

**ENVIRONMENTAL IMPACT REPORT
FOR THE
PALMDALE BUSINESS PARK
CENTER SPECIFIC PLAN**

***VOLUME I:
TECHNICAL REPORT***

Prepared for

**City of Palmdale
Planning Department
Palmdale, California**

Prepared by

**URS Consultants, Inc.
San Bernardino, California**

May 1995

CITY OF PALMDALE
LOS ANGELES COUNTY, CALIFORNIA
RESOLUTION NO. 96-38

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
PALMDALE, CALIFORNIA CERTIFYING ENVIRONMENTAL IMPACT
REPORT NUMBER 93-01 FOR THE PALMDALE BUSINESS PARK
CENTER SPECIFIC PLAN (SP 92-02)**

THE CITY COUNCIL OF THE CITY OF PALMDALE HEREBY FINDS,
RESOLVES AND ORDERS AS FOLLOWS:

Section 1. Applications were duly filed by the Lockheed Corporation, now doing business as Lockheed/Martin Corporation (LMC Properties, Inc.), hereinafter referred to as the Applicant, requesting adoption of a Specific Plan (SP 92-02), known as the Palmdale Business Park Center Specific Plan, and hereinafter referred to as the project. The project proposes a Specific Plan for the purpose of creating a 632 acre mixed-use development, including commercial, business park, golf course, and airport-related industrial uses, to be built in eight phases in up to 25 years. The project area is generally bounded by Avenue M to the north, USAF Plant 42 to the east and south, and the Southern Pacific Railroad and Metropolitan Transportation Agency railroad rights-of-way and Sierra Highway to the west. The project area excludes a seven acre parcel fronting Avenue M and owned by Los Angeles County Waterworks District No. 40, and a five acre parcel generally located along the project's southwestern boundary which is undeveloped and under private ownership.

Section 2. An initial study was prepared for the project by the Planning Department staff, pursuant to Section 15063 of the State CEQA Guidelines. The initial study, which was completed on June 4, 1993, identified that there was substantial evidence that the project may have a significant environmental impact on several environmental resources and governmental services. Pursuant to State CEQA Guidelines 15064 and 15081, a decision was made to prepare an Environmental Impact Report ("EIR") for the project.

Section 3. On June 21, 1993, a Notice of Preparation for the EIR was prepared and sent to the State Clearinghouse in the Office of Planning and Research for the State of California and to other responsible agencies.

Section 4. On April 3, 1993, a contract was entered into between the City, the Applicant and URS Consultants, Inc., ("URS") of San Bernardino, California, whereby URS agreed to be the lead consultant for the preparation of the EIR for the project.

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Thereafter, screen check versions of the Draft EIR were presented to the City on July 27, 1994, and October 12, 1994. A preliminary draft of the EIR was presented to the City on January 9, 1995.

Section 5. On May 5, 1995, the Draft EIR was completed. Pursuant to State CEQA Guidelines Section 15085, the City prepared a Notice of Completion of the Draft EIR which was filed with the State Office of Planning and Research on June 6, 1993. The EIR was circulated to interested agencies between June 9, 1995 and July 24, 1995 for a 45-day comment period, pursuant to State CEQA Guidelines Section 15087. Comments were received and responses prepared and incorporated into the EIR. A copy of the EIR is on file in the office of the Planning Department.

Section 6. The Planning Commission for the City of Palmdale held public hearings on the Draft EIR on January 18, 1996 and on February 15, 1996, and received testimony regarding the Draft EIR during the hearings held on January 18, 1996 and February 15, 1996. Notice of the time, place and subject matter of the public hearing was published in the Antelope Valley Press on January 9, 1996 in accordance with the requirements of Public Resources Code Section 21092 and a copy of such notice was filed with the Los Angeles County Clerk, in accordance with the requirements of Public Resources Code Section 21092.3.

Section 7. On February 15, 1996, the Planning Commission adopted Resolution No. PC-96-19 recommending that the City Council certify Final EIR 93-01, which consists of the Draft EIR, any comments received, any responses by the City to the comments received, and other materials as set forth in the staff reports dated January 18, 1996 and in supplements to that staff report dated February 15, 1996 and exhibits thereto, which EIR was prepared for the Palmdale Business Park Center Specific Plan (SP 92-02). The Planning Commission's recommendation was made subject to the amended text changes contained in Exhibit "A" to that Resolution.

Section 8. The Planning Commission also reviewed and considered the Mitigation Monitoring Program for the EIR that has been prepared pursuant to the requirements of Public Resources Code Section 21081.6 and found that such Program is designed to ensure compliance with the mitigation measures during project implementation. The Planning Commission therefore recommended that the City Council adopt the Mitigation Monitoring Program for EIR 93-01 subject to the text changes contained in Exhibit "B" to Resolution No. PC-96-19.

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Section 9. On March 20, 1996, the City Council conducted a public hearing on Final EIR 93-01. Notice of the time, place, and subject matter of the public hearing was published in accordance with the requirements of Public Resources Code Section 21092 and a copy of such notice was filed with the Los Angeles County Clerk in accordance with the requirement of Public Resources Code Section 21092.3.

Section 10. Evidence, both written and oral, was duly presented to and considered by the City Council at the aforesaid public hearing, including but not limited to, the staff report dated March 20, 1996.

Section 11. The City Council finds that the Final EIR, consisting of the Draft EIR, the comments to the EIR, and the responses to those comments, and other materials, have been received by the City Council, that the City Council has reviewed and considered those documents prior to acting on the applications, and finds, pursuant to State CEQA Guidelines Section 15090, that the Final EIR has been completed in compliance with CEQA, the State CEQA Guidelines and the City's local CEQA guidelines. The City Council further finds, pursuant to Public Resources Code Section 21082.1 and State CEQA Guidelines Section 15084(e) that the EIR has been independently analyzed by City Staff, the Planning Commission, and the City Council, and that the EIR represents and reflects the independent judgement of the City with respect to these applications.

Section 12. The City Council finds that the additional information provided in the staff report accompanying the EIR, and the evidence presented in written and oral testimony presented at the above referenced hearing does not represent significant new information so as to require recirculation of the EIR pursuant to Public Resources Code Section 21092.1

Section 13. Based upon the aforementioned findings, the City Council hereby certifies Final EIR 93-01 which consists of the Draft EIR, the list of persons and organizations consulted by the City upon completion of the Draft EIR, any comments received, any responses of the City to the comments received, and other materials as set forth in the Planning Commission staff reports dated January 18, and February 15, 1996, subject to the revisions to the Environmental Impact Report text as contained in Exhibit "A" of this Resolution.

Section 14. The City Council has reviewed and considered the Mitigation Monitoring Program for the EIR that has been prepared pursuant to the requirements of Public Resources Code Section 21081.6 and finds that such program is designed to

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ensure compliance with the mitigation measures during Project implementation. The City Council hereby adopts the Mitigation Monitoring Program for EIR 93-01, subject to the revisions to the Mitigation Monitoring Program as contained in Exhibit "B" of this Resolution.

Section 15. The City Clerk shall certify to the adoption of this Resolution, and shall transmit a copy of this Resolution to the applicant.

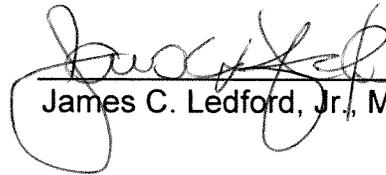
PASSED, APPROVED AND ADOPTED this 20th Day of March, 1996.

AYES: Councilmembers Myers, Davies, Judge, Root & Mayor Ledford

NOES: None

ABSENT: None

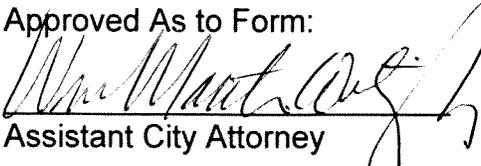
ABSTAIN: None


James C. Ledford, Jr., Mayor

ATTEST:


Victoria L. Denham, City Clerk

Approved As to Form:


Assistant City Attorney

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EXHIBIT A

Certification of EIR 93-01 is subject to the following changes being made to the text of said EIR.

Page: 2-4/3-111, paragraph 2

From: These are the two runways that are closest to the project site.

To: Delete sentence.

Page: 1-8/1-9 and 3-34/3-35, Summary of Significant Impacts and Mitigation (Table 1-1).

From: Move item #17 (Pesticides and fertilizers) to become item #23.

To: Move item #23 (Golf course turf standards) to become item #17 and ADD:
e. Participate in the use of reclaimed water and/or grey water when reasonably available.

Page: 1-7, Summary of Significant Impacts and Mitigation (Table 1-1).

From: Mitigatable to a level of non-significance item #9 (construction equipment)
- Yes

To: Mitigatable to a level of non-significance item #9 - No

Page: 1-7, Summary of Significant Impacts and Mitigation (Table 1-1),
Mitigation Measure #13.

From: #13 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

To: "#13. The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs of such studies. In addition, in order to achieve the required reduction in vehicle trips from the project that is necessary to fully mitigate traffic impacts of the project (estimated to be an approximate 25% reduction in vehicle trips), each individual development project within the boundaries of the Specific Plan shall be conditioned to mitigate its proportionate share of traffic impacts prior to the issuance of building permits, as determined by the City Traffic/Transportation Engineer and as approved by the Reviewing Authority, through one or more of the following measures: (1) contribution to on-site or off-site improvements or demonstration of funding or completion of such improvements by other individual development projects in the Specific Plan area; (2) implementation of a Traffic Demand Management (TDM) program; (3) a reduction in the density or intensity of development floor area from that specified in the Specific Plan; (4) other measures contained in Section III.D.4.a. through e. of the Specific Plan; or (5) any combination of the above-listed measures as determined to be adequate by the City's Traffic/Transportation Engineer. No subsequent approval, including but not limited to Conditional Use Permit, Site Plan Review, subdivision or other development approval shall be granted until the reviewing authority determines to its reasonable satisfaction that the measures to be utilized by the individual project developer are capable of achieving the proposed project's proportional share of the total reduction in overall Specific Plan vehicle trips that are necessary to mitigate traffic impacts to a level of non-significance.

Page: **1-11, Summary of Significant Impacts and Mitigation (Table 1-1), Mitigation Measure #28**

From: **#28** The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely

manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

To: #28 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall include construction of or contribution to traffic-related improvements or programs that shall be based on an approved adopted ultimate roadway designation of Regional Arterial Roadway (four through-travel lanes in each direction) for Avenue M or alternate acceptable mitigation as approved by the City. Prior to recordation of any map subsequent to VTPM 24191, or prior to issuance of the first building permit outside of Phase (golf course), whichever comes first, the developer shall record a covenant in favor of the City against Phases 7 and 8 restricting development of such phases until one of the following occurs:

- a) a change to the City of Lancaster's General Plan to designate Avenue M as a Regional Arterial;
- b) provision of alternate roadways to alleviate traffic congestion on Avenue M;
- c) reduction in the project's land use intensities with respect to trip generation;
- d) other means as approved by the City.

Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies and applications.

Page: 1-11, Summary of Significant Impacts and Mitigation (Table 1-1)

From: #29 Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

To: #29 The applicant shall be subject to, and shall participate in all applicable fire impact fees and/or assessments that are in effect at the time of construction of any development in the project area.

Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

Page: 3-30, paragraph 1

From: As stated in Section 3.3.2.1, direct project water requirements could increase groundwater use by 1,280 acre-feet/year. Half of this would come from two new wells proposed for construction at the site. The project proponent has proposed two new wells, for golf course irrigation. One well is on the golf course in the southern portion of the property while the other is in the eastern portion of the site. These locations were selected to maximize distance from neighboring wells, to minimize potential drawdown interference and to obtain the groundwater at points of need. It is expected that two wells will provide greater flexibility in water system design, will allow for operation and maintenance in one well while keeping the other well productive, and allow for emergency/standby use. Well depths will be approximately 1,150 feet. Maximum drawdown on neighboring wells, would be expected to occur during the summer months. Site 1, Well 1 on USAF Plant 42 one-fourth mile east of the property would have a maximum monthly drawdown of 2.03 feet. The maximum theoretical drawdown of the Landale Farms Well No. 1 (one-half mile north of the property) would be 1.11 feet.

To: (Beginning with the second sentence). The remaining half (611 to 780 acre-feet/year) would come from a new well proposed for construction at the site. The well would be located in the southern portion of the property. Well depth will be approximately 1,150 feet. Maximum drawdown on neighboring wells would be expected to occur during the summer months. The maximum theoretical drawdown of the Landale Farms Well No. 1 (one-half mile north of the property) would be 1.11 feet. A second well would be located in the eastern portion of the project site and would be dedicated to the LACWWD No. 40. This well would be used by the District for domestic water use only. Well depth will be approximately 1,150 feet. Site 1, Well 1 on USAF Plant 42 (one-fourth mile east of the property) would have a maximum monthly drawdown of 2.03 feet during summer months.

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EXHIBIT B

Certification of EIR 93-01 is subject to the following changes being made to the text of the Mitigation Monitoring Program as listed below:

Mitigation Monitoring Program, Mitigation Measure #13.

From: #13 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

To: "#13. The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs of such studies. In addition, in order to achieve the required reduction in vehicle trips from the project that is necessary to fully mitigate traffic impacts of the project (estimated to be an approximate 25% reduction in vehicle trips), each individual development project within the boundaries of the Specific Plan shall be conditioned to mitigate its proportionate share of traffic impacts prior to the issuance of building permits, as determined by the City Traffic/Transportation Engineer and as approved by the Reviewing Authority, through one or more of the following measures: (1) contribution to on-site or off-site improvements or demonstration of funding or completion of such improvements by other individual development projects in the Specific Plan area; (2) implementation of a Traffic Demand Management (TDM) program; (3) a reduction in the density or intensity of development floor area from that specified in the Specific Plan; (4) other measures contained in Section III.D.4.a. through e. of the Specific Plan; or (5) any combination of the above-listed measures as determined to be adequate by the City's

Traffic/Transportation Engineer. No subsequent approval, including but not limited to Conditional Use Permit, Site Plan Review, subdivision or other development approval shall be granted until the reviewing authority determines to its reasonable satisfaction that the measures to be utilized by the individual project developer are capable of achieving the proposed project's proportional share of the total reduction in overall Specific Plan vehicle trips that are necessary to mitigate traffic impacts to a level of non-significance.

