expected.

6.4 FIRE HAZARD

Fire hazards associated with expansion of the LLRC are site-specific hazards only. Continued implementation of on-site mitigation measures will reduce potential fire hazard to a less than significant level.

Residential development in the vicinity of the landfill could cumulatively increase demand for fire protection services. Such increased demand is typically mitigated by payment of development fees for public services including police, fire and schools.

In summary, there are no cumulatively significant impacts regarding fire hazard or fire protection services associated with the expansion of the LLRC.

6.5 NOISE

Cumulative future noise levels will increase for some roadways over existing noise levels in the vicinity of the project. This is due to the relatively low amount of traffic currently in the area. The future noise increases over existing are projected to range between 0.2 and 5.9 dBA, and are all less than the 3 dBA threshold with the exception of one location. A noise increase of 5.9 dBA is projected to occur on Avenue F. However, the future traffic noise level along Avenue F is projected to be less than 65 CNEL, and therefore, the cumulative future noise increases over existing are not projected to be significant. The future noise levels are likely to increase slowly over the years rather than immediately due also to other developments throughout the area.

Data on the ultimate future unmitigated noise levels for all of the roadways investigated for traffic indicates that noise levels greater than 65 CNEL are projected to occur along Sierra Highway and a portion of Avenue G, although noise increases along these roadways due solely to the project are all less than 1.0 dBA. Proposed landfill traffic will contribute slightly, but insignificantly to the ultimate future noise levels in the landfill vicinity. Cumulative noise impacts due to traffic from future residential development can be mitigated to less than significant levels by the construction of sound walls, berms, fencing, and landscaping along roadway rights of way by the residential developer.

6.6 WATER QUALITY

Surface Water

Urbanization of previously vegetated lands have the potential to cause cumulative degradation of surface water quality via siltation and introduction of urban contaminants from automobiles, fertilizers, and household and industrial products. Implementation of mitigation measures described in this EIR for the landfill facilities, as well as regulatory required implementation of best management practices for storm-water runoff at each proposed development project, would mitigate these potential impacts. Therefore, significant cumulative impacts to surface water quality are not expected.

Groundwater

Development of vacant property for the proposed residential projects in the area would not necessarily affect groundwater quality conditions since these projects would not expose groundwater to contaminating substances. Residential development could however, modify the quality of groundwater if sanitation were to be based on the use of septic tanks. This potential impact is not considered to be significant, however, due to the high modern standards of septic tank construction. In addition, new development would use municipal water supplies and not rely on groundwater for potable use. The potential for groundwater contamination does exist for the landfill expansion project. The landfill would be required to design site-specific facilities to avoid exposure of groundwater to leachate or refuse. The landfill operator would also be responsible for monitoring groundwater quality for the earliest possible detection of any contamination and offsite migration. Design features and mitigation proposed for the LLRC would eliminate the project's potential impact on groundwater quality. Therefore, no cumulatively significant groundwater quality impacts would occur.

6.7 AIR QUALITY

6.7.1 EMISSIONS

The geographic area of concern for cumulative air quality impact is the SEDAB, which includes the Coachella Valley and Antelope Valley. The SEDAB is not classified as an extreme non-attainment area for ozone. However, according to the SCAQMD (CEQA Air Quality Handbook - April, 1993), ozone and PM_{10} standards are regularly exceeded in the SEDAB. Much of the ozone problem in the SEDAB is the result of ozone transport from the South Coast Air Basin. Unlike ozone, which is a regional problem, high PM_{10} concentrations are a localized problem resulting mainly from fugitive dust emissions.

In order to assess the cumulative impacts of the project and proposed development identified in the vicinity of the project, an emissions burden analysis was performed for the two residential developments identified. This analysis and approach was discussed with SCAQMD (Steve Smith, Program Supervisor). Projected emissions data for these projects will be added to the landfill expansion project emissions to determine significance.

Subregional daily emissions levels in pounds per day were estimated for the two residential developments using vehicle miles of travel and estimated electricity and natural gas consumption. Daily area-wide emissions were calculated as follows for on-road mobile and stationary emissions:

On-Road Mobile Operations Emissions. Development of the related projects would affect the total quantities of motor-related pollutants emitted in the SEDAB. The change in the regional pollutant burden provides an indication of the general change in air quality in the region and is useful in assessing relative changes in the concentrations of criteria pollutants. An increase in automotive vehicle miles of travel (VMT) resulting from operation of the related projects would result in a higher regional air-related pollutant burden. Using the California Air Resources Board URBEMIS 5 program[1], the amount of development and trip generation for the related projects was used to derive the emissions burden. Mobile emissions were then aggregated by pollutant in pounds per day.

Stationary Operations Emissions. Emissions for electricity and gas consumption were calculated using the CEQA Air Quality Handbook which utilizes rates from Southern California Edison (SCE) and the Southern California Gas Company (SCGC). The amount of development is used to derive emissions in pounds per day.

[1] California Air Resources Board - Urbemis Release 5.0 (July 1995). Urbemis is a sketch planning tool for estimating vehicle trips, emissions, and fuel use resulting from land development projects. Urbemis 5 reads emission factors directly from the USEPA-approved EMFAC7F1.1.

TABLE 6-1
DAILY OPERATIONS EMISSIONS ASSOCIATED WITH PROPOSED PROJECTS (lbs/day)

Pollutant	SCAQMD Threshold for SEDAB	Residential Developments (Mobile Sources)	Residential Developments (Stationary Sources)	Landfill Expansion Project	Total
Carbon Monoxide	550	77	0.3	357	434.3
Reactive Organic Gas	75	10	0.1	53	63.1
Nitrogen Oxides	100	6	1.4	310	317.4
Sulfur Oxides	150	0.5	0.1	18	18.6
Particulates	150	0.7	0	21.3	22

SCAQMD thresholds of significance are exceeded for NO_x for the combined projects, which is considered a cumulatively significant impact for air emissions. Although the significance threshold was not exceeded for PM_{10}, any increase in PM_{10} emissions due to the proposed projects may be considered a cumulatively significant impact on the basin since PM_{10} standards in the SEDAB are regularly exceeded.

6.7.2 ODOR

Odor control measures implemented at the proposed landfill site would work toward reducing impacts. There are no other related projects in the cumulative impacts area that significantly contribute to odor, owing to the residential nature of the projects. Environmental effects of odor are typically localized in nature; thus, even if the land uses had the potential for odors, the impacts would not be additive. No cumulative odor impacts would occur.

6.8 BIOTA

Past and present agricultural land development activities in the vicinity of the landfill have eliminated habitat, reduced the number of threatened and endangered plants and animals, individuals and species, and introduced non-native species, having resulted in significant cumulative effects to biological resources. The LLRC expansion project would disturb 40 acres of relatively undisturbed native habitat and 134 acres of highly disturbed habitat. In contrast to residential development, revegetation of the entire landfill site at closure with native species endemic to the area would, in time, restore all of the landfill site to open space habitat for native species. Buildout of the planned residential projects in the vicinity would eliminate 194.5 acres of potential habitat. Approximately two-thirds of this acreage has been previously disturbed by agricultural and infrastructure development activities. Approximately 65 acres is relatively undisturbed native habitat. In light of the large expanses of native habitat in the region, these losses are not considered to be significant cumulative impacts.

Current state and federal policies and regulations require projects to avoid impacts to threatened and endangered species or to mitigate those impacts. No threatened or endangered species would be impacted by the proposed landfill expansion. Assuming that state and federal threatened and endangered species policies will be adhered to and mitigation measures imposed as-needed at the proposed residential developments, cumulative impacts on such species would be considered less than significant.