Monitoring and Reporting Process

- From: Prior to approval of any individual development project. Improvements subject to the approval of the City Traffic Engineer based on potential LOS degradation.
- To: Prior to approval of any individual development project, other than the golf course phase. Improvements subject to the approval of the City Traffic Engineer based on potential LOS degradation.

Monitoring Milestone

- From: Prior to certification of occupancy of any site within the project area and periodically thereafter.
- To: Prior to certification of occupancy of any site within the project area other than the golf course site, and periodically thereafter.

Responsible Party

- From: City Traffic Engineer and SCAQMD.
- To: City Traffic Engineer, Planning Department, and SCAQMD.

Mitigation Measures #17 and #23
(Mitigation Measures/Conditions of Approval)

Exchange the placements on the Mitigation Measure/Condition numbers and ADD:
e. Participate in the use of reclaimed water and/or grey water when reasonably available.

Mitigation Monitoring Program, Mitigation Measure #28

From: #28 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

To: #28 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall include construction of or contribution to traffic-related improvements or programs that shall be based on an approved adopted ultimate roadway designation of Regional Arterial Roadway (four through-travel lanes in each direction) for Avenue M or alternate acceptable mitigation as approved by the City. Prior to recordation of any map subsequent to VTPM 24191, or prior to issuance of the first building permit outside of Phase (golf course), whichever comes first, the developer shall record a covenant in favor of the City against Phases 7 and 8 restricting development of such phases until one of the following occurs:

- a) a change to the City of Lancaster's General Plan to designate Avenue M as a Regional Arterial;
- b) provision of alternate roadways to alleviate traffic congestion on Avenue M;

- c) reduction in the project's land use intensities with respect to trip generation;
- d) other means as approved by the City.

Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies and applications.

Monitoring and Reporting Process

- From: Prior to approval of any individual development project. Improvements subject to the approval of the City Traffic Engineer based on potential LOS degradation.
- To: Prior to approval of any individual development project, other than the golf course phase. Improvements subject to the approval of the City Traffic Engineer based on potential LOS degradation.

Monitoring Milestone

- From: Prior to certification of occupancy of any site within the project area and periodically thereafter.
- To: Prior to certification of occupancy of any site within the project area other than the golf course site, and periodically thereafter.

Responsible Party

- From: City Traffic Engineer and SCAQMD.
- To: City Traffic Engineer, Planning Department, and SCAQMD.

Mitigation Measure #29

Mitigation Measure/Condition of Approval

From: Fire Protection. Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

To: Fire Protection. The applicant shall be subject to and shall participate in all applicable fire impact fees and /or assessments that are in effect at the time of construction of any development in the project area.

Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

ENVIRONMENTAL IMPACT REPORT
FOR THE
PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
VOLUME I: TECHNICAL REPORT
State Clearinghouse #93061074

Prepared for:

CITY OF PALMDALE
Planning Department
38306 Ninth Street East
Palmdale, California 93550

Prepared by:

URS CONSULTANTS, INC.
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1. EXECUTIVE SUMMARY

The Palmdale Business Park Center Specific Plan, proposed for development by the Lockheed Corporation, is planned for a variety of commercial and industrial land uses as well as a 27-hole golf course on a 632.2-acre site. The project site is in the northern portion of the City of Palmdale adjacent to the City of Lancaster. USAF Plant 42 is located to the south and east of the project site. The Southern Pacific Railroad right-of-way and Sierra Highway are located directly west of the project site. On the western side of Sierra Highway is the proposed Industry Trade Center Specific Plan area. The proposed land use plan includes 61.78 acres of community commercial development, 88.93 acres of airport-related uses, 26.18 acres of business park development, and 166.95 acres of light industrial uses. There will also be a 27-hole golf course facility that will include a clubhouse and driving range. There will be an 18-hole championship course, as well as a 9-hole executive course. The proposed project will also include 5.95 acres of open space and 55.50 acres of street right-of-way. The Draft Environmental Impact Report analyzes the impacts of the construction and operation of these proposed facilities.

These proposed land uses are expected to generate over 5.2 million square feet of gross building area and over 10,000 jobs at buildout. The project will be developed in eight phases with buildout expected to occur by the year 2021. The rate of development will depend on market conditions in the Antelope Valley. In addition to the direct employment generation from the proposed project, an indirect population increase of 16,176 and 4,475 additional housing units are expected.

1.1 SUMMARY OF PROJECT IMPACTS

The following is a summary of the environmental impacts (see Table 1-1) that can be expected from the development of the Palmdale Business Park Center Specific Plan.

Potentially significant soils impacts could result from construction activities at the project site. The Geotechnical report has indicated that the soils at the project site are acceptable for foundation support with standard excavation and/or recompaction procedures. The soils at the project site have a low erosion potential and water erosion is not expected to be a major problem. Wind erosion could be a serious problem at the project site due to the high winds that are experienced in the Antelope Valley. There is also the potential for groundshaking at the project site due to the proximity to the San Andreas Fault. These impacts can be mitigated to a less than significant level through the adoption of the recommended measures.

Significant air quality impacts are expected to occur during both the construction and operation of the proposed project. The construction of the proposed project could result in significant emissions for both NO_x and PM₁₀. The operation of the proposed project (especially from mobile sources) would generate significant emissions for ROC, NO_x and CO. These impacts are expected to remain significant after the application of mitigation measures.

Water resources impacts from the proposed project are expected to result from increased water use and drainage issues. Water use from the proposed project is expected to total as much as 1,780 acre-feet per year (780 acre-ft for the golf course using conventional rather than state-of-the-art irrigation techniques and 1,000 acre-ft from commercial and industrial development). Indirect water demands, resulting from the population increase associated from the proposed project would be

3,920 acre-ft/year. The long-term effect of this increased water demand would be a significant groundwater impact. With the proposed drainage improvements and stormwater pollution prevention plans, the drainage and surface water impacts of the project would not be significant.

Desert scrub and Joshua tree woodlands are the two native plant communities occurring on the project site. There are a total of approximately 4,600 Joshua trees on the project site with densities as great as 75 to 100 trees per acre. No sensitive plant species, other than the Joshua Tree, were observed on the project site, although three sensitive animals, or their signs were observed during field surveys. No live desert tortoises or their burrows were observed on the project site. However, sign was observed which indicates the presence of the species at some point in time. A Loggerhead shrike and a California horned lark were both observed on the project site. Construction activities associated with the proposed project would significantly impact biological resources causing the loss of high quality scrub vegetation, approximately 3,000 Joshua trees and potential sensitive species habitat. Removal of these native plant communities would also displace wildlife at the project site (particularly the Loggerhead shrike and horned lark). Biological resources impacts could be minimized or eliminated in some cases by the implementation of a variety of mitigation measures, but the impacts would remain significant.

The Palmdale Business Park Center Specific Plan will result in a major change in the current land use of the project site. However, the proposed development is compatible with adjacent land uses as well as goals and policies contained in the City of Palmdale General Plan. The project site is designated for industrial Specific Plan uses in the City of Palmdale General Plan. The proposed land use mix is consistent with adjacent land uses, such as USAF Plant 42 and the future Industry Trade Center Specific Plan west of the project site on the other side of Sierra Highway. The Palmdale Business Park Center Specific Plan is also consistent with the General Plan policies, since it consolidates current development patterns, discourages urban sprawl and facilitates job/housing balance. It is also consistent with the General Plan policies regarding development standards for commercial and industrial land uses.

The proposed project is expected to have both direct and indirect socioeconomic impacts on the City of Palmdale and the Antelope Valley. The Palmdale Business Park Specific Plan is expected to result in the construction of over 5.2 million square feet of building area and the creation of over 10,200 new jobs. The indirect impacts are expected to include a population increase of 16,176 and a demand for 4,475 additional housing units. Many of the jobs created by this project will be filled by existing Antelope Valley residents and result in the improvements of the job/housing balance situation in the area. The socioeconomic impact of the proposed project is therefore considered to be beneficial.

The buildout of the Palmdale Business Park Center Specific Plan is expected to have a significant impact on the local transportation system. The proposed project is projected to generate a total of 53,058 trips at buildout (year 2021). This includes a total of 4,330 trips during the AM peak and 6,281 trips during the PM peak. All of the external intersections are expected to be operating at acceptable levels of services (LOS D or better). The one exception is the intersection of 3rd Street East and Avenue M which is projected to operate at LOS E. The volume-to-capacity ratio is at the borderline and is expected to last for only one hour each day. A number of roadway improvements and TDM measures will be necessary in order to ensure proper circulation through the area.

The development of the Palmdale Business Park Center Specific Plan will impact the ability of local agencies to provide public services, such as fire protection, law enforcement, schools, and park and recreation facilities to the project site. The direct impact resulting from employment generation through commercial and industrial development will increase the demand for fire protection and law enforcement at the project site. The indirect population and housing increase associated with that job growth will place additional demand on local school districts as well as parks and recreation facilities. The proposed project is indirectly expected to generate nearly 2,864 additional students at the secondary and elementary level. Development impact fees will be required to finance these additional services. In most cases, these fees should be adequate although given the serious overcrowding in local school districts, additional mitigation may be necessary.

A number of public utilities impacts will result from the proposed Palmdale Business Park Center Specific Plan. The proposed project is expected to place significant direct and indirect demands on the water production and distribution system. Buildout of the proposed project in the year 2021 will result in peak daily demand of 2.0 MGD. The proposed project would generate average and peak wastewater flows at buildout of 1.3 and 3.3 MGD. A total of 22,141 tons or 36,900 cubic yards of solid waste would be generated by this project. The Palmdale Business Park Center Specific Plan will place insignificant demands on the provision of electricity, natural gas, and telephone services in the area. The proposed mitigation measures should reduce impacts to less than significant levels.

There is no evidence of hazardous materials or soil contamination existing at the project site. There is the potential for hazardous waste to be generated by the light industrial airport related land uses proposed in the Specific Plan. A number of hazardous materials such as paints, dyes, thinners, adhesives, sealants, and lubricants are widely used the aerospace industry. These industries, also produce a variety of hazardous wastes such as acids, cleaners, paint related waste, organic solvents, lubricating oils, and jet fuel. Compliance with the City of Palmdale Hazardous Waste Management Plan and a number of recommended mitigation measures will reduce hazardous materials impacts to a less than significant level.

Two main types of noise impacts are associated with the proposed project: (1) impacts on surrounding land use and community exposure to increased noise levels directly attributable to the activities of the businesses and industries within the Business Park Center, and (2) onsite impacts of the surrounding ambient noise environment on Business Park Center patrons and businesses/industries. Noise impacts from project-related traffic are not expected to be significant. In addition, operational noise impacts from commercial and industrial activity at the project site are not expected to be significant. A number of onsite noise impacts from surrounding land uses could affect the project site. These sources include: the Southern Pacific Railroad, roadway traffic and aircraft noise (from USAF Plant 42 and Palmdale Regional Airport). The noise impacts from these sources are not expected to be significant as long as the recommended mitigation measures are followed.

There are not expected to be any significant impacts to cultural and paleontological resources as a result of development of the proposed project. Two prehistoric isolated finds were encountered during the survey of the project site. Neither of these finds had archaeological significance and neither of them were eligible for nomination to the National Register of Historic Places. Although no significant cultural and paleontological resources were identified at the project site, there is

always the potential for the discovery of buried resources. A number of mitigation measures are recommended to be followed should any resources be discovered during construction.

The Palmdale Business Park Center Specific Plan will permanently change the existing character of the project site. It is not expected to result in any significant aesthetic impacts as long as the development standards outlined in the specific plan are adhered to.

1.2 IMPACTS OF THE ALTERNATIVES

A total of four alternatives were considered and analyzed: No-Project alternative; replacement of golf course with open space uses; offsite alternative; and the No-Development alternative.

Under Alternative 1, the proposed Specific Plan would not be adopted, and development on the project site would be regulated by the City's General Plan and Zoning Ordinance. Development could occur under Alternative 1 similarly to that proposed under the Specific Plan project, but development of the area would proceed without the coherence and comprehensive planning that are implicit under the Specific Plan project. Alternative 1 would include an even distribution of industrial and airport-related land uses. It is assumed that the golf course would also be constructed. This alternative would result in 5.99 million square feet of building space being constructed and 11,199 jobs being generated (1,089 more jobs than under the Specific Plan). Most of the environmental impacts under this alternative would be similar to the proposed project. Mobile source emissions from travel to and from the work site would be higher than under the proposed project.

Alternative 2 would have the same land uses as the proposed project with one exception. The golf course could be replaced with open space uses. This alternative would have the same development intensity as the proposed project and most of the impacts would be similar. The replacement of the golf course with open space uses would reduce impacts in three areas: water resources, biological resources, and cultural and paleontological resources. Since the golf course would not be developed, water demand under this alternative would be reduced by 611 acre-ft/year. Biological impacts would be lower since there would be less disturbance to the Joshua Tree and desert scrub habitat. The lower amount of disturbance would also reduce the possibility of impacting cultural and paleontological resources.

Under Alternative 3 the proposed project would be developed at an offsite location. The site that was analyzed was a 442-acre parcel south of USAF Plant 42 owned by the City of Los Angeles Department of Airports. It was assumed that this property would be developed with the same land use mix as the proposed project although there would be no golf course. This results in a slightly larger acreage devoted to commercial and industrial land uses than under the proposed project. The scenario would result in 5.75 million square feet of building space and 11,139 jobs.

The environmental impacts under this alternative would differ substantially from the proposed project. This is due to the different site characteristics of this particular location as well as a higher intensity of development. Construction and operational emissions would be higher than under the proposed project since more square footage of development would take place. Impacts to geology and soils impact would differ due to slope variations, although seismic impacts would be similar. Water resources impacts would be lower since Alternative 3 would not include a golf course with

its associated water use. There would also be differences in drainage patterns between the sites. The impacts on biological resources will differ from the proposed project since slightly different vegetation and wildlife are expected to occur at this alternative location. The proposed land use is consistent with development trends in the area. The socioeconomic impacts will be higher since more employment will be generated. More trips will be generated under this alternative. The impact on the transportation system will depend on the existing level of service on intersections surrounding the alternative location. There would be a higher demand placed on public services and utilities compared to the proposed project. Hazardous material impacts are likely to be higher since a larger area will be devoted to airport-related land uses. Noise impacts will be closely related to landing patterns at USAF Plant 42, as well as development of Palmdale Regional Airport. Traffic-related noise is expected to be higher.

Alternative 4 is the No-Development Alternative which assumes the continuation of existing land uses at the project site. Under this scenario, the Palmdale Business Park Center Specific Plan would not be developed. The 632 acres involved in the project would remain vacant. All of the significant impacts resulting from the proposed project would be eliminated. However, the beneficial socioeconomic impacts associated with job creation, such as trip reduction for commuters, balancing of the job/housing ratio, and economic development opportunities, would be lost under the No-Development Alternative. In addition, the beneficial land use impacts of a 632-acre project designed and developed under a comprehensive plan, with infrastructure sized and provided to meet ultimate needs, would be lost. Since the land is designated for industrial uses in the City's General Plan, the No-Development Alternative could result in an uncoordinated, piecemeal approach to development of the area.

Table 1-1
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
<u>GEOLOGY AND SOILS</u>		
Increase in wind erosion and increased generation of fugitive dust and sand resulting from clearing, grading and movement of construction equipment during construction.	Yes	<p>#1 Site development shall proceed incrementally to minimize the amount of disturbed land at any given time. No more than one planning area shall be graded at one time unless approved by the City of Palmdale.</p> <p>#2 Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.</p> <p>#3 The following dust control mitigations shall be applied during construction in order to reduce wind erosion. Some of these mitigations include:</p> <ul style="list-style-type: none"> -- twice daily watering of active construction sites by sprinklers or water trucks to inhibit wind erosion; -- addition in mixtures of compounds to aid in binding soil particles; and -- mulching of soil for stabilization. <p>#4 All disturbed areas shall be revegetated for erosion control in accordance with city standards.</p>
The project site lies within a high seismic shaking zone.	Yes	<p>#5 Seismic studies shall be required for approval prior to construction of critical use facilities such as emergency services or communications centers or auditoriums. These uses would only be permitted in the community commercial or airport-related land use categories. Appropriate seismic safety design must be implemented.</p>
<u>AIR QUALITY</u>		
Increased PM10 emissions during grading and construction.	No	<p>#6 Groundcover in disturbed areas shall be replaced in accordance with city standards.</p>

Table 1-1, Continued, Page 2 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
	#7	#7 Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturer specifications, to exposed piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.
	#8	#8 Non-toxic soil stabilizers shall be applied (according to manufacturer's specification) to all inactive construction areas (previously graded areas inactive for 10 days or more).
Increased construction equipment emissions.	Yes	#9 Electricity from power poles shall be utilized rather than from temporary diesel power generators.
Increased stationary source emissions.	Yes	#10 Walls and attic insulation shall exceed Title 24 requirements.
	#11	#11 Light-colored roofing materials shall be utilized in order to reflect light.
	#12	#12 Building orientation and design shall be designed so as to minimize solar exposure.
Increased mobile source emissions during project operation.	No	#13 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.
<u>WATER RESOURCES</u>		
The project is estimated to require as much as 1,780 acre-feet of water. This is a significant increase of water usage in an area with severely constrained water supply.	No	#14 Drought-tolerant landscape plant material shall be utilized in all landscaping. All development shall be in conformance with City of Palmdale Water Conservation in landscaping ordinance.
	#15	#15 Native vegetation shall be retained to the extent feasible within the landscape areas.

Table 1-1, Continued, Page 3 of 12

Mitigable to a Level of Non-Significance	Significant Impacts	Mitigations
#16		Within the golf course area, retain the maximum amount of native vegetation practical. The application of herbicides and fertilizers will be minimized to the extent feasible, so as to avoid impacts to downgradient wells.
#17		Controlled use of pesticides and fertilizers within common areas including the golf course shall be enforced through provisions in the landscape plan for that development, including frequency and type of fertilizers/pesticides to be used, and application by qualified persons. For golf course area (that would drain into the proposed open drainage channel), special considerations should be given to use of slow release fertilizers and contact herbicides, prohibition of fungicides and broad spectrum insecticides, and the suppression of mosquito populations using bacterial insecticides or light oils instead of chemical agents.
#18		Water-conserving appliances and plumbing fixtures shall be utilized in all new construction, as recommended by the California Department of Water Resources.
#19	Yes	Where feasible, permeable paving materials shall be used in hardscape areas to maximize infiltration. The project shall be designed to retain and percolate site runoff to the extent practical.
#20		Parking lots and gutters of the project site shall be swept and disposed of properly at least once per month for industrial sites and once per week for commercial and office sites to prevent the accumulation of pollutants which would be washed into area drainage channels during storms.
#21		For individual projects, the City shall require evidence that the Applicant has obtained a storm water discharge permit from the Lahontan RWQCB. All industrial proposals must demonstrate compliance with the Lahontan RWQCB requirements for industrial site NPDES review. An oil/water separator or other appropriate means of runoff water quality control shall be implemented for the aircraft apron constructed in the airport-related industrial area located at the eastern side of the project site.

Table 1-1, Continued, Page 4 of 12

Mitigable to a Level of Non-Significance	Significant Impacts	Mitigations
#22		<p>The Project Proponent will pay the required drainage fees for regional flood control facilities identified in the City of Palmdale Master Plan of Drainage. Regional facilities constructed as part of the Palmdale Business Park Center Specific Plan Drainage Plan will be credited against drainage fee for the project.</p>
#23		<p>Measures to minimize the amount of groundwater consumption by large turf users (3 acres and over) shall be incorporated in the design and maintenance of such uses. Measures shall include, but are not limited to, the following:</p> <ul style="list-style-type: none"> a. Golf course fairways shall not exceed an average width greater than 40 yards (120 feet). b. Non-turfed rough areas shall not be included in fairway and rough area calculations. c. Lawn turfed areas, excluding tee boxes and greens, shall consist of drought tolerant species, warm season grasses, hybrid fescue or lawn substitutes. d. All turfed area irrigation systems shall consist of a Confinement/Desert system, controlled by an automatic control system, both employing industry standard Reasonably Available Technology (RAT).
#24	No	<p>Modified development activities should occur within the dense stands of Joshua trees which occur in the southwestern and northeastern portions of the project site. This can be accomplished by creating special Joshua Tree Preservation and/or Restoration Zones and by modifying the proposed building locations and development activities within these areas so that many of the Joshua trees could remain in present locations. Figure 3.4-2 identified two Joshua Tree Preservation Areas (Zones A and B) in the southwest portion of the project site and Figure 3.4-3 identifies an additional Joshua Tree Restoration Area at the proposed</p>

BIOLOGICAL RESOURCES

Construction activities would impact biological resources causing the loss of high quality scrub vegetation, approximately 3,000 Joshua trees, and potential sensitive species habitat.

Table 1-1, Continued, Page 5 of 12

Mitigable to a Level of Non-Significance	Significant Impacts	Mitigations
		<p>nine hole, Executive Golf Course (Zone C). Modified development activities are proposed in Zones A, B and C as noted below:</p> <p><u>Zone "A"</u> Joshua Tree Preservation Area. Existing trees to be preserved in place. Only exception shall be possible removal and/or relocation of Joshua Trees for future Challenger Way extension through the golf course. Approximately 72 Joshua trees are located in Zone A.</p> <p><u>Zone "B"</u> Joshua Tree Preservation Area. Existing trees to be preserved in place. Approximately 358 Joshua trees are located in Zone B.</p> <p><u>Zone "C"</u> Joshua Tree Preservation Area. The proposed 9-hole Executive Golf Course within Planning Areas CG-1 through CG-4 (see Figure 2-3, Land Use Plan and Project Summary) will occupy approximately 55 acres. Within the zone, 4 Joshua trees per acre shall be preserved in place and/or relocated within the boundaries of this area. Of this amount, 25 percent shall be preserved in place. Total number of Joshua trees to be preserved in place and/or relocated in Zone C is 220. Total number of Joshua trees to be preserved in place is 55.</p>
		<p>Overall, the project will maintain a minimum average of two healthy Joshua trees per acre (1,254 trees total).</p>
#25	Large areas of existing desert scrub shall be retained wherever possible as part of onsite landscaping.	
#26	Encourage the planting of drought resistant native shrubs and trees around the proposed buildings and golf course in order to minimize water usage and to provide quality wildlife habitat.	
#27	Project proponent shall ascertain and comply with any applicable requirements of the USFWS and CDFG.	

Table 1-1, Continued, Page 6 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
<u>LAND USE</u>		
The proposed project will result in the permanent loss of open space.	No	No mitigation recommended.
<u>SOCIOECONOMICS</u>		
Implementation of the Palmdale Business Park Center Specific Plan would increase Palmdale employment by approximately 10,110 jobs, population by 16,176 residents, and housing by 4,475 units.	Yes	No mitigations required.
The project would have a positive impact on job/housing balance in the Palmdale area.	Yes	No mitigations required.
<u>TRANSPORTATION</u>		
Increased traffic in project area. A total of 53,058 daily trips are expected to be generated by the proposed project at buildout.	Yes	#28 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.
<u>PUBLIC SERVICES</u>		
Construction and operation of project would increase the number of fire prevention, suppression, and medical emergency responses to the site.	Yes	#29 Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

Table 1-1, Continued, Page 7 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Yes	Mitigations
The proposed project would increase the number of law enforcement responses to the project area.	Yes	#30	Ensure that landscaping and other barriers around buildings do not obstruct views required to provide security surveillance.
		#31	Require adequate lighting of buildings and parking facilities during time of darkness in order to facilitate security surveillance.
		#32	Require the use of physical security measures, i.e., CCTV, card access, burglar alarms, as well as other electronic security measures as necessary to provide adequate security of the site and security for persons and property at the site.
The proposed project will indirectly generate increased student population.	Yes	#33	The project proponent shall mitigate school impacts to the extent and as authorized by State law, as applicable to commercial and industrial projects as required by the involved school districts.
<u>PUBLIC UTILITIES</u>			
The project would result in additional water usage demand of 1,780 acre-ft/year and need for additional storage capacity of 1.7 million gallons.	Yes	#34	Water and facilities must be in accordance with LACWWD #40 and City of Palmdale standards.
		#35	The project proponent will work with the LACWWD #40 and the City of Palmdale during detailed design, to integrate the water system serving the project into the City's water distribution plan and adjacent project water distribution plans.
		#36	Any water production, transmission or distribution improvements which directly serve the project will be financed and constructed by the project.
		#37	Building uses, heights, construction types, etc. must be evaluated and modified as necessary to assure that flows available from the distribution system meet or exceed the required flows set by the fire marshal.
		#38	Low flow plumbing fixtures, which at a minimum meet State Appliance Efficiency Standards in Title 20 shall be implemented in the project. This includes low-flow showerheads and toilets operating with less than 2 gallons per flush and the maintenance of waterline pressure at 50 psi or less.

Table 1-1, Continued, Page 8 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
Average daily sewer flows generated by Specific Plan would be approximately 1.3 million gallons per day at buildout.	Yes	<p>#39 Utilize landscaping standards which conserve water and incorporate the use of native desert vegetation and drought-tolerant plants.</p> <p>#40 The Palmdale Business Park Center shall be annexed to LACSD No. 14.</p> <p>#41 Sewage collection lines and facilities which will serve the project must be developed in accordance with the standards of the LACSD No. 14 and the City of Palmdale.</p>
		#42 During detailed design, the project proponent will work with the City of Palmdale to integrate the sewer system serving the project into the City's and LACSD No. 14's sewage collection system and adjacent development sewage discharge plans.
		#43 Any waste water collection or treatment system improvements which directly serve the project will be financed by the project proponent to the satisfaction of the appropriate jurisdictional agency.
Direct solid waste generation associated with the proposed project is 22,141 tons per year.	Yes	#44 The design and location of all solid waste collection areas shall conform to all applicable City standards, including adequate vehicular access, site-specific collection areas, and City standards regarding solid waste generation. Compaction and recycling shall be required. Storage and collection of recyclable materials (including compostable waste) shall be undertaken in coordination with the Palmdale Public Works Department and in compliance with Assembly Bill 939.
Increased need for electrical service.	Yes	#45 The design, location, construction phasing and installation of the electrical lines and facilities necessary to serve this project shall be developed in coordination with SCE. In addition, City requirements for underground utility placement shall be complied with.
Increased need for natural gas service.	Yes	#46 Construction plans for the installation of the natural gas service necessary for the buildout of this Specific Plan shall be developed in coordination with The Gas Company.