6.9 CULTURAL AND PALEONTOLOGICAL RESOURCES

The proposed LLRC expansion would not result in any direct or indirect impacts on prehistoric-aboriginal or historic resources; therefore, it would not contribute to cumulative impacts on such resources.

The proposed LLRC expansion and residential developments could potentially result in direct impacts to unknown paleontologic resources. Assuming cultural resource policies will be adhered to and mitigation measures will be imposed as-needed on a project-specific basis, cumulative impacts to cultural resources would be considered less than significant.

6.10 TRAFFIC

Forecast traffic volumes are based on the Traffic Impact Study prepared by DKS Associates. The Traffic Impact Study incorporates the expected population increases projected in the landfill expansion project, and all cumulative projects in the study area expected to be constructed by the year 2010. The levels of service for the year 2010 depicted in Tables 6-2 and 6-3, shows all cumulative development to the year 2010. All of the roadways in the vicinity are projected to operate at LOS A or better resulting in no significant cumulative traffic impacts.

6.11 ENVIRONMENTAL SAFETY

The potential public health hazard due to the disposal of hazardous waste/materials at the LLRC is a site specific issue only. There are no potential cumulative impacts associated with environmental safety related to hazardous waste/materials due to the residential nature of proposed development in the area.

6.12 VISUAL QUALITY

Development of proposed projects (low density housing; medium density housing; and landfill expansion) would continue the alteration of undisturbed native vegetation into urban uses. Cumulatively, these projects will insignificantly effect the area's visual quality since existing land uses currently include an existing landfill and low density/rural residential uses. This assumes the physical appearance of the residential developments will be consistent with the visual character of existing residential areas. No substantial changes would occur to the closest scenic corridor, Sierra Highway, since the existing visual landscape already includes the same type of urban and natural features proposed. The WEA, EEA and the residential developments proposed in the local area would contribute to the loss of native desert vegetation which would be replaced with mostly ornamental vegetation. Some level of visual

TABLE 6-2
INTERSECTION PEAK HOUR LEVELS OF SERVICE
CUMULATIVE (YEAR 2010) + PROJECT

Intersection [a]	Peak Hour	Cumulative Base (Year 2010)		Cumulative + Project (w/ Avenue F Ext.)		Project Increase in V/C	Significant Project Impact	Cumulative + Project (w/o Avenue F Ext.)		Project Increase in V/C	Significant Project Impact
		V/C	LOS	V/C	LOS			V/C	LOS		
1. Avenue F &	AM	0.11	A	0.11	A	0.00	NO	0.11	A	0.00	NO
SR-14 SB Ramps	PM	0.14	A	0.14	A	0.00	NO	0.14	A	0.00	NO
2. Avenue F &	AM	0.14	A	0.14	A	0.00	NO	0.14	A	0.00	NO
SR-14 NB Ramps	PM	0.21	A	0.21	A	0.00	NO	0.21	A	0.00	NO
3. Avenue F &	AM	0.20	A	0.21	A	0.01	NO	0.21	A	0.01	NO
Division Street	PM	0.20	A	0.22	A	0.02	NO	0.22	A	0.02	NO
4. Avenue F &	AM	0.18	A	0.19	A	0.01	NO	0.19	A	0.01	NO
10th Street East	PM	0.20	A	0.21	A	0.01	NO	0.21	A	0.01	NO
5. Avenue G &	AM	0.16	A	0.16	A	0.00	NO	0.16	A	0.00	NO
SR-14 SB Ramps	PM	0.18	A	0.18	A	0.00	NO	0.18	A	0.00	NO
6. Avenue G &	AM	0.15	A	0.16	A	0.01	NO	0.16	A	0.01	NO
SR-14 NB Ramps	PM	0.17	A	0.17	A	0.00	NO	0.17	A	0.00	NO
7. Avenue G &	AM	0.35	A	0.36	A	0.01	NO	0.36	A	0.01	NO
Sierra Highway	PM	0.47	A	0.47	A	0.00	NO	0.48	A	0.01	NO
8. Avenue G &	AM	0.31	A	0.31	A	0.00	NO	0.32	A	0.01	NO
Division Street	PM	0.30	A	0.30	A	0.00	NO	0.31	A	0.01	NO
9. Avenue G &	AM	0.21	A	0.22	A	0.01	NO	0.22	A	0.01	NO
10th Street East	PM	0.28	A	0.30	A	0.02	NO	0.30	A	0.02	NO
10. Avenue H &	AM	0.19	A	0.19	A	0.00	NO	0.19	A	0.00	NO
SR-14 SB Ramps	PM	0.22	A	0.22	A	0.00	NO	0.22	A	0.00	NO
11. Avenue H &	AM	0.18	A	0.18	A	0.00	NO	0.19	A	0.01	NO
SR-14 NB Ramps	PM	0.22	A	0.22	A	0.00	NO	0.22	A	0.00	NO
12. Avenue H &	AM	[b]		[b]		-	-	[b]		-	-
Sierra Highway	PM	[b]		[b]		-	-	[b]		-	-
13. Avenue H &	AM	0.26	A	0.26	A	0.00	NO	0.27	A	0.01	NO
Division Street	PM	0.27	A	0.28	A	0.01	NO	0.28	A	0.01	NO

Notes:

[a] All analyzed intersections are currently stop-controlled. Based upon County of Los Angeles traffic study guidelines, these intersections were analyzed as if they were signalized.

[b] Grade-separated under future conditions.

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TABLE 6-3
ROADWAY LEVELS OF SERVICE
CUMULATIVE (YEAR 2010) + PROJECT

Roadway Segment	Cumulative Base (Year 2010)			Project Only (w/ Ave F Ext.) ADT	Existing + Ambient Growth + Project (w/ Ave F Ext.)				Project Only (w/o Ave F Ext.) ADT	Existing + Ambient Growth + Project (w/ Ave F Ext.)			
	ADT	V/C [a]	LOS		ADT	V/C [a]	LOS	V/C Inc		ADT	V/C [a]	LOS	V/C Inc
1. Avenue F east of SR-14 NB Ramps	2,176	0.18	A	80	2,256	0.19	A	0.01	0	2,176	0.18	A	0.00
2. Avenue F east of Division Street	432	0.04	A	200	632	0.05	A	0.02	200	632	0.05	A	0.02
3. Avenue G east of SR-14 NB Ramps	2,560	0.21	A	40	2,600	0.22	A	0.00	80	2,640	0.22	A	0.01
4. Avenue G east of Sierra Highway	2,871	0.24	A	40	2,911	0.24	A	0.00	80	2,951	0.25	A	0.01
5. Avenue G east of Division Street	1,463	0.12	A	0	1,463	0.12	A	0.00	0	1,463	0.12	A	0.00
6. Avenue H east of SR-14 NB Ramps	2,637	0.22	A	20	2,657	0.22	A	0.00	40	2,677	0.22	A	0.00
7. Avenue H east of Division Street	853	0.07	A	0	853	0.07	A	0.00	0	853	0.07	A	0.00
8. Sierra Highway north of Avenue G	6,119	0.51	A	0	6,119	0.51	A	0.00	0	6,119	0.51	A	0.00
9. Sierra Highway south of Avenue G	6,038	0.50	A	0	6,038	0.50	A	0.00	0	6,038	0.50	A	0.00
10. Division Street north of Avenue G	2,597	0.22	A	100	2,697	0.22	A	0.01	160	2,757	0.23	A	0.01
11. Division Street south of Avenue G	2,688	0.22	A	60	2,748	0.23	A	0.01	80	2,768	0.23	A	0.01
12. 10th Street East north of Avenue F	1,488	0.12	A	20	1,508	0.13	A	0.00	20	1,508	0.13	A	0.00
13. 10th Street East south of Avenue F	2,032	0.17	A	180	2,212	0.18	A	0.02	180	2,212	0.18	A	0.02

Note:
[a] Roadway Capacity = 12,000 vehicles per segment.