Table 1-1, Continued, Page 9 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
<u>HAZARDOUS MATERIALS</u>		
Generation of hazardous materials by industries within specific plan area.	Yes	<p>#47 Review all proposed industrial projects with the Los Angeles County Fire Department to assure that proper storage and handling methods for hazardous wastes are implemented.</p> <p>#48 Require procedural compliance with Article 96, Hazardous Waste Facilities of the Palmdale Zoning Ordinance for the proposed facilities or prohibit amounts of hazardous materials or wastes that meet the threshold standards contained in the California Health and Safety Code sections 25117 and 25141.</p> <p>#49 Restrict the routing of vehicles carrying potentially hazardous materials to the project site to State Routes 14 and 138, Sierra Highway, and to Avenue M.</p>
<u>NOISE</u>		
Increased noise levels during project construction.	Yes	
Increased noise generated by project operational activities.	Yes	<p>#50 Limit trash pickup to areas screened from public view and outside of yard setback areas. Screen all such areas with a combination of walls, berming and landscaping per City standards.</p> <p>#51 Limit the location of loading docks or staging areas to rear and side lot areas. These areas should be set back and recessed, and screened by a combination of walls, berms and landscaping from neighboring properties or streets. No loading or staging areas shall be located in any required setback areas.</p> <p>#52 Construct a landscaped berm or wall along edges of commercial parking lots facing public streets and adjacent property.</p> <p>#53 Construct berms whenever possible within landscaped setback areas adjacent to buildings and within parking areas in order to contain onsite noise.</p>

Table 1-1, Continued, Page 10 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
The impact of unacceptable onsite noise levels resulting from surrounding sources.	Yes	<p>#54 Light industrial and manufacturing land uses (PLI) that would result in onsite noise levels exceeding ambient levels or create a potential nuisance to adjacent facilities or businesses should only be permitted within enclosed buildings and limited to the designated PLI areas as proposed in the Specific Plan. These uses would include, but are not limited to manufacturing and assembly, wholesale/retail distribution and storage facilities, and automotive/light truck repair.</p> <p>#55 To ensure that the design and construction of all structures will comply with the interior noise standards of the State and City of Palmdale, construction plans are to be certified by a registered acoustical engineer as meeting all applicable standards. The certification shall consist of an acoustical analysis report submitted with the application for a building permit. The standards, as defined in the State Building Code (Part 2, Title 24, of the California Code of Regulations) and the City's General Plan Noise Element Table N-3 (Maximum Acceptable Levels). For the Project's proposed land uses the maximum acceptable interior noise levels are:</p> <ul style="list-style-type: none"> • Not to exceed an Leq(h) of 65 dBA averaged over the period, or hours ("h"), of operation within manufacturing, warehousing and wholesale facilities; and • Not to exceed an Leq(h) of 55 dBA averaged over the hours ("h") of operation within commercial, retail, or business office facilities. <p>#56 Project proponent shall grant an avigation easement over the project site. This easement would be forwarded to the USAF and the Los Angeles Department of Airports for review and comment and to the City for approval. A copy of the easements would be extended and made available to any owners, lessors, and renters of property within the specific plan area.</p>

Table 1-1, Continued, Page 11 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
<u>CULTURAL AND PALEONTOLOGICAL RESOURCES</u>	Yes	#57 No archaeological monitoring is recommended at this time. The proponent of the proposed project should, however, be prepared to permit a certified and qualified archaeologist to evaluate any prehistoric or historic resource which may be uncovered or otherwise identified as a result of any project within the current study area.
		#58 The evaluation process must conform to the requirements and guidelines for Phase II evaluations of prehistoric and/or historic resources, as presented in CEQA.
		#59 Upon completion of any evaluation (Phase II) the proponent must be prepared to forward the data through the Office of Historic Preservation for review and, if necessary, commit to a Phase III mitigation of impact study, should any resource be identified as significant or potentially eligible for nomination to the National Register of Historic Places.
		#60 No paleontological monitoring is necessary at this time. The proponent should, however, be prepared to permit recovery and evaluation of any paleontological resources identified during future activities within the project area.
		#61 The paleontologist must have the authority to halt any activities which are adversely impacting potentially significant or eligible resources.
		#62 Any paleontological specimens recovered from the property must be professionally handled, cleaned, analyzed, and curated.
		#63 All studies subsequent to this Phase I investigation must be professionally presented in a technical report, which in turn, will be made available for review at the appropriate repository (e.g., UCLA or the Los Angeles County Museum).
		#64 If resources are uncovered during any ground alteration activities, an archaeological and/or paleontological monitoring program should be established to prevent adverse impacts to additional resources.

Table 1-1, Continued, Page 12 of 12

Significant Impacts	Mitigable to a Level of Non-Significance	Mitigations
<u>AESTHETICS</u>		
Change in visual character of area.	Yes	#65 Future development within the specific plan area should provide view corridors to the golf course.

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2. PROJECT DESCRIPTION

2.1 THE PROPOSED PROJECT AND ALTERNATIVES

2.1.1 Proposed Project

The Lockheed Corporation is proposing commercial and industrial development and a 27-hole golf course on a 632.2-acre site located in the City of Palmdale. The project is proposed to be developed in 8 phases. It is anticipated that subdivision maps will be submitted to affect the phased development. It is also anticipated that a redevelopment agreement between the applicant and the City will be prepared in accordance with California Government Code Section 65865 et seq. and Palmdale Zoning Code, Chapter 10, Article 114. The project is known as the Palmdale Business Park Center. A Specific Plan for the project has been prepared and submitted to the City for review (David A. Price Associates 1994).

Palmdale is located in the "High Desert" area of Los Angeles County, about 60 miles north of downtown Los Angeles (Figure 2-1). The project site is located in the north-central portion of Palmdale, southeast of the intersection of Sierra Highway and Avenue M. It lies immediately northwest of Air Force Plant 42 (Figure 2-2). Except for a few dirt roads, the site is largely undisturbed.

The land use plan for the proposed project is shown in Figure 2-3. A total of 61.42 acres of community commercial land uses are proposed in the northern portion of the project site, along Avenue M. A business park would be located on a total of 26.15 acres in the center of the site. The business park would be surrounded by the proposed 9-hole Executive Golf Course which will occupy approximately 55 acres. The other 18-hole golf course would occupy most of the southern and western portions of the project site. Airport-related industrial uses would occupy the eastern portion of the site, adjacent to Air Force Plant 42. A total of 165.61 acres of light industrial uses would be placed in the remainder of the site. A small area (5.9 acres) of open space, associated with the proposed drainage system, would occur in the northeast corner. The acreages of the various land uses would be as follows:

Community Commercial	61.42
Business Park	26.15
Airport-Related	87.92
Light Industrial	165.61
Golf Course	225.76
Open Space	5.90
Street Right-of-Way	<u>59.45</u>
TOTAL	632.21

There are two small parcels not owned by the Lockheed Corporation and which are excluded from this project. The Los Angeles County Water Works District owns 7 acres along Avenue M and is using this property to construct water storage tanks. There is a privately held parcel of 5 acres on the south side of the project site. Development plans for this parcel are unknown.