(H:\Shared\SWMD\Lancast\EIR-REV2:LOS.XLS:RD-CUM:3/31/97) contrast will exist between the ornamental vegetation typical of residential developments and the natural vegetation proposed for the landfill's interim and final closure revegetation. However, due to the proximity of these projects to existing similar land uses, the visual contrast will not be significant.

SECTION 7.0

ALTERNATIVES TO PROPOSED PROJECT

7.0 ALTERNATIVES TO PROPOSED PROJECT

Section 15126(d) of CEQA requires that an EIR describe a range of reasonable alternatives to a proposed project, or to the location of the project, which could feasibly attain the basic objectives of the project, and to evaluate the comparative merits of the alternatives. The "No Project" alternative is also specifically required to be evaluated.

As is stated in Section 3.0 of this EIR, the primary objectives of the proposed project are:

- To conduct a landfill operation adjacent to the existing facility in order to continue existing operation.
- To continue to provide a regional resource to the Lancaster area.
- To increase landfill capacity within close proximity to the expanding population of the Antelope Valley.
- To minimize the potential adverse impacts of solid waste disposal in the region by providing additional disposal capacity adjacent to an existing landfill.
- To dispose of refuse in a relatively isolated area which efficiently utilizes landscape and natural topography.
- To provide additional needed landfill capacity for the county, which is consistent with the codes and policies of the Los Angeles County General and Solid Waste Management Plans and the City of Lancaster General Plan.

In addition to the "No Project" alternative, both onsite and alternative off-site locations have been evaluated.

7.1 NO PROJECT ALTERNATIVE

The No Project alternative would result in the closure of the LLRC when the existing landfill has reached its permitted capacity, which is currently estimated to be approximately 1998. None of the expansion related impacts described in Section 5.0

of this EIR would occur under this alternative. The No Project alternative is the "Environmentally Superior Alternative" in terms of site-specific impacts. The landfill would be closed in compliance with California regulations described in 14 CCR, Sections 18261 and 18264 and would be returned to an open space land use.

Because landfill capacity is a necessity for urbanized areas, the No Project alternative would effectively place an increased demand on other county landfill sites, especially the nearby Antelope Valley Landfill near Palmdale. This would have the effect of causing that landfill to reach its permitted capacity and be closed sooner than it would otherwise.

The No Project alternative does not meet any of the objectives of the proposed project particularly the objectives to provide additional refuse disposal capacity in the Antelope Valley.

7.2 ALTERNATIVE PROJECT LOCATION: RAIL HAUL TO REMOTE LOCATIONS IN AND OUT OF CALIFORNIA

Rail haul is an alternative to the traditional mode of transportation of wastes in packer trucks and transfer trailers which allows the siting of landfills (or recycling and waste-to-energy facilities) at locations distant from major urban centers. One benefit of this category of alternatives is the opportunity to site landfills and other waste-related facilities in sparsely populated areas. Rail haul of wastes also provides the opportunity to consider a larger geographic area in the landfill siting process. Rail haul alternatives involve environmental impacts at the landfill site, impacts at materials recovery facility/rail loading stations in the urban areas served, and impacts associated with the long-distance transport of wastes. The drawbacks of rail haul alternatives include substantially higher combined transport and disposal costs (over $50 per ton as compared to $16 to $24 per ton at in-County landfills according to Los Angeles County Sanitation Districts, 1991) and the reliance on disposal capacity subject to regulatory controls beyond Los Angeles County's jurisdictional authority.

In order for rail haul to be considered a feasible alternative for disposal of waste generated in the Antelope Valley, a transfer facility with rail loading facilities would have to be available for use in the region.

Rail haul of wastes to remote locations appears to be a viable component of an overall integrated waste management system if suitable long-term agreements can be established regarding secure capacity. There are several potential remote disposal sites in Southern California which could be considered candidates for a Los Angeles County waste-by-rail system. Applications for these sites have been filed and the environmental review is under way. These projects include:

- Eagle Mountain Project, Riverside County
- Rail-Cycle/Bolo Station Project, San Bernardino County
- Mesquite Regional Landfill Project, Imperial County
- Campo Landfill Project, San Diego County

In addition to the rail haul disposal sites in California, several rail haul projects have been developed or are proposed for development outside California. These sites and their locations are:

- East Carbon Sanitary Landfill, eastern Utah
- Roosevelt Regional Landfill, southeast Washington
- Butterfield Station Landfill, near Phoenix, Arizona
- Franconia Landfill, western Arizona
- La Paz County Landfill, western Arizona

The four rail haul projects considered candidates for a Los Angeles County waste-by rail system have been selected for further analyses in this EIR. These are the Eagle Mountain Project in Riverside County, the Rail-Cycle/Bolo Station Project in San

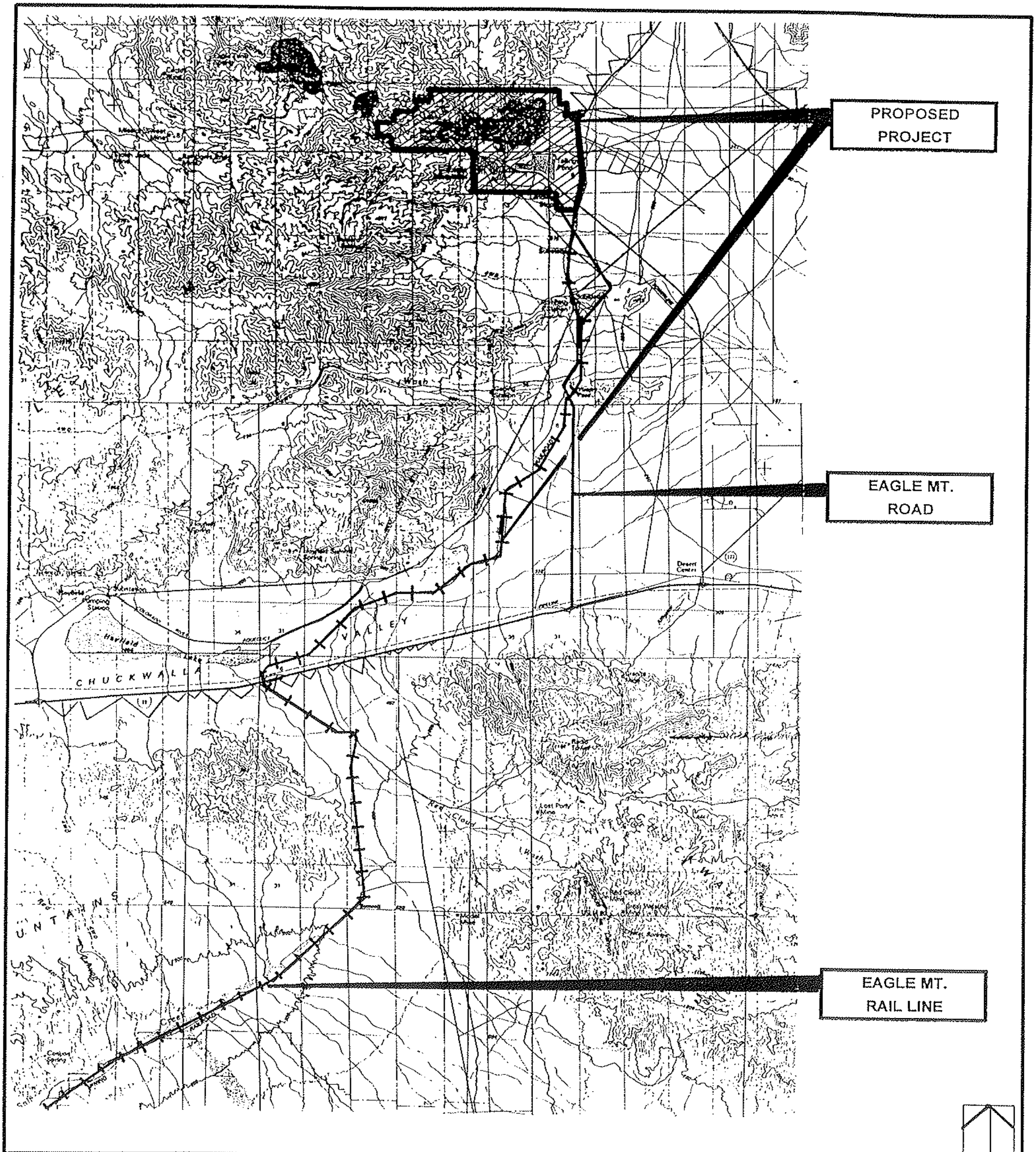
Bernardino County, and the Mesquite Regional Landfill Project in Imperial County and the Campo Landfill Project in San Diego County.

One concern regarding the reliance upon out-of-state disposal sites is the potential for future federal or State legislation which could limit the flow of waste across state lines. No legislation has been passed on this issue to date, but federal legislation that would influence the interstate transport of wastes is pending. Rail haul projects outside California offer similar disposal opportunities to the three on-site projects noted above. The evaluation of the three in-state rail haul sites provides for consideration of a reasonable range of such alternatives. Therefore, no further discussion of out of state rail haul projects is included in this document.

7.2.1 RAIL HAUL - EAGLE MOUNTAIN PROJECT

The proposed Eagle Mountain Landfill site is located in northeastern Riverside County, north of Interstate 10 and west of State Route 177 (Figure 7-1). This facility is proposed to accommodate up to 20,000 tpd of municipal solid waste. This site is estimated to have a total capacity of 300 million tons. The Eagle Mountain Landfill is a highly controversial project which had received certification of its' Final EIR and the issuance of a CUP for the project by the Riverside County Board of Supervisors. On July 26, 1994, the Superior Court set aside the certificate and the CUP when it found the EIR to be inadequate.

The facility is located in one of three abandoned ore mines that were operated by the Kaiser Steel Corporation. Operating permits are expected to be secured by Spring of 1997 and an opening target date is 1998. A small portion of the air space is dedicated to solid waste from Riverside County. The remaining tonnage will most likely be transported by rail or by long haul from other jurisdictions.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 7-1

EAGLE MOUNTAIN RAIL HAUL PROJECT
SITE LOCATION

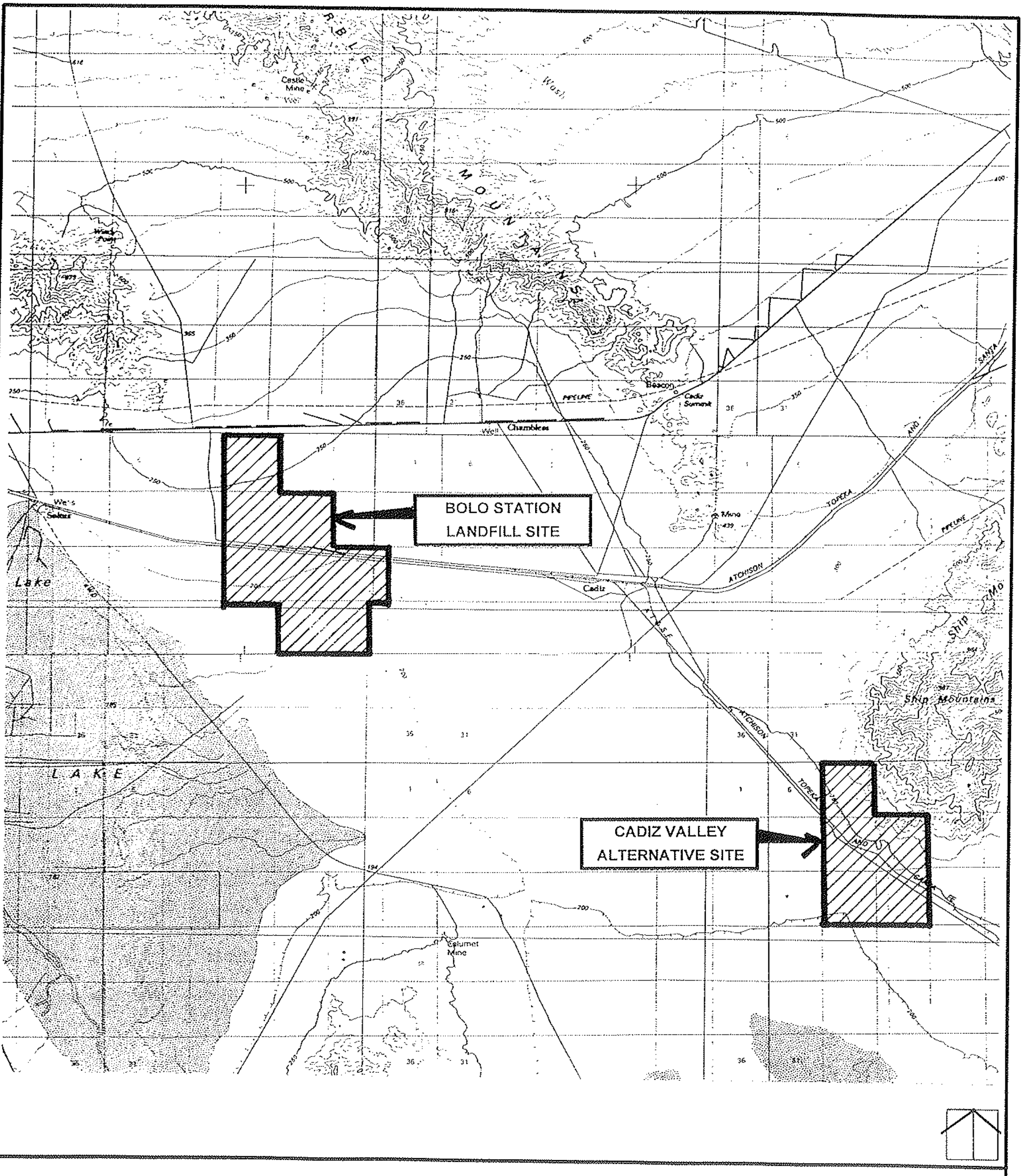
Source : 1995 DRAFT EIR ELSMERE SOLID WASTE MANAGEMENT FACILITY

The Eagle Mountain project includes the transfer of 3,271 acres of federal lands to the project proponent in exchange for lands owned by the proponent which are located along the Eagle Mountain rail line. In addition to the development of the project site, the proposed project includes the conversion of an existing 52 mile rail line for transport of waste from Ferrum Junction (on the northeast coast of the Salton Sea) to the disposal site. A new two mile long rail spur would be built to connect this rail line to a proposed container yard in the project site.