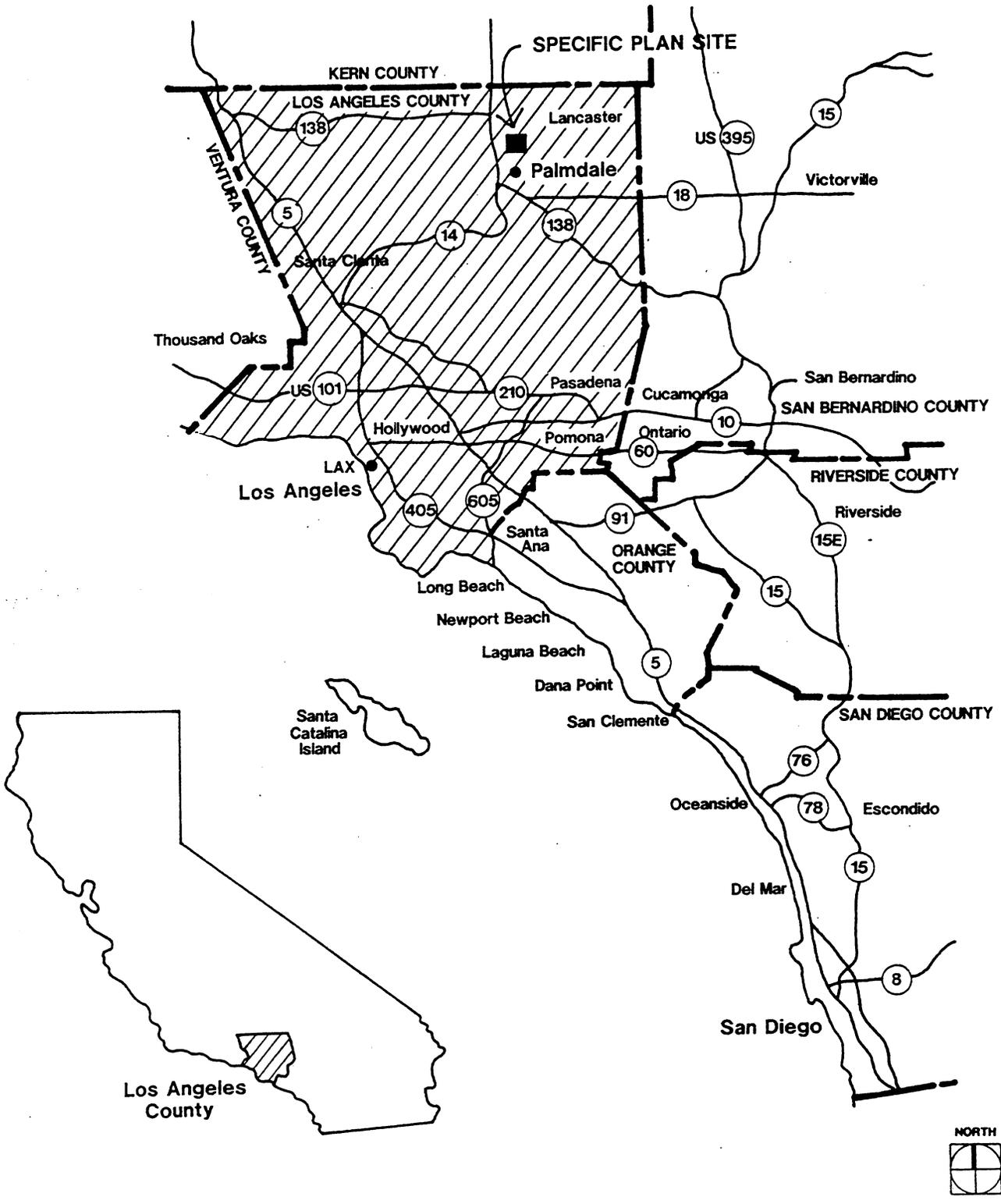


Figure 2-1: REGIONAL LOCATION MAP

Source: David A. Price Associates, 1994



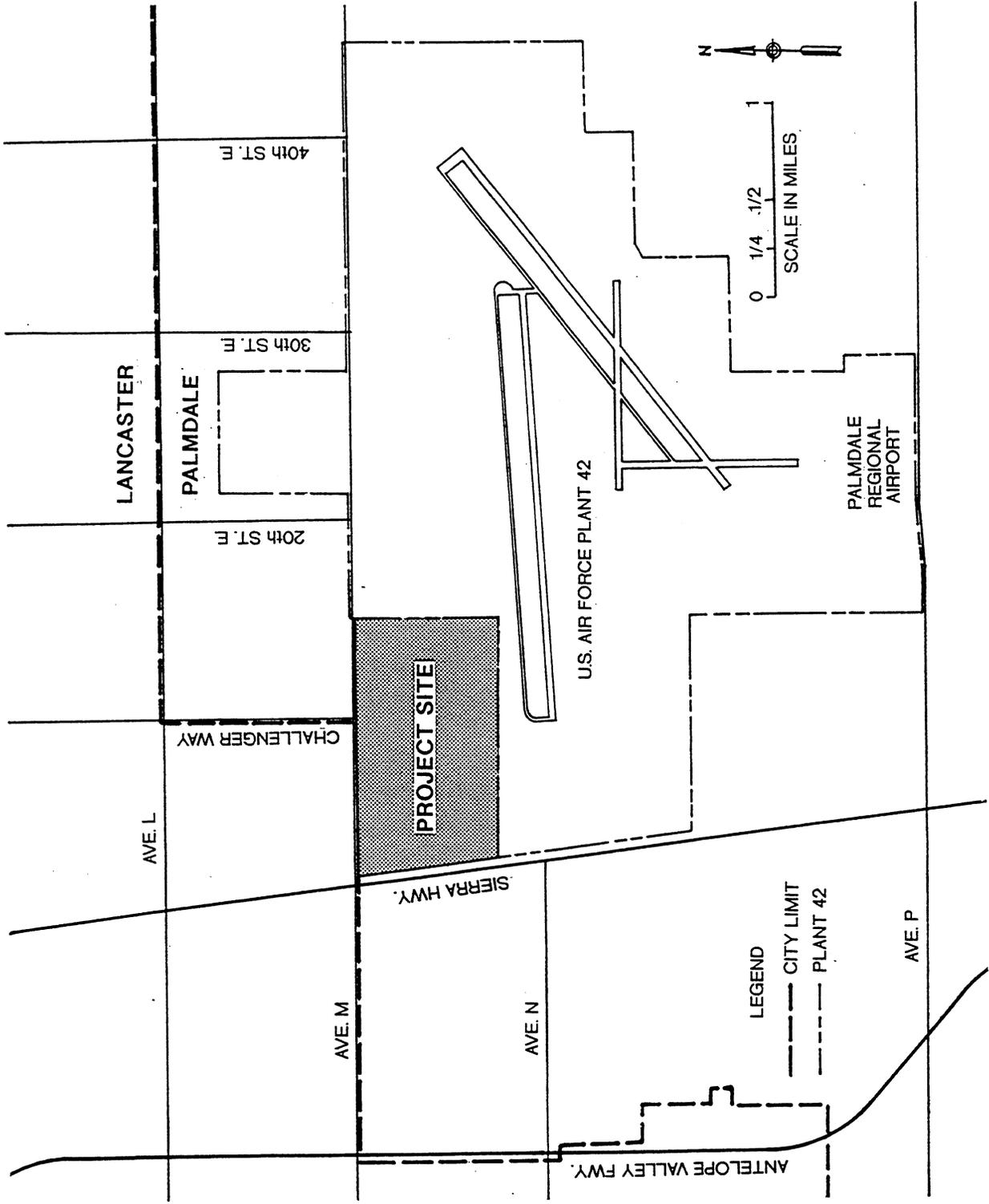


Figure 2-2: SITE LOCATION

Source: David A. Price Associates, 1994

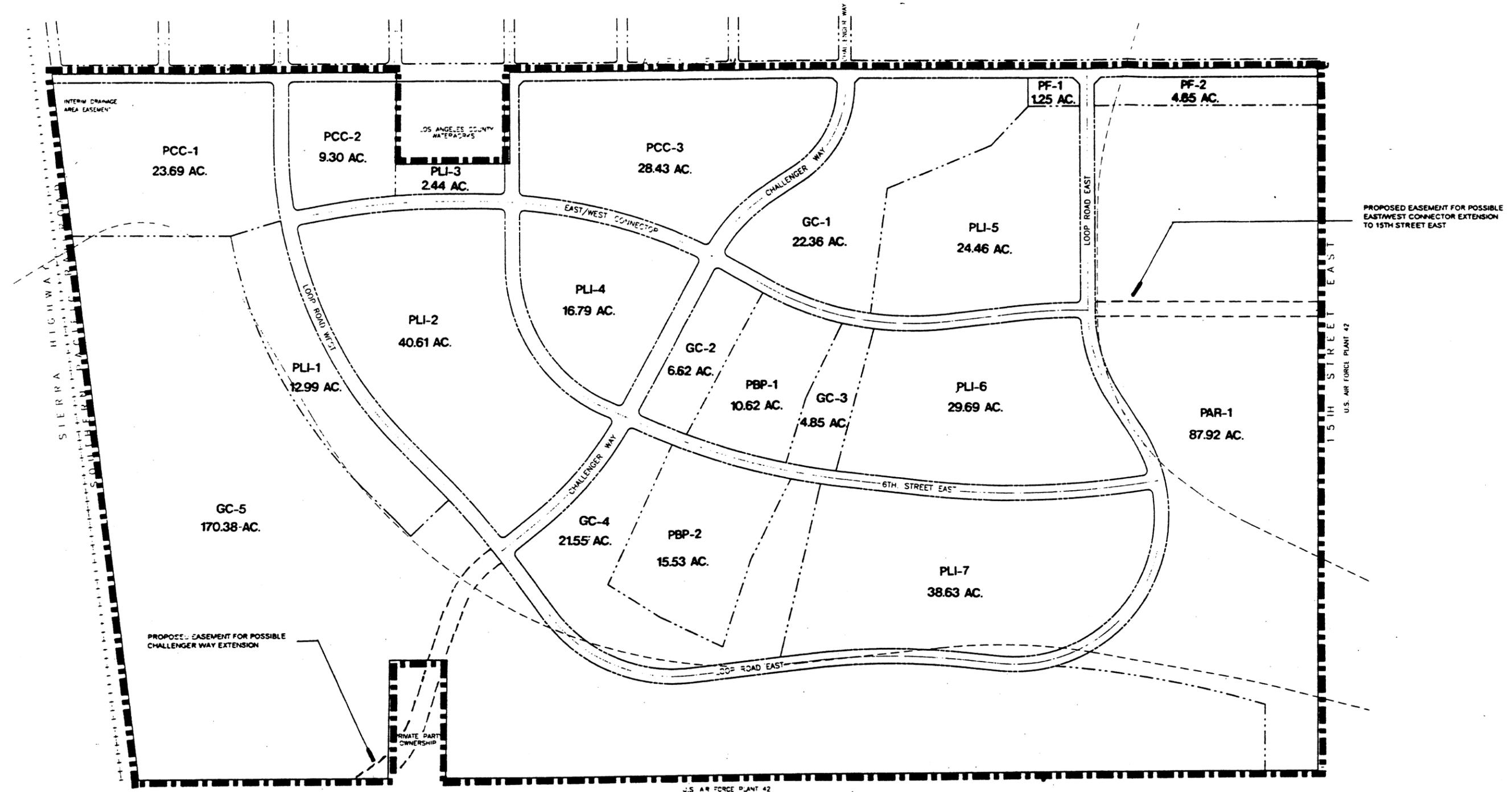
Access to the project site would be via Avenue M at a series of intersections as shown in Figure 2-4. Avenue M would be widened to 8 lanes. A road network of mostly 4-lane roads would provide internal circulation. The internal right-of-way widths would range from 66 to 98 feet. A drainage system would convey most upstream flows in a constructed drainage channel through the golf course to Avenue M. The flows would then be delivered to a planned regional detention basin immediately east of the project site. Water and sewer service would be extended to the project site and internal pipe systems constructed to serve project needs.

The Palmdale Business Park Center Specific Plan contains standards and guidelines for building setbacks, parking, streetscape, landscape, architecture and signage. Project monumentation and landscape themes would be installed at the major intersections.

The golf course use would consist of an 18-hole championship course and a 9-hole executive course, the latter surrounding the business park. A clubhouse would be constructed at the end of the Challenger Way road extension, in the southwest portion of the project site. Landscaping for the golf course would incorporate undisturbed areas of desert vegetation between the proposed fairways. Extensive stands of Joshua trees exist at the site. The project proposes to comply with the City's Joshua Tree and Native Desert Vegetation Preservation Ordinance (which requires a level for protection of Joshua trees) by leaving intact large numbers of the trees within the golf courses and transplanting trees from other disturbed locations on the project site. In addition to the requirements of the City's Joshua tree and Native Desert Vegetation Preservation Ordinance, the proposed project will also create special Joshua Tree Preservation and/or Restoration Zones in order to maximize the amount of Joshua Tree Preservation. Irrigation water for the golf courses would be provided by a private well which would be installed at the project site.

The project proposes to construct an aircraft taxiway along the eastern border of the project site. This taxiway would connect to the existing runway located on Plant 42, approximately 0.2 miles south of the project site. A variety of airport-related industry would be potentially supported at the project site, including aircraft assembly, aircraft maintenance and air cargo. The project would require specific federal approval from the Department of the Air Force to utilize the Plant 42 runway. The impacts of this project and other potential commercial aircraft uses of the Plant 42 airfield upon airport operations and airspace are currently being examined in a separate environmental document. A combined EIR/EIS is being prepared jointly by the Los Angeles County Department of Airports (Operator of the Palmdale Regional Airport, which is an existing civilian use of the Plant 42 airfield) and the United States Air Force.

The project would be constructed in eight phases. For planning purposes, the first phase would start in the mid-1990s. Subsequent phases would be constructed over a period of approximately 25 years. Market demand conditions will determine the actual timing of the individual phases, however, and the start and completion of individual phases may overlap in time. Figure 2-5 shows the project phasing plan. The first phase of the project would be golf course construction. Golf course construction for both golf courses is expected to require grading on a total of approximately 145 acres. This represents the largest phase of grading for the proposed project. The community commercial and the western-most area of light industrial would be developed next. The development phases would then proceed easterly across the project site.



PALMDALE BUSINESS PARK CENTER

SPECIFIC PLAN
PALMDALE, CALIFORNIA

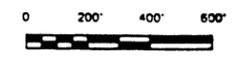
LOCKHEED CORPORATION

4500 PARK GRANADA BLVD
CALABASSAS CA. 91339-0220
(818) 876-2212

PROJECT SUMMARY

PALMDALE COMMUNITY COMMERCIAL		PALMDALE AIRPORT RELATED		GOLF COURSE	
PCC-1	23.69	PAR-1	87.92	GC-1	22.36
PCC-2	9.30			GC-2	6.62
PCC-3	28.43			GC-3	4.85
SUBTOTAL	61.42 AC.	SUBTOTAL	87.92 AC.	GC-4	21.55
				GC-5	170.38
				SUBTOTAL	225.76 AC.
PALMDALE BUSINESS PARK		PALMDALE LIGHT INDUSTRIAL		PUBLIC FACILITIES	
PBP-1	10.62	PLI-1	12.99	PF-1	1.25
PBP-2	15.53	PLI-2	40.61	PF-2	4.65
SUBTOTAL	26.15 AC.	PLI-3	2.44	SUBTOTAL	5.90 AC.
		PLI-4	16.79	STREET RIGHT OF WAY	59.45 AC.
		PLI-5	24.16	TOTAL	632.21 AC.
		PLI-6	29.69		
		PLI-7	38.63		
		SUBTOTAL	165.81 AC.		

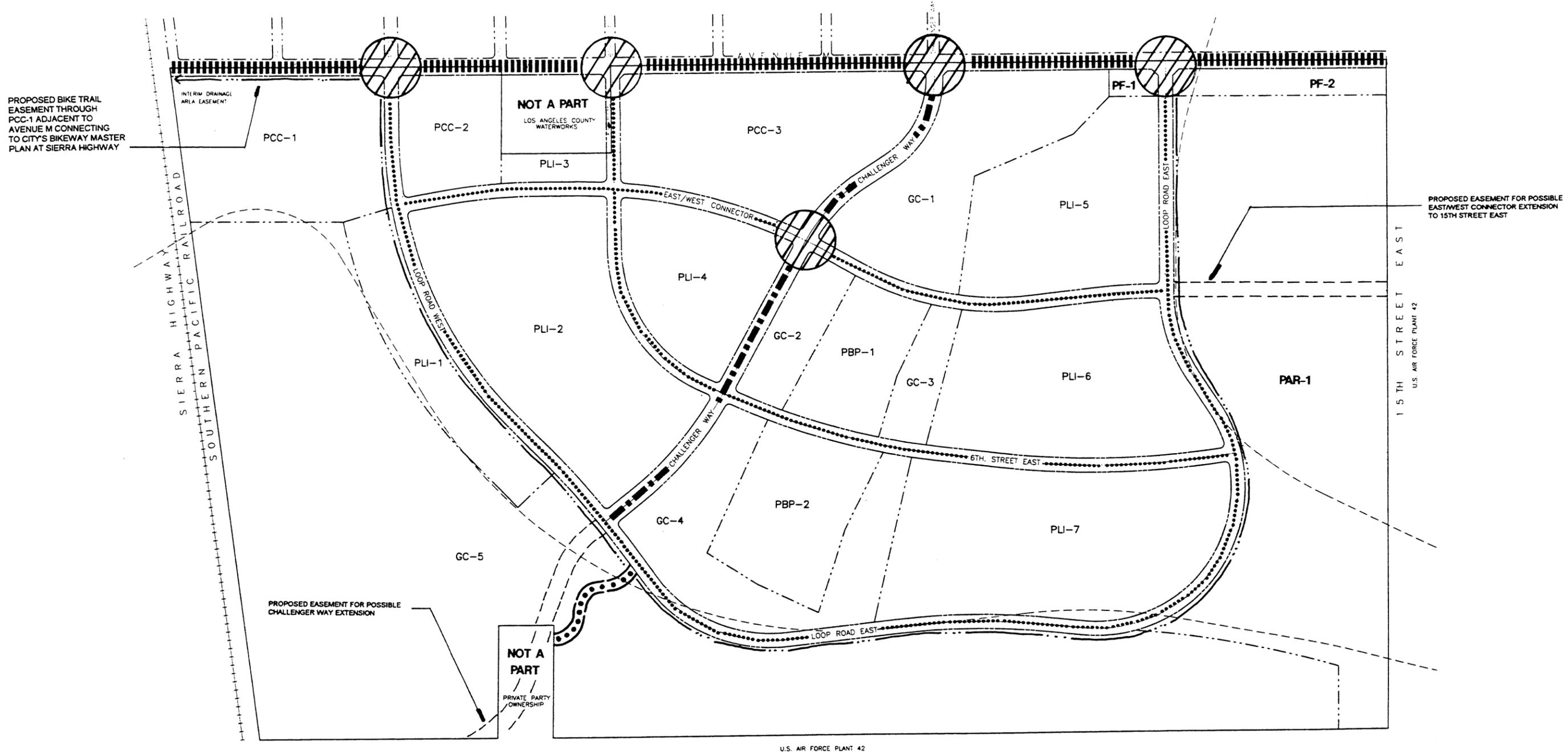
DECEMBER 15, 1994



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Figure 2-3: LAND USE PLAN AND PROJECT SUMMARY

Source: David A. Price Associates, 1994



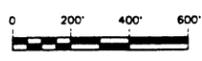
PALMDALE BUSINESS PARK CENTER

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PALMDALE, CALIFORNIA

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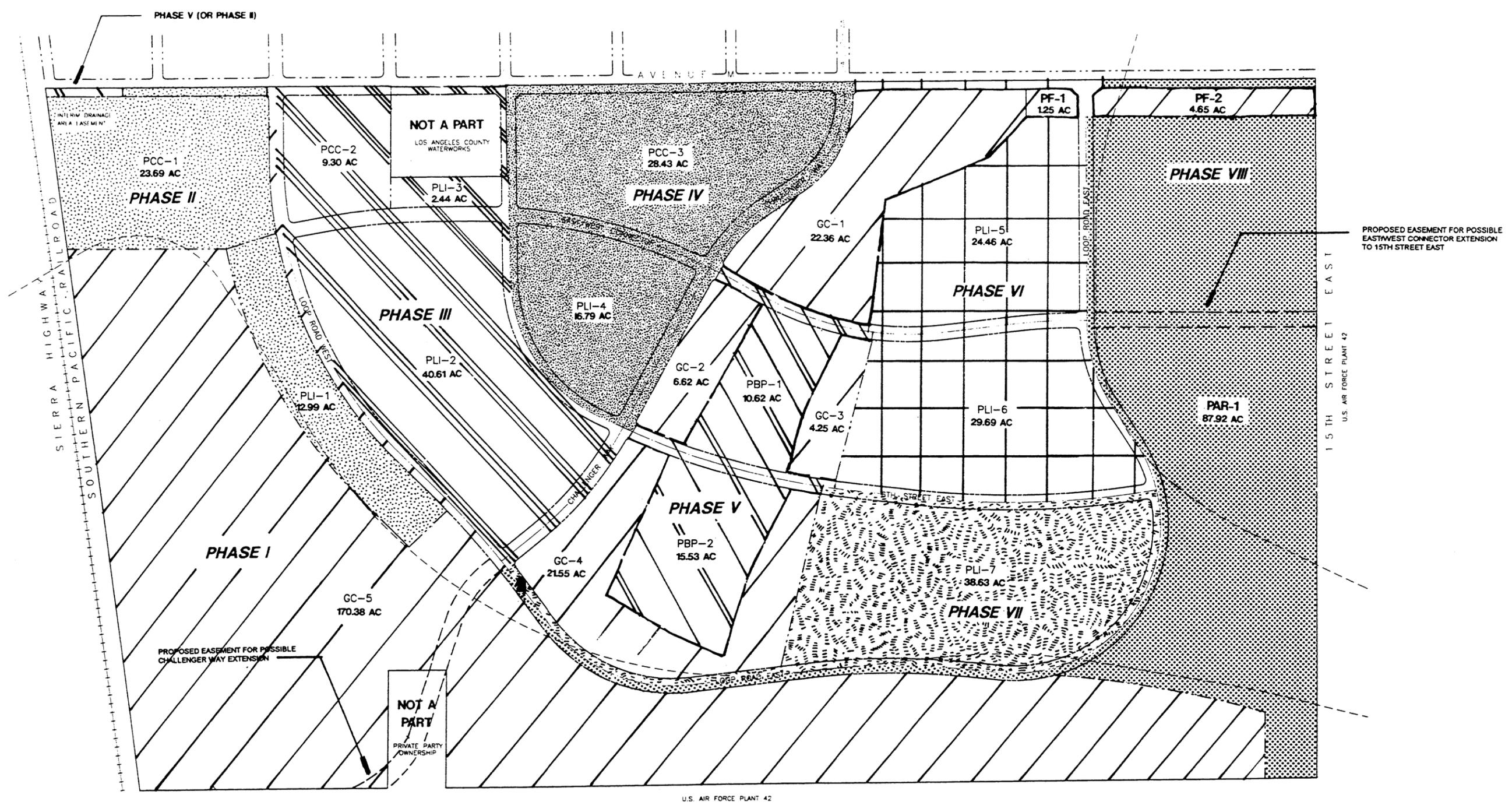
-  ARTERIAL / 8 LANES DIVIDED WITH MEDIAN Avenue M
-  ENHANCED COLLECTOR / 4 LANES DIVIDED WITH MEDIAN
Extension of Challenger Way
-  INDUSTRIAL / COMMERCIAL COLLECTOR
East/ West Connector, extension of 6th Street East, Loop Road East and West
-  PER SITE PLAN LOCAL COMMERCIAL / INDUSTRIAL STREETS Internal Locals
-  26' PAVED ACCESS ROAD
-  ANTICIPATED SIGNALIZATION
-  BIKE TRAIL