If municipal solid wastes from the Antelope Valley were to be disposed at Eagle Mountain Landfill, they would have to be processed through a MRF or a transfer station and transported approximately 250 miles by rail. There are currently no MRFs or Inter-Modal Facilities (IMFs) in the Antelope Valley with rail haul capabilities nor are there rail lines connecting the Antelope Valley to the Eagle Mountain Landfill.

7.2.2 RAIL HAUL - BOLO STATION PROJECT

The Bolo Station Landfill site is located in southeastern San Bernardino County, south of Interstate 40 between the towns of Amboy and Cadiz (Figure 7-2). This facility is proposed to accommodate 21,000 tpd of municipal solid waste after five years. The site is estimated to have an approximate capacity of 430 million tons, and is expected to have an operational life of 60 to 100 years. The Bolo Station Landfill project site encompasses 4,870 acres, with the landfill footprint occupying a total of 2,100 acres. Approximately 1,600 acres of the landfill project site is currently managed by the BLM. The Bolo Station project includes a proposal to exchange in fee 1,600 acres of federal lands to the project proponent for approximately 1,920 acres of privately-owned lands in the California Desert Conservation Area. A final Environmental Impact Study (EIS)/EIR for the project was released in August, 1994. The site was recently issued Waste Discharge Requirements by the Colorado River Regional Water Quality Control Board. This facility is not presently operating.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 7-2

RAIL-CYCLE/BOLO STATION RAIL HAUL PROJECT

SITE LOCATION

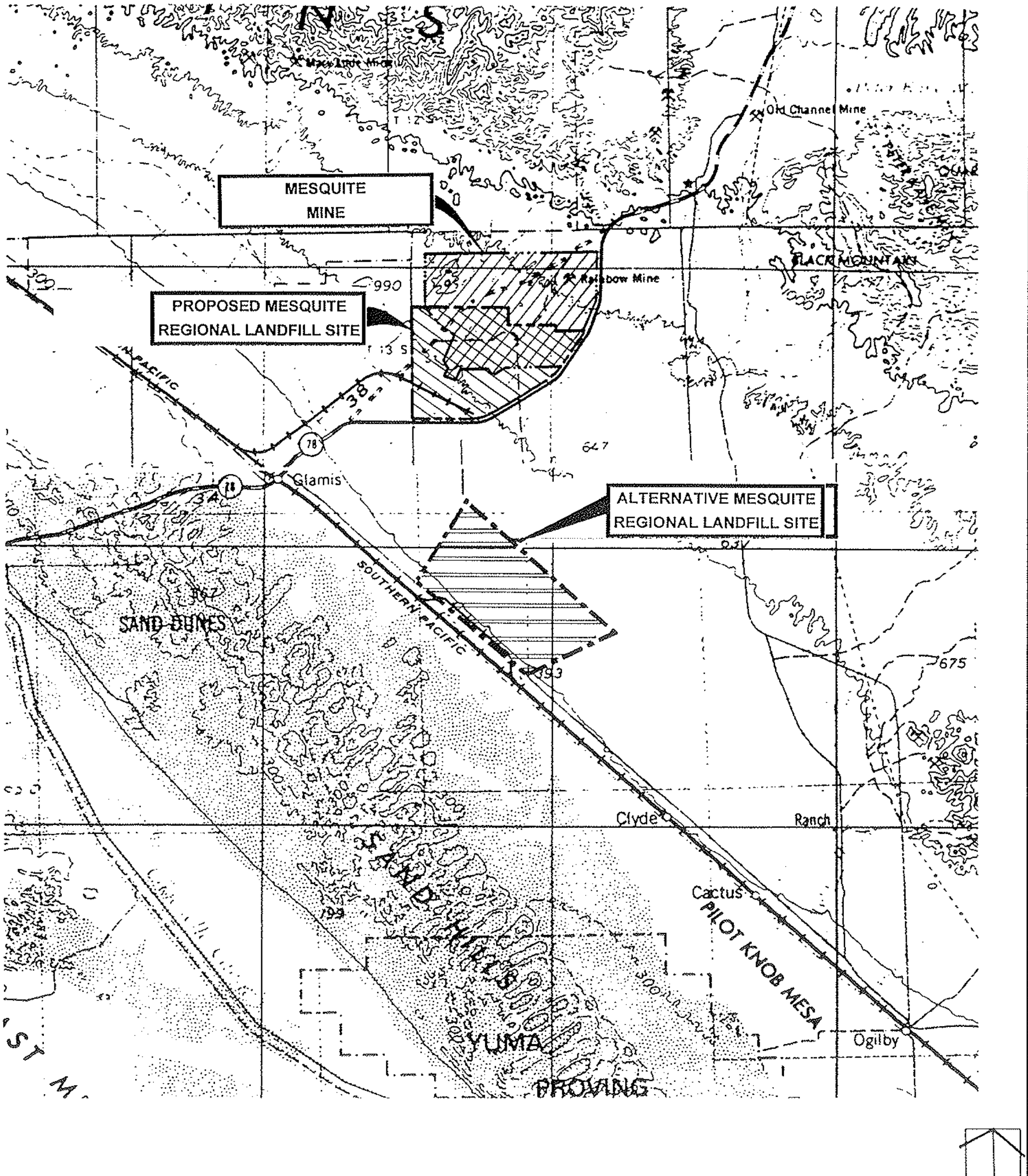
Source : 1995 DRAFT EIR ELSMERE SOLID WASTE MANAGEMENT FACILITY

If municipal solid wastes from the Antelope Valley area are disposed at the Bolo Station Landfill site, it would have to be processed through MRFs and transfer stations such as those described above and transported by rail. There are currently no MRFs or IMFs in the Antelope Valley with rail haul capabilities nor are there rail lines connecting the Antelope Valley to the Bolo Station Landfill site.

7.2.3 RAIL HAUL - MESQUITE REGIONAL LANDFILL PROJECT

The Mesquite Regional Landfill site is located in eastern Imperial County, north of Highway 78, 20 miles west of the California/Arizona border and 20 miles north of the Federal Republic of Mexico/United States International Border (Figure 7-3). This facility is proposed to accommodate 20,000 tpd of municipal solid waste. The site is estimated to have an approximate capacity of 600 million tons, and is expected to have an operational lifetime of 100 years. The Mesquite Regional Landfill project site encompasses 4,250 acres, with the landfill footprint occupying a total of 2,290 acres. Approximately 1,750 acres of the landfill project site is currently managed by the BLM. The proposed project includes a proposal to transfer these federal lands to the project proponent in exchange for approximately 2,242 acres of privately-owned lands in the California Desert Conservation Area. In addition to the development at the disposal site, the proposed project includes the construction of a railroad spur approximately 4.5 miles long. This railroad spur would be located on BLM-managed lands, and would require a FLPMA right-of way. This facility has some operating permits and the CUP was approved in September 1995 after extensive hearings before the Imperial County Board of Supervisors.

If municipal solid waste from the Antelope Valley area are disposed at the Mesquite Regional Landfill site, it would have to be processed through MRFs or IMFs such as those described above and transported by rail approximately 260 miles. There are currently no MRFs or IMFs in the Antelope Valley with rail haul capabilities nor are there rail lines connecting the Antelope Valley to the Mesquite Regional Landfill site.