DECEMBER 15, 1994



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Figure 2-4: PROJECT CIRCULATION PLAN
Source: David A. Price Associates, 1994



PALMDALE BUSINESS PARK CENTER

SPECIFIC PLAN
PALMDALE, CALIFORNIA

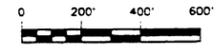
LOCKHEED CORPORATION

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LEGEND

	PHASE I (1996)		PHASE V (2009)
	PHASE II (1997)		PHASE VI (2013)
	PHASE III (2001)		PHASE VII (2017)
	PHASE IV (2005)		PHASE VIII (2021)

DECEMBER 15, 1994



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Figure 2-5: PHASING PLAN FOR THE PROJECT

Source: David A. Price Associates, 1994

2.1.2 Alternatives

Four alternatives to the proposed project are examined in Section 4. These are briefly summarized below.

1. No-Project Alternative -- Under this alternative, the proposed golf course would be developed. However, the remaining portion of the project site would be developed with an even mix of industrial and airport-related uses. This would result in a slightly greater intensity of use at the project site.
2. Elimination of the Golf Course -- Under this alternative the proposed golf course would not be developed. Instead, the 236 acres associated with this use would be left as open space.
3. Development of the Project at Another Site -- Under this alternative, the general size and land uses proposed by the project would be developed at another site in the general vicinity of Plant 42, within the City of Palmdale or its Sphere of Influence. This site selected is a 422-acre parcel of land owned by the Los Angeles City Department of Airports. It is located to the south and east of the proposed project site.
4. The No-Development Alternative -- Under this alternative, no development of the project site would no occur. The project site would remain undeveloped and in its existing state, with no further ground disturbance.

2.2 OBJECTIVES OF THE PROJECT

The primary objective of the project is to provide for the orderly development of the project site in a manner which meets the requirements of the Palmdale General Plan. The General Plan identifies the site as a specific plan area. Specific land uses for the site are anticipated in the general plan to be designated through the development of a specific plan, that is, the review process for the proposed project. The land uses surrounding the project site are generally commercial or industrial. The site is subject to high noise levels. The land uses proposed for the site have been laid out with the objective of achieving compatibility with these development constraints.

Other objectives identified for the project include:

- Provide employment opportunities within the City of Palmdale.
- Develop a project that is compatible with the potential expansion of the adjacent Palmdale Regional Airport.
- Assure that needed public services and utilities are available in a timely manner to meet project needs.
- Assure that project design is compatible with the City's Master Plan of Drainage and the City's Circulation Plan.

2.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

Impacts to cultural and paleontological resources are not considered significant. In addition, impacts to certain public utilities including wastewater, natural gas, electricity, and telephones are not considered significant.

2.4 ISSUES OF CONCERN

An Initial Environmental Study for the proposed project has been previously prepared and circulated. Based upon that study and comments received, the following environmental issues have been determined to be impacted in a potentially significant manner and are specifically addressed in this document.

Geology and Soils -- The project site covers 632 acres, most of which would be disturbed by the project. In addition, the project site lies within a region subject to severe earthquakes. The EIR examines the seismic hazards to the project and the potential for wind and soil erosion.

Air Quality -- Project construction would generate exhaust and dust emissions. After development, large number of trucks and automobiles would travel to and from the site. The impacts of these air emissions upon regional air quality is examined.

Water Resources -- The project would utilize large quantities of water in an area with limited water resources. The effects of the project upon local and regional drainage could be substantial and are also reviewed.

Biological Resources -- Project development would disturbed hundreds of acres of relatively undisturbed desert vegetation. The project site supports dense stands of Joshua trees and may provide suitable habitat for the desert tortoise and the Mohave ground squirrel, both listed animal species.

Land Use -- Project compatibility with the City's General Plan and with surrounding land uses are important issues which are reviewed in this document.

Socioeconomics -- The project would generate thousands of new jobs. The effect of the project on local and regional jobs and population growth are examined. Project conformance with the Regional Growth Management Plan is also reviewed.

Transportation -- The project would generate large numbers of workers and visitors which would travel to the site daily. The impacts upon the surrounding road system and compatibility with the County Congestion Management Plan are examined.

Public Services -- The project would create direct and indirect demands for public services. This document examines project impacts upon the following public services: police, fire, parks and schools.

Public Utilities -- Utility extension would be required to service the project site. Direct and indirect demands for utilities may strain the capacity of the utility providers. This document examines project demands upon the following utilities: water supply, sewer, natural gas and electricity.

Hazardous Materials -- Potential developments within the project site, particularly airport-related industry, may utilize hazardous materials and generate hazardous wastes. This document identifies the types of hazardous materials and wastes which may occur and generally evaluates the adequacy of the existing regulations governing their transport, handling and disposal.

Noise -- Much of the project site is subject to high ambient noise levels. In addition, the project may generate substantial noise. These impacts are evaluated in this document.

Cultural and Paleontological Resources -- Project development would disturb hundreds of acres of relatively undisturbed area. The potential for disturbance of important cultural or fossil resources is examined.

Visual Resources -- The project site offers foreground views of desert landscape and distant views of the San Gabriel Mountains. Project development could substantially alter these views and its visual effects are examined.

2.5 USE OF THIS DOCUMENT

This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, Section 21000, et seq.); the State Guidelines for Implementation of the California Environmental Quality Act 1970, as amended (California Administrative Code, Title 14, Section 15000, et seq.); and the California Environmental Quality Act Guidelines as amended, adopted by the City of Palmdale.

The City of Palmdale is the Lead Agency for the project and has the authority for preparation and certification of this EIR. Information contained in this EIR is intended to serve as an informational document to be used by the City of Palmdale in the review and adoption process of the Palmdale Business Park Center Specific Plan and by other responsible agencies. Mitigation measures have been identified to reduce potential adverse impacts, where possible, to below a level of significance.

In accordance with Section 15063 of the State CEQA Guidelines, the City of Palmdale prepared an Initial Study for the proposed project and distributed it, along with the Notice of Preparation (NOP) for the EIR, to the State Clearinghouse, responsible agencies and other interested parties. The objective of distributing the NOP was to identify and determine the full range and scope of environmental issues so that they could be adequately addressed by the EIR. The text of the NOP is contained in Appendix A.

Following adoption of the Specific Plan it is anticipated that future projects will be proposed for development at the site. This EIR will serve as the primary environmental document for the evaluation of future projects proposed for the specific plan area. Site-specific development applications will be evaluated by the City of Palmdale. The City may determine that further environmental documentation is necessary for a particular project, and may require a Subsequent or Supplemental EIR, pursuant to CEQA Guidelines.

No permits are required for the adoption of the Palmdale Business Park Center Specific Plan. The design and installation of a septic tank system for the initial development (and associated infrastructure) of the golf course and associated clubhouse will require approval of a conditional use permit from the City of Palmdale and shall be in accordance with the Los Angeles County Health Department and the DWR and shall be coordinated to the satisfaction of the district boards. The septic tank systems shall be in place until such time as the sanitary sewer service is extended to the project site. However, the use of the septic tank system shall be terminated if such use is deemed in violation of any health regulations and/or any ordinance prohibiting such use. Commercial and industrial development (and associated infrastructure) that would occur following plan adoption would require a variety of permits, possibly including air quality, road and highway encroachment, streambed alteration, sewer discharge, stormwater and hazardous materials/waste storage. Permit requirements would be evaluated on a project-by-project basis.

3. EXISTING CONDITIONS, IMPACTS, AND MITIGATIONS

3.1 GEOLOGY/SOILS

3.1.1 Existing Conditions

The project site lies in the Antelope Valley which is a part of the Mojave structural block. The Mojave structural block is an elevated desert lying between 2,300 and 3,500 feet above mean sea level. The Antelope Valley is surrounded by the Tehachapi Mountain range in the north and northwest, and the San Gabriel, Sierra Pelonas and Liebre Mountains to the south and southwest.

The Antelope Valley consists primarily of up to 4,000 feet thick alluvial fill underlain by consolidated rocks. The rocks are mostly exposed in the mountain ranges. The consolidated rocks consist of pre-Tertiary aged igneous, metamorphic rocks, and continental rocks interbedded with volcanic flows of Tertiary age. The basement is formed by the oldest formation which consists of quartz monzonite, granite, gneiss, schist and other igneous and metamorphic rocks. The rocks overlying the basement primarily consist of shale, sandstone, conglomerate and silt stone.

Immediately underlying the modern ground surface are several hundred feet of Quaternary (Pleistocene and Holocene) alluvium deposited as fans emanating from the San Gabriel Mountains. Although generally dense, these deposits are not cemented as are the subjacent Tertiary sedimentary rocks. The Quaternary sediments are generally medium to coarse-grained sands and gravels whose constituents reflect rocks composing the San Gabriel Mountains. Local thin fine-grained units occur in the sediments. Such are probably the result of soil-forming processes or localized lacustrine (lake) environments formed during past periods.

The local geology reflects the regional in that Quaternary alluvium immediately underlies the site. Fifteen borings, to 40± feet were taken at the project site (Pacific Soils Engineering 1992). The soils encountered are predominantly clean to silty, fine to coarse-grained sand, with scattered to concentrated gravel. Smith (1979) indicates total depth of alluvium in the area to be about 600 feet. Generally, except for a near-surface disturbed horizon, the deposits were relatively dense. Occasional reddish fine-grained beds, one to several feet thick were encountered, possibly old lakebed deposits.

The project site slopes gently to the northeast. The high point is approximately 2,551 feet above mean sea level at the southwestern corner and the low point of approximately 2,487 feet above mean sea level at the northeastern corner. There is a well defined channel through the northwestern corner of the site and two lesser drainage swales to the east. Average slope across the site is less than 1 percent. Annual rainfall in the area is about 5 inches. The area is drained by ephemeral washes that empty into Rosamond and Rogers dry lakes.

Figure 3.1-1 shows the soils that exist on the site. The soil classification is based on the U.S. Department of Agriculture Soil Conservation Service (1970). According to the Soil Survey, the surface soil on the project site is composed of two primary components namely Hesperia-Rosamond-Cajon association and Adelanto association.

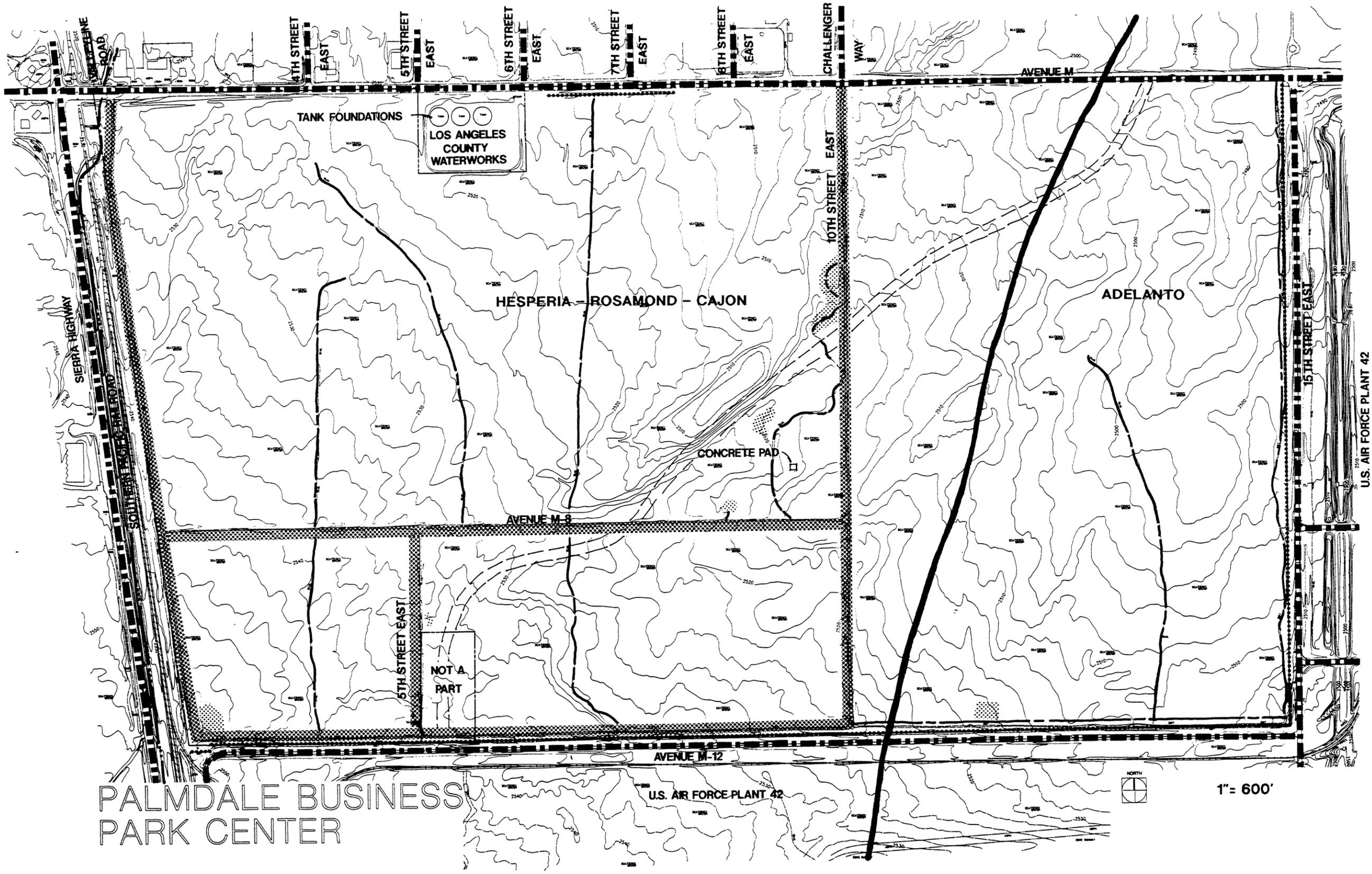
Hesperia-Rosamond-Cajon association consists of 40 percent Hesperia soils, 30 percent Rosamond soils, 25 percent Cajon soils, and 5 percent Arizo soils and Riverwash. They are formed in alluvium from granitic rock and are found on Holocene alluvial fans. Hesperia soils are pale brown and well drained with a surface of slightly acid loamy fine sand to loam. Underneath, the soils are mildly alkaline fine sandy loam and sandy loam. Common salts of calcium are important soil minerals, and in Palmdale where evaporation is much greater than precipitation, salts such as calcite can accumulate. Thus Hesperia soils are calcareous in the lower part. Rosamond soils are light brownish gray and pale brown and moderately well drained. They are mildly to moderately alkaline, with stratified loamy fine sands to silty clay loams and calcareous in the lower part. Cajon soils are very pale brown and excessively drained. The surface soil is neutral loamy sand and loamy fine sand. Below is mildly alkaline fine sand over moderately alkaline sand. These soils are calcareous in the lower part. This association consists of very deep soils that have loamy and silty clay loam surfaces found on nearly level to sloping land which is moderately well to excessively drained. The soils are used mainly for pasture, orchards, and cultivation of irrigated alfalfa, small grains, and sugar beets. Native vegetation includes annual grasses, forbs, Joshua trees, Mormon tea, and rabbitbrush.

The Adelanto association consists of 90 percent Adelanto soils. Mojave soils make up 5 percent and Cajon and Hesperia soils make up the remaining 5 percent. Adelanto soils are brown and light brown in color and are slightly acid and neutral loamy sand to gravelly sandy loam. This association is found on nearly level to gently sloping grounds on alluvial fans and terraces. It is made up of well drained and very deep soils with a loamy sand or gravelly sandy loam surface layer. These soils have formed in alluvium derived from granitic rock. This association is appropriate for irrigated crops, for limited grazing in spring, as wildlife habitats, and for urban uses. Vegetation is mainly annual grasses and forbs. Desert stipa, sagebrush, creosote bush, Joshua trees, and junipers grow in some areas. These soils are found only in the far eastern portion of the project site.

In general the project area soils have a moderate to high water infiltration capacity and only slight to moderate limitations for septic tank disposal of wastewater.

Seismic hazards are an issue in the Antelope Valley area. Construction would not induce seismic hazard, but the naturally occurring earthquakes contribute to the seismic hazards in the area. The project site is located in an active seismic region. However, the project site is not located within a designated Alquist-Priolo Special Studies Zone (see Figure 3.1-2) which regulates the minimum horizontal distances between habitable structures and the surface trace of seismically active faults. Figure 3.1-2 shows the major faults near the proposed project. The most important fault, the San Andreas Fault, lies 6 miles southwest of the project site.

Continuous deformations along the San Andreas fault due to relative movement of crustal plates (5 to 6 centimeters per year) can trigger periodic earthquakes of magnitude of up to 8.0 on the Richter scale. This fault makes the region vulnerable to the earthquake hazards such as groundshaking, fault rupture and soil liquefaction. The potential for soil liquefaction at the site during an earthquake is considered low to nil by the geotechnical consultant. The potential for ground rupture as a direct result of faulting (i.e. fault offset of the surface) at the site is no higher than for most other areas of Palmdale and is considered low. In addition to the nearby San Andreas fault, other faults in the region capable of producing a major earthquake include the Sierra Madre-

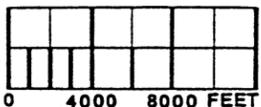
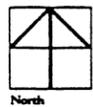
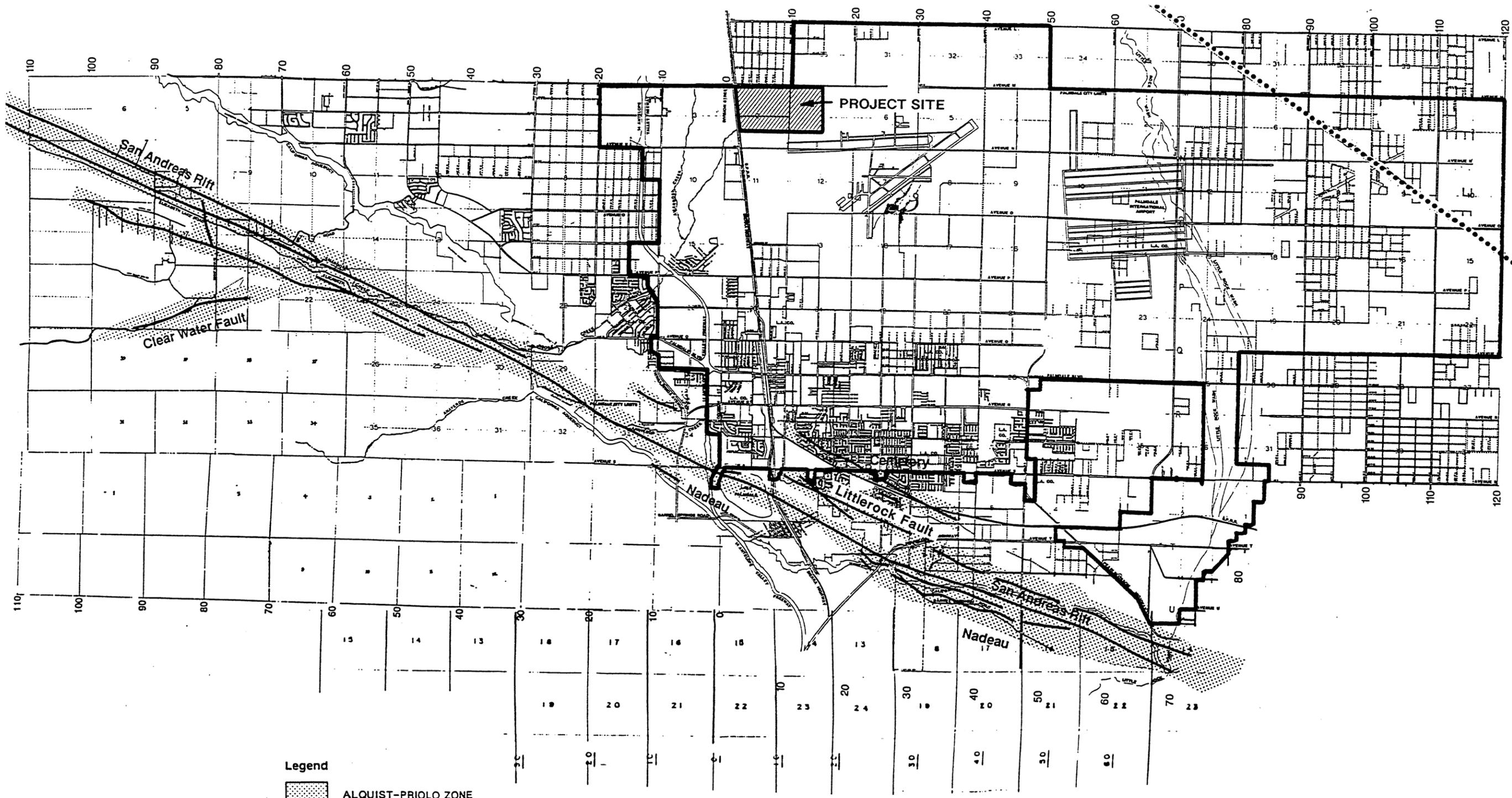


PALMDALE BUSINESS
PARK CENTER

LEGEND

- | | | | |
|--------|-----------------|-------------|------------------------|
| ▬▬▬▬▬▬ | PAVED ROAD | ▬▬▬▬▬▬ | EXISTING SITE DRAINAGE |
| ▨▨▨▨▨▨ | MAJOR DIRT ROAD | ⋯⋯⋯⋯ | CHAIN LINK FENCE |
| ▬▬▬▬▬▬ | MINOR DIRT ROAD | — · — · — · | DRAINAGE CHANNEL |
| | | ▨▨▨▨▨▨ | DUMP AREA |

Figure 3.1-1: SOIL ASSOCIATIONS AT THE PROJECT SITE
Source: David A. Price Associates, 1994



Legend

-  ALQUIST-PRIOLO ZONE
-  RELATIVE FAULT LOCATION
-  SEISMIC SHAKING ZONE

Figure 3.1-2: EARTHQUAKE FAULT ZONES
 Source: Michael Brandman Associates, 1992

San Fernando, Garlock, Owens Valley, and White Wolf faults. Table 3.1-1 shows the potential magnitude of earthquakes from the major faults found in the region.

Table 3.1-1
FAULT MAGNITUDES

Fault	Maximum Probable Magnitude (Moment) ⁽¹⁾	Condition	Recurrence Interval (years)
San Andreas	8.0+	APSSZ ⁽²⁾	50-200
Sierra Madre-San Fernando	6.6	Active ⁽³⁾	50-200
Garlock	7.5	Active	500-700
Owens Valley	7.4	Active	850-900
White Wolf	7.2	Active	300

- Notes:
- (1) The Moment Magnitude is preferred to the Richter Magnitude for earthquakes larger than magnitude 6. As the magnitude surpasses 6.5 m (Richter), all events begin to take on the same magnitude value. The Moment Magnitude keeps in integrity and delineates the different values greater than magnitude 6.5.
 - (2) Alquist-Priolo Earthquake Fault Zone.
 - (3) Active faults are faults which have moved within the last 11,000 years. Inactive faults are faults which have not moved in the last 1.6 million years and potentially active faults are those that have moved within the last 10,000 to 1.6 million years.

The Hitchbrook fault is located 1.0 to 1.5 mile southwest of the project site. This is considered to be a minor fault that is buried by a thick section (60-80 feet) of undisturbed alluvium. This fault is thought to affect only older alluvium and is not considered active.

3.1.2 Project Impacts

Seismic and Geohazards. There are several potential geohazards which would not be a problem at the project site. The depth to groundwater at the project site is over 300 feet. The site is therefore not subject to liquefaction hazards. The average slope is about one percent and there are no substantial slopes greater than 5 percent. Slope stability is therefore not a factor in site development.

Ground subsidence related to groundwater pumping has been reported in the Lancaster area in the past (Los Angeles County Engineer 1974). An area located along the boundary between Palmdale and Lancaster, four miles northeast of the project site has experienced the highest amount of subsidence in the Palmdale area: over one foot. The project site is classified as lying within an area of low to moderate subsidence (0.1 to 0.5 foot). One option for supplying water to the project golf course would be to pump local groundwater (refer to Section 3.3.2). The withdrawal of approximately as much as 780 acre-ft/yr for golf course irrigation would not adversely affect the limited subsidence experienced in the area surrounding the project site.

No known faults cross the project site. Therefore there is minimal potential for ground rupture during earthquakes. However, earthquakes of large magnitude can produce severe groundshaking in the project area. Such groundshaking can cause extensive damage to buildings, utilities, natural slopes, and cut and fill slopes. Groundshaking produces additional forces on manmade structures, and the magnitude of these forces depend on engineering properties of structural materials, distance from earthquake focus point, magnitude of earthquake, local geology, and duration of earthquake. Greater shaking can be expected at a site with poorly consolidated materials such as alluvium which underlies most of the project area.

The magnitude of groundshaking at a site is expressed in terms of peak acceleration relative to gravitational acceleration(g). In general, the greater the ground acceleration, the greater the seismic forces on buildings. The General Plan EIR identifies the project site (along with most of Palmdale) as lying within seismic Zone I, which is likely to experience severe acceleration greater than 0.5g. The Geotechnical Report for the project estimates that buildings at the project site could experience peak horizontal acceleration of 0.89 (Pacific Soils Engineering 1992). Although the maximum probable magnitude of an earthquake can cause severe damage to structures, roads and utilities, the safety hazards to building occupants can be adequately mitigated if structures are designed to meet the earthquake-related requirements of the Uniform Building Code (Section 2312). The City requires that buildings be designed to the Uniform Building Code, thus assuring adequate safety.

Related City development standards and policies include:

- Emergency facilities and sites with explosive and toxic materials must adhere to more restrictive seismic safety construction. Public emergency facilities would be permitted under the community commercial land use category while the use of explosive and toxic materials would only be permitted under the airport-related industrial land use category.
- All structures shall meet or exceed state required earthquake resistant design standards.