LANCASTER LANDFILL AND RECYCLING CENTER

FIGURE 7-3

MESQUITE RAIL HAUL PROJECT

SITE LOCATION

Source : 1995 DRAFT EIR ELSMERE SOLID WASTE MANAGEMENT FACILITY

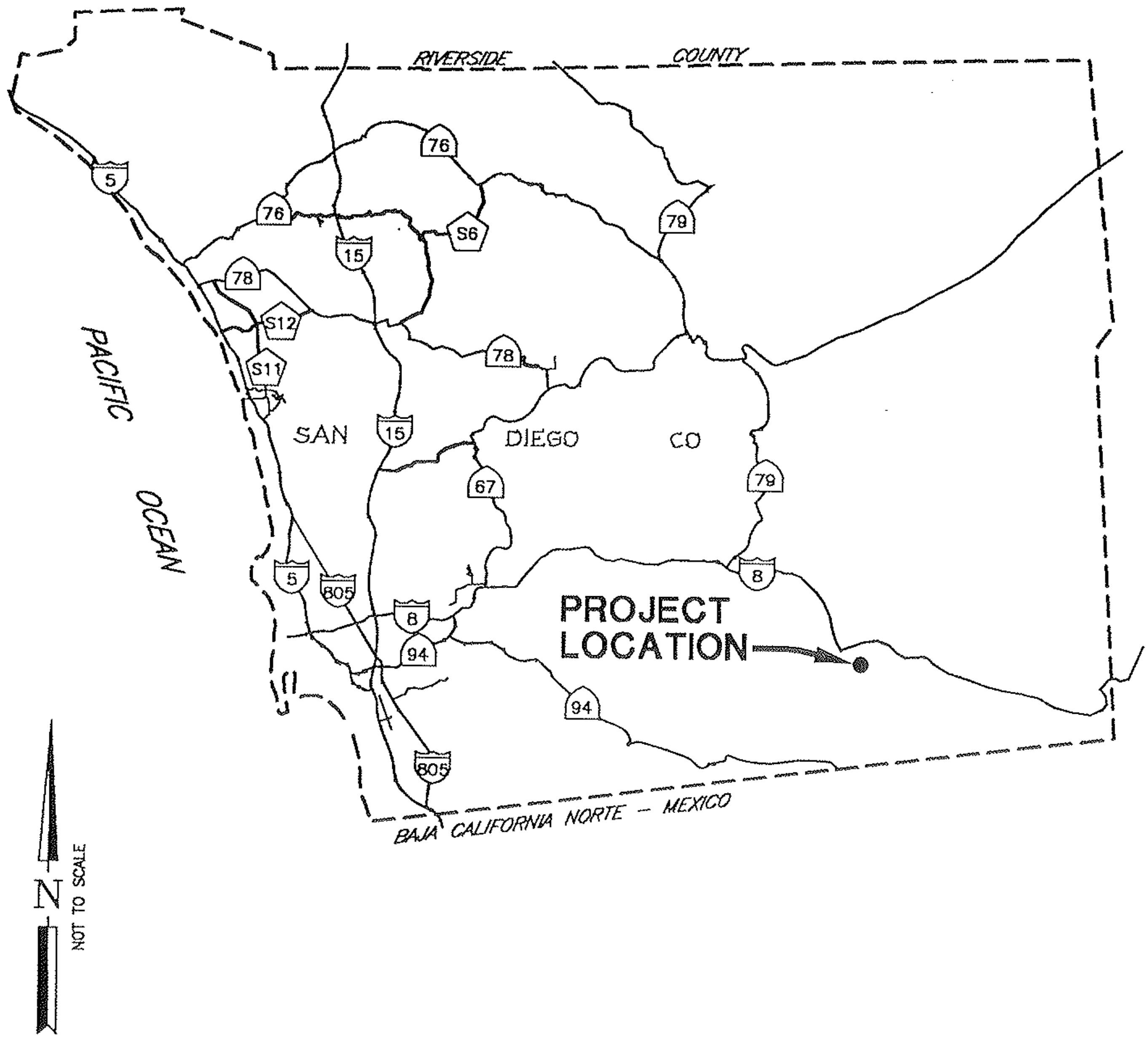
7.2.4 CAMPO LANDFILL PROJECT

The Campo Landfill project is located approximately 65 miles southwest of downtown San Diego (Figure 7-4). The Campo Landfill consists of 600 acres of land located in the southwest corner of the Campo Indian Reservation. All operating permits for the facility have been obtained; however, the facility is not yet operational. If operated as a rail haul landfill, approximately 30 miles of track would be required to be constructed from the town of Campo to the landfill. Transfer trailer traffic could enter the site via Interstate 8.

If municipal solid wastes from the Antelope Valley area are disposed at the Campo Landfill site, it would have to be processed through MRFs and transfer stations such as those described above and transported by rail. There are currently no MRFs or IMFs in the Antelope Valley with rail haul capabilities nor are there rail lines connecting the Antelope Valley to the Campo Landfill site.

7.2.5 CONCLUSIONS

While it seems likely that one or more rail haul projects will eventually be permitted and constructed in Southern California, rail haul from the Antelope Valley is not considered a feasible alternative at this time nor in the reasonably foreseeable future. This conclusion is based on several factors, the first two of which are logistics and economics. There is currently no existing or planned MRF and/or transfer station/facility or an IMF in the region nor are there rail lines to proposed rail haul disposal sites which could accommodate the wastestream. In light of the capital costs associated with development of transfer stations and intermodal facilities, and the relatively small available wastestream in the Antelope Valley, it seems unlikely that such a facility would be constructed in the region in the reasonably foreseeable future. Additionally, the tipping fees for rail haul are not presently competitive.



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LANCASTER LANDFILL AND RECYCLING CENTER
FIGURE 7–4

CAMPO LANDFILL PROJECT SITE LOCATION

Source: 1995 Draft EIR Elsmere Solid Waste Management Facility

Rail haul system proponents have indicated that tipping fees (including transport and disposal) could range from $39 to $55 per ton in 1995 dollars. Economy of scale could reduce the cost per ton. These rates, however, are currently not competitive and it is unlikely that tipping fees will increase to this level in the foreseeable future in Southern California. There are several reasons for this, the most significant of which is the decision by Orange County to contract for disposal of out-of-County solid waste into Orange County landfills at $18, $19 and $35 per ton depending on the terms of five and ten year contracts between certain waste haulers and the County Board Supervisors.

Orange County owns and/or operates all landfills located within its boundaries. Until recently, Orange County had an Ordinance in place which prohibited the importation of solid waste for disposal at their landfills. However, due to existing financial constraints, on June 27, 1995, the County amended the existing Ordinance to allow the importation of solid waste into their landfills, provided waste haulers importing waste have disposal contracts approved by the Orange County Board of Supervisors.

Another factor is the politics issues associated with rail haul and any out of county waste transport proposal, including surrendering local control over out of county host fees and taxes. In addition, the recent election results in San Bernardino County and continuing litigation of rail haul projects elsewhere regarding environmental issues indicate that actual construction and operation of any rail haul project in Southern California is unlikely to occur sooner than three to five years in the future. Rail haul of municipal solid waste from the Antelope Valley is therefore rejected as a feasible alternative to the proposed expansion of the LLRC.

Lastly, the waste generated in the Antelope Valley wasteshed would have to be transported over a much farther distance for disposal, thus potentially resulting in increased air emissions over those anticipated for the project.

7.3 ALTERNATIVE PROJECT LOCATION: CHIQUITA CANYON LANDFILL EXPANSION AND ELSMERE CANYON LANDFILL PROPOSAL

The two closest alternative project sites identified for this EIR, other than the Antelope Valley Landfill which is considered in the No Project Alternative, are the Chiquita Canyon and proposed Elsmere Canyon landfills. Both sites were evaluated as alternatives to the LLRC expansion project.

7.3.1 CHIQUITA CANYON LANDFILL EXPANSION

The Chiquita Canyon Landfill (CCL) is located in the northwestern portion of Los Angeles County directly east of the Ventura County line and approximately three miles west of the junction between Interstate 5 (I-5) and State Route 126 (SR-126), Castaic Junction, approximately 45 miles southwest of the Antelope Valley. Access to the site is obtained from SR-126, a two-lane paved highway that runs east to west along the southern border of the landfill site.

The existing CCL operation occupies approximately 154 acres of the 600 acre total site. At present, filling two canyon areas has been completed to final grade, and two more areas are currently receiving waste. The existing permitted site is scheduled to close in approximately 1997. However, a proposed expansion of the CCL is currently in the permitting process. The expansion would result in an increase of 183 acres of permitted landfill area within the 600 acre lease boundary. The main expansion areas would include vertical expansion of the currently permitted canyon area and the excavation of six expansion cells in the north and northwestern portion of the site.

Significant unavoidable impacts associated with the CCL are described in the CCL expansion EIR are impacts to landform and air quality. Due to the increased haul distance from the Antelope Valley (approximately 45 miles), traffic, air quality and noise impacts associated with this alternative would be greater than those associated with the proposed project. Other environmental impacts due to landfill development are anticipated to be similar to the proposed project, i.e., mitigatable to a less than significant level.

7.3.2 PROPOSED NEW ELSMERE CANYON LANDFILL

A Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS) on the proposed new landfill development at Elsmere Canyon has been prepared and was released in January, 1995 for public review and comment (Dames and Moore, 1995). The 2,700-acre Elsmere Canyon site is located on land under federal ownership (1,643 acres) and in an unincorporated area in Los Angeles County, immediately southeast of the City of Santa Clarita. The site is approximately 50 miles southwest of the Antelope Valley. The site is located on the east side of the Antelope Valley Freeway (SR-14) near San Fernando Road and approximately two miles north of the intersection of I-5 and SR-14. The project would remove land within the Angeles National Forest from federal ownership through a land exchange. The USFS and the Los Angeles County DRP are co-lead agencies for the project.

The proposed landfill would be used as a major regional Class III facility, accepting non-hazardous municipal solid waste and inert solids. As described in the Elsmere Canyon EIR/EIS, the project would include new landfill facilities (720 acres of disposal area), recycling facilities, and support structure/facilities. The total development would occupy 900 acres. The site has a proposed disposal capacity of 190 million tons. The expected life of the landfill would be approximately 32 to 50 years assuming a maximum daily disposal volume of 16,500 tpd.

The site is currently a vacant and undeveloped isolated canyon area. The lands immediately surrounding the site are generally vacant with the exception of several transmission line rights-of-way. The nearest residences are located 1,500 feet to the south, 1,100 feet to the northwest and 5,500 feet to the north (refer to Figure 15.1.2 in

Dames and Moore, 1995). The site area is characterized by high topographic relief, with elevations ranging from approximately 1,400 feet to 2,400 feet (MSL).

A summary of significant unavoidable impacts associated with the Elsmere Canyon site is provided below from the DEIR/EIS Executive Summary (Dames and Moore, 1995). The document discusses the project's effect on 24 environmental resources or issues of concern. Based on the DEIR/EIS analysis, approximately 20 individual environmental effects within those topics were categorized as significant, after mitigation is proposed.

7.3.3 CONCLUSION

Neither the Chiquta Canyon Landfill nor the Elsmere Canyon Landfill are considered feasible alternatives to the proposed project. Both of these landfills are located 45 miles or more from the Antelope Valley, where most of the solid waste which is currently disposed in the LLRC is generated. Due to the increased haul distance to these landfills from the Antelope Valley impacts to traffic, air quality and noise would be greater than for the proposed project. Neither alternative would reduce any of the unavoidable adverse impacts of the proposed project to a less than significant level. In addition, it is not cost effective to dispose waste from the Antelope Valley to these facilities. Chiquita Canyon Landfill's tipping fee for commercial customers is $35.53 per ton. Since the Elsmere Canyon Landfill is not yet operating, it is assumed that their tipping fee would be similar to Chiquita. Based on a refuse hauling cost of $2.00 per mile (assuming a 25 ton average load at .16 cents per mile per ton round trip as provided by the Refuse Haulers Association), hauling costs from Antelope Valley to these facilities would be approximately $90 per 25 ton load or an additional 3.60 per ton for transportation. Disposal costs for Antelope Valley at these facilities would be $39.13 per ton as compared to $34.12 per ton charged by the LLRC.

7.4 MODIFIED PROJECT ALTERNATIVES

Two smaller expansion projects at the LLRC project have also been considered as alternatives. The first is a Western Expansion Area (WEA) Alternative which is expansion of the landfill only to the 62 acre parcel west of and contiguous with the existing landfill. This alternative would propose using the existing entrance and ancillary facilities and proposes acceptance of up to 1,700 tpd of refuse. The second is an Eastern Expansion Area (EEA) Alternative which is expansion of the landfill only to the 110 acre parcel east of the existing landfill. New entrance and ancillary facilities would be consistent with the proposed project. Acceptance of up to 1,700 tpd of refuse is proposed.

7.4.1 WEA ALTERNATIVE

Under this alternative, the maximum daily tonnage of 1,700 tpd is proposed and horizontal expansion of the LLRC would be limited to the 62 acre parcel west of the existing landfill. This property is owned by the applicant and is currently utilized for various landfill support operations including administration, maintenance and storage. The borrow pit which supplies cover material for the existing landfill occupies the northeast third of the WEA. The WEA only alternative would add approximately 3,375,000 tons of waste disposal capacity which is about 60 percent less capacity than the proposed project. This would add approximately six to fourteen years of life to the existing landfill depending on the waste disposal rate. Proposed operations and development of the WEA alternative would be consistent with the proposed project operation. This alternative would eliminate all of the physical and biological impacts of the proposed project on the EEA. New entrance and ancillary facilities would not have to be constructed for that operation. Impacts associated with traffic, air quality and noise are a function of the refuse acceptance rate. When the LLRC reaches a waste acceptance rate of 1,700 tpd, the air quality, noise and traffic impacts of this alternative would be nearly identical to the proposed project at that acceptance rate. These impacts would occur for a much shorter period of time.

The WEA alternative would affect fewer adjacent properties than the proposed project since it is smaller in size. Since the WEA which would be developed under this alternative is 62 acres of highly disturbed habitat including the existing borrow pit for the landfill, this alternative would eliminate most of the impacts to biological resources compared to the proposed project. It would also eliminate potential impacts to a future rural trail proposed to bisect a portion of the EEA.

The WEA alternative is identified as the Environmentally Superior Alternative other than the No Project Alternative. This alternative would meet some of the objectives of the proposed project, but for a shorter period of time. This alternative has been rejected by the applicant and was eliminated from further evaluation as it only allows for 40 percent of the proposed project capacity which does not expand long-term waste disposal capacity at the LLRC and does not provide for in-County daily capacity options and long-term disposal needs.

7.4.2 EEA ALTERNATIVE

The EEA alternative would propose a maximum daily tonnage of 1,700 tpd and would limit expansion of the LLRC to the 110 acre parcel east of the existing landfill. This would add 5,345,000 tons of refuse disposal capacity to the existing landfill which is about 40 percent less than the proposed project. This would add approximately nine to twenty-one years of life to the existing landfill depending on the waste disposal rate.