Soils. According to the geotechnical consultant, the project site can accommodate the type of development proposed. It is anticipated that areas to contain structures will require removal of near surface soils (3± feet) and replacement with compacted fill in order to mitigate the effects of settlement and potential hydro-consolidation.

The project site will have a low water erosion potential. With an average slope of less than one percent, water erosion is not expected to be a serious problem. Standard construction measures required by the City, such as diversion of upgradient flow around the construction site and stabilization/revegetation of all disturbed areas will adequately control water erosion.

In contrast, wind erosion of exposed soil, and resultant dust, are serious problems in the project area. The Antelope Valley can experience high winds. The dry, loamy or sandy soils are highly vulnerable to wind erosion, particular following excavation. Site clearing, grading, and movement of construction equipment potentially increase wind erosion thus significantly increasing dust generation. Dispersion of dust depends on the wind velocity, consistency of wind direction and density of soil particles. Wind erosion can be reduced by watering the site during construction,

avoiding land clearing during windy periods and mulching of exposed soil to stabilize it against wind erosion.

The initial phase of the project would be golf course construction. This would involve the clearing of land for greens, fairways, a driving range and a clubhouse and parking lot. Even with mitigations such as watering, some dust generation would be unavoidable. This is discussed in Section 3.2.2. However substantial soil erosion is not expected. The fairways and greens would be planted and irrigated soon after grading. The exposed areas around the clubhouse would be paved or landscaped within a few months. Wind erosion would be a short-term phenomenon, lasting only during construction. Significant soil losses would therefore not occur.

Similarly, proper construction practices in subsequent project phases can minimize soil losses. Grading should be confined to the minimal area needed for construction of a particular project or phase. Clearing and grading can be timed to occur just ahead of actual construction. Revegetation, mulching or other soil stabilization measures should be carried out as soon as practical after construction. Grading operations should cease if wind conditions are such that watering or other management practices cannot adequately control dust from the project site. These and related measures can be incorporated into the grading plan for each specific project which is approved by the City.

3.1.3 Mitigation Measures

In addition to the policies and development standards discussed above, the following mitigations shall be carried out.

- #1 Site development shall proceed incrementally to minimize the amount of disturbed land at any given time. No more than one planning area shall be graded at one time unless approved by the City of Palmdale.
- #2 Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.
- #3 The following dust control mitigations shall be applied during construction in order to reduce wind erosion. Some of these mitigations include:
 - twice daily watering of active construction sites by sprinklers or water trucks to inhibit wind erosion;
 - addition in mixtures of compounds to aid in binding soil particles; and
 - mulching of soil for stabilization.
- #4 All disturbed areas shall be revegetated for erosion control in accordance with City standards.
- #5 Seismic studies shall be required for approval prior to construction of critical use facilities such as emergency services or communications centers or auditoriums.

These uses would only be permitted in the community commercial or airport-related land use categories. Appropriate seismic safety design must be implemented.

3.1.4 Impacts After Mitigations

With these mitigations measures, seismic hazards and soil erosion impacts due to the project would be reduced to nonsignificant levels.

3.2 AIR QUALITY

3.2.1 Existing Conditions

3.2.1.1 Regional Setting

The Palmdale Planning Area lies within the Southeast Desert Air Basin (SEDAB). The SEDAB, one of the largest air basins in California, encompasses portions of Los Angeles, Kern, San Bernardino, Riverside, and Imperial counties. Although the Antelope Valley is separated from the highly populated and highly urbanized South Coast Air Basin (SoCAB) by the San Gabriel Mountain Range, the Antelope Valley is often the recipient of ozone and related pollutants generated in the SoCAB. To control these pollutants, the project area falls within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) with no distinction made between the two geographically separate and meteorologically unique air basins.

The SCAQMD has prepared an Air Quality Management Plan (AQMP) for the SoCAB to meet clean air standards. Since this plan was adopted in 1989, SCAQMD has applied the document to both the SoCAB and the SEDAB portions of the District. The provisions of the AQMP are applicable to Palmdale and the rest of the Antelope Valley.

The AQMP, last amended in 1991, contains "control measures" that are intended to improve air quality throughout the region. At the present time, the AQMP contains approximately 40 currently implementable, or Tier 1, control measures which affect local governments. These control measures range from eliminating leaf blowers to implementing trip reduction programs. Involvement by local government to implement these measures varies but may include providing enforcement of future district rules, adoption of ordinances, and modifications of local general plans.

The AQMP recognizes that there will be population and economic growth in the area and has recommended that air pollution control strategies take this into account. Downwind areas, such as Palmdale, should be allowed the same opportunities for relative growth as other areas in the two air basins. It is also assumed in the AQMP that equal control efforts will be exerted by all communities. The result of this approach is that all areas within the AQMP will need to achieve a higher level of emissions control if air quality standards are to be attained.

Climate. Climate and air quality are determined by the location, topography, and urbanization of an area. The climate of the southeast desert, as that of all Southern California, is governed by the strength and location of a semi-permanent, subtropical, high pressure cell over the Pacific Ocean. In general, the climate for the majority of the region is characterized by hot summers, cold winters, infrequent rainfall, active air movement, and very low relative humidities.

The pattern of mountains and valleys are primarily responsible for the wide variety of rainfall, temperatures, and localized winds that occur throughout the SEDAB region. Temperature variations have an important influence on basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. Precipitation is highly variable seasonally. Summers are often completely dry. In the winter, an occasional storm from the high latitudes sweeps across the

coast bringing rain or snow. Annual rainfall is lowest in the low desert regions, higher in the high desert and foothills, and highest in the mountains.

Air Quality Monitoring. The SCAQMD is responsible for monitoring air quality in the SEDAB. The closest and most representative monitoring station is located in the City of Lancaster, approximately five miles north of Palmdale. Air quality measurements taken at the station for the past 5 years are shown on Table 3.2-1.

Table 3.2-1
SUMMARY OF ANNUAL AIR QUALITY DATA
LANCASTER AIR QUALITY MONITORING STATION

	1989	1990	1991	1992	1993
Ozone (O₃)					
State Standard (1-hr avg. >0.09 ppm)					
Federal Standard (1-hr avg. >0.12 ppm)					
Maximum 1-hr ambient concentration (ppm)	0.21	0.15	0.14	0.17	0.16
# of days state standard exceeded	95	52	62	78	59
# of days federal standard exceeded	27	7	8	25	14
Carbon Monoxide (CO)					
State Standard (1-hr: 20 ppm; 8-hr: 9 ppm)					
National Standard (1-hr: 35 ppm; 8-hr: 9 ppm)					
Maximum concentration 1-hr/8-hr period	13/7.1	11/8.3	10/7.1	9/5.4	8/5.9
# of days state standard exceeded (1-hr/8-hr)	0/0	0/0	0/0	0/0	0/0
# of days national standard exceeded (1-hr/8-hr)	0/0	0/0	0/0	0/0	0/0
Nitrogen Dioxide (NO₂)					
State Standard (1 hr avg. >0.25 ppm)					
Federal Standard (0.0534 AAM in ppm)					
Maximum 1-hr ambient concentration	0.08	0.09	0.11	0.16	0.11
# of days state standard exceeded	0	0	0	0	0
% AAM above federal standard	0	0	0	0	0
Total Suspended Particulates (TSP)					
State Standard (24-hr avg. 150 ug/m ³)					
National Standard (24-hr avg. 260 ug/m ³)					
Maximum 24-hr concentration	154	217	NM	NA	NA
% samples state 24-hr standard exceeded	NA	NA	--	NA	NA
% samples national 24-hr standard exceeded	NA	NA	--	NA	NA
Suspended Particulates (PM₁₀)					
State Standard (24-hr avg. 50 ug/m ³)					
National Standard (24-hr avg. 150 ug/m ³)					
Maximum 24-hr concentrations	110	342	780	68	70
% samples exceeding state 24-hr standard	45	38	19	5	9
% samples exceeding national 24-hr standard	0	3	5	0	0

AAM = annual arithmetic mean
ppm = parts per million

ug/m³ = micrograms per cubic meter
NA = standard not applicable

Source: SCAQMD Annual Air Quality Monitoring Data 1987 through 1993, Vol's XIX - XXIII.

Ambient air quality is described in terms of compliance with state and national standards. Ambient air quality standards (AAQS) are levels of air pollutant concentrations, with an adequate margin of safety, considered safe to protect the public health and welfare. National AAQS were established by the EPA in 1971 for six pollutants, called criteria pollutants. States have the option to add other pollutants, require more stringent compliance, or include different exposure periods. California and National AAQS are listed in Table 3.2-2.

Table 3.2-2
 AMBIENT AIR QUALITY STANDARDS

Air Pollutant	California Standard	----- National -----	
		Primary	Standard
Ozone	>0.09 ppm, 1-hr avg. ^(a)	>0.12 ppm, 1-hr avg.	0.12 ppm, 1-hr avg.
Carbon Monoxide	≥9.1 ppm, 8-hr avg. >20 ppm, 1-hr avg.	≥9.5 ppm, 8-hr avg. >35 ppm, 1-hr avg.	≥9.5 ppm, 8-hr avg. ^(b) >35 ppm, 1-hr avg.
Nitrogen Dioxide	>0.25 ppm, 1-hr avg.	0.053 ppm, annual avg.	0.053 ppm, annual avg. ^(c)
Sulfur Dioxide	≥0.05 ppm, 24-hr avg. with ≥0.10 ozone or with 24-hr TSP ≥100 ug/m ³	0.03 ppm, annual avg. >0.14 ppm, 24-hr avg.	>0.50 ppm, 3-hr avg.
Suspended Particulate Matter ^(d) (PM10)	>30 ug/m ³ annual geometric mean; >50 ug/m ³ , 24-hr avg.	>150 ug/m ³ , 24-hr avg.; >50 ug/m ³ annual arithmetic mean	>150 ug/m ³ , 24-hr avg., >50 ug/m ³ annual arithmetic mean
Sulfates	≥25 ug/m ³ , 24-hr avg. ^(e)	none	
Lead	≥1.5 ug/m ³ , 24-hr avg.	>1.5 ug/m ³ , calendar quarter	>1.5 ug/m ³
Hydrogen Sulfide	≥0.03 ppm, 1-hr avg.	none	
Vinyl Chloride	≥0.010 ppm, 24-hr avg.	none	
Visibility-Reducing Particles	Insufficient amount to reduce prevailing visibility to less than 10 miles at relative humidity less than 70%, 1 observation	none	

(a) Effective 3/9/87. The standard was previously ≥0.10 ppm, 1-hr avg.

(b) Effective 9/13/85. The standard changed from ≥9.3 ppm to ≥9.5 ppm

(c) Effective 7/1/85. The standard changed from >.0532 ppm to >.0534 ppm

(d) Effective 7/1/87. The standards were previously:

Primary: Annual geometric mean TSP >75 ug/m³ and 24-hr avg. TSP >260 ug/m³

Secondary: Annual geometric mean TSP >60 ug/m³ and 24-hr avg. TSP >150 ug/m³

(e) Effective 3/9/87. The standard changed from ≥25 ppm to >25 ppm

Note: ppm = parts per million by volume
 ug/m³ = micrograms per cubic meter
 > = greater than

≥ = greater than or equal to
 TSP = total suspended particulates

Source: South Coast Air Quality Management District 1991

Attainment Status. The California Air Resources Board (CARB) is required to designate areas of the state as attainment, nonattainment, or unclassified for any state standard. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those violations caused by an exceptional event.

The air pollutants of concern in the SEDAB are ozone and particulate matter less than 10 microns in diameter, or PM10. Carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead levels are all below state and national AAQS. A brief discussion of ozone and PM10 and the levels at which they occur in the SEDAB is provided in the following paragraphs.

Ozone. The SEDAB is designated as a nonattainment area for the state and national ozone standard. Levels of ozone have exceeded the state standard an average of 84 days per year over the past 5 years at the Lancaster station. In 1991, ozone levels exceeded the state standard on 62 days. Because ozone formation is the result of photochemical reactions between nitrogen oxides (NOx) and reactive organic gases (ROG), peak concentrations of ozone occur downwind of precursor emission sources. Ozone levels in areas that lie at the base of the San Gabriel and San Bernardino Mountains are among the highest in the United States. When temperatures are hot enough to break the inversion layer, these mountains funnel ozone from the highly urbanized SoCAB up their sides and into the SEDAB.

PM10. Particulate matter (PM) is composed of finely divided solids or liquids such as dust, soot, aerosols, fumes, and mists. In 1987 the EPA replaced the total suspended particulate standard with the new PM10 standard, which includes only smaller PM (10 microns or less in diameter) that are capable of penetrating the lungs. Since adoption of the standard, the SEDAB has been designated in nonattainment. PM10 concentrations at the Lancaster station have exceeded the state standard in approximately 33 percent of the samples taken over the past 3 years.

3.2.1.2 Meteorological Influences on Air Quality

The SEDAB is characterized by frequent and consistent daytime winds. The lack of vegetation allows active air movement much closer to the ground than is typical in more humid climates where there is more vegetative cover. In addition, most of the SEDAB is comprised of sweeping valleys that, despite the presence of bordering mountain ranges, facilitate pollutant dispersal.

Temperature and availability of sunlight influence air pollutant concentration and formation of secondary pollutants. Conditions that favor ozone formation (e.g., adequate sunshine, early morning stagnation in source areas, high surface temperatures, strong and low morning inversion, restricted daytime vertical mixing, daytime subsidence) are commonly present during the summer months. Ozone is frequently transported during the formation process, resulting in high ozone concentrations downwind from ozone precursor sources.

3.2.1.3 Local Setting

The City of Palmdale lies just north of the Transverse Mountain ranges in an area of the high desert known as Antelope Valley. Palmdale is situated near the edge of a large, flat-floored valley basin with average elevations of 2,450 to 2,700 feet above mean sea level. There are no current major

stationary sources of air contaminants, such as large polluting facilities