This alternative would eliminate all of the physical and biological impacts of the proposed project on the WEA. Impacts associated with traffic, air quality, noise, and environmental safety are a function of the refuse acceptance rate rather than the specific areas at the site used for waste disposal. Therefore, when the facility reached a future acceptance capacity of 1,700 tpd, the impacts of this alternative associated with traffic, air quality, noise, and environmental safety would be nearly the same as for the proposed project but for a shorter period of time. Because most of the biological impacts of the proposed project are associated with the EEA, the biological impacts due to this alternative would be nearly the same as the proposed project.

This alternative would eliminate some of the visual impacts of the proposed project, especially for adjacent properties south and west of the WEA.

This alternative would meet some of the objectives of the proposed project, but for a shorter period of time. This alternative has been rejected by the applicant and was eliminated from further evaluation as it does not significantly expand long-term waste disposal capacity at the LLRC and does not provide for in-County daily capacity options and long-term disposal needs.

SECTION 8.0

LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

8.0 LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT

8.1 GROWTH INDUCING IMPACTS

According to the CEQA Guidelines, this section should, "...discuss 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." Further, it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

There are two aspects of the proposed project that could be considered to have an impact on growth. One pertains to the physical changes that could be expected to occur relative to the properties surrounding the project, and the other growth factor relates to the solid waste disposal feature of an area's infrastructure.

Landfills generally do not introduce features that immediately draw new development toward their boundaries. The extension of the LLRC will not open new roads, require new sewers or extensions of infrastructures which would normally be associated with residential or commercial developments entering into undeveloped areas. Because of the nature of landfills they tend to be located, at least while they are active, in isolated areas as is the case with the proposed project. 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 discouraged 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 (i.e., by long-haul trucks or rail haul) 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 is a source for disposal of municipal waste, without which development would have to cease. Therefore, by providing local waste disposal capacity the proposed project could be considered growth-inducing for home construction within its service areas. However, the proposed project is not considered growth-inducing because, as is pointed out in the preceding paragraph, solid waste can be hauled to other disposal sites via long-haul trucks or rail haul. The project will serve as a source of continued solid waste disposal for the existing urban land uses. The proposed project is necessary to continue the existing services provided by the LLRC. The existing landfill will reach capacity in approximately 1998. The proposed expansion will allow for the continuation of this existing service.

Additionally, because of the impending closure of other landfills in the County of Los Angeles which cannot be expanded due to physical or economic constraints, 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.

This project is a small part of the total solid waste disposal system which serves both existing and new development which may occur in the Southern California metropolitan area. The proposed expansion of the LLRC, therefore, should not be considered growth-inducing to the area, but as a project which will be meeting the ongoing need for refuse and municipal solid waste disposal sources in the Southern California area in general and in the Antelope Valley region in particular.

If the proposed project is not implemented, fees for the collection and disposal of solid waste throughout the service area 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).

8.2 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Approval of the proposed project would result in an expansion of the current landfill site and extend landfill operations for approximately 12 to 22 years beyond the currently approximated closure date. Approximately 174 acres of additional property would be converted from undeveloped and vacant land to landfill use.

Waste on the landfill expansion site would remain for the foreseeable future. Although the landfill would be closed and covered, long-term constraints on future land uses of the site would remain. The long-term implications of landfilled waste remaining permanently on the site involve potential groundwater and surface water impacts and landfill gas generation and possible migration.

There will be the potential for the long-term environmental impacts described in this EIR if proper operational procedures are not employed. Methods for controlling the potential for such impacts have been discussed in the mitigation sections of this report, reducing the risks to public health and safety to a level of insignificance.

Implementation of the project would allow the County to provide adequate solid waste disposal services in the County within close proximity to the expanding population of the Antelope Valley. The County's goal of meeting integrated waste management regulations which have been adopted pursuant to the California Integrated Waste Management Act of 1989 will be met. The County is also committed to the long-term goal of developing alternative methods of solid waste management, including source reduction and recycling, which would be assisted by the proposed expansion of recycling facilities and activities as part of the project. All state and local guidelines concerning the treatment and disposal of solid waste recognize the fact that some material cannot be recycled or transposed, and that landfilling must remain a part of any integrated waste management program. In this regard, the proposed landfill expansion would assist the County in maintaining the landfill component of its solid waste plan.

In addition to providing a long-term disposal source for municipal solid waste for the area, the project could provide for: 1) a reduction in vehicle trip miles; 2) a savings in fuel use; and 3) a decrease in air pollutants if alternative disposal sites located farther from the waste shed must be selected to solve the demand for landfill space. It is logical to assume that any new facility will be located in more rural and as yet undeveloped areas of southern California. Under these circumstances, the distance from the wasteshed identified as part of this project would have to increase for more remote sites. Consequently, there would be additional traffic on the road system, more air emissions from waste-hauling vehicles, and more fuel consumption.

8.3 ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The approval of the landfill expansion would result in the permanent alteration of on-site topographic conditions. The geotechnical reports prepared for the project identified no geohazards that would preclude development of the project. Potential geohazards would be eliminated during project design.

By using the site as a landfill, the County has made an irreversible commitment to monitor air quality and ground and surface water quality to ensure that potential pollution or contaminants are controlled. The ultimate surface of the fill area must also be maintained to ensure the stability and integrity of final cover. These commitments exist with the currently operating landfill, and while they would be expanded by the proposed project, they are not caused solely by the proposal.

The waste placed on the landfill site by both the existing and proposed projects is not expected to be removed and its presence is considered irreversible. However, closed landfills in Southern California are currently being utilized as botanical gardens (Palos Verdes Landfill), sports complexes (Cerritos Landfill), golf courses (Mission Canyon Landfill), and equestrian centers (Encinitas Landfill).

The significant and potentially significant impacts relating to landfill operation, noise, traffic, and air quality are not found to be irreversible since they would be eliminated after landfill closure.

The energy consumed by landfill operations at the project site, including transportation of wastes, would occur regardless of the location of the disposal site. The use of petroleum resources for energy is irreversible.

There will be a partial loss of waste materials that could otherwise be recycled at a savings in energy and virgin materials. This, however, may be a short-term situation as trends towards recycling and reuse (bottles and containers) become more acceptable to the general population. Implementation of such recovery activity must be supported by the appropriate infrastructure and solutions to existing technical problems to the Southern California basin, (i.e., air pollution control, financial support, and public participation).

SECTION 9.0

ORGANIZATIONS/PERSONS CONSULTED

9.0 ORGANIZATIONS/PERSONS CONSULTED

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Department of Public Works	J. C. Bagnell Victor Martinez David Smith Ken Weary Barry Witler
Department of Health Services	Connie Rocke Don Stockenberg
Department of Parks and Recreation	Joan Rupert
Fire Department	Keith Deagon Janna Masi

FEDERAL, STATE AND OTHER LOCAL PUBLIC AGENCIES

Department of the Air Force	Robert Johnstone
California Department of Fish and Game	Chanelle Davis
California Department of Transportation	Wilford Melton
California Integrated Waste Management Board	Brian Larimore
Regional Water Quality Control Board, Lahontan Region	Chris Maxwell
South Coast Air Quality Management District	Steve Smith

CITY OF LANCASTER

Public Works Department	Susan Barnett Jeff Long Neil Hudson
Waste Management of Lancaster	Doug Corcoran Rod Collins

SECTION 10.0

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10.0 QUALIFICATIONS OF EIR AUTHORS

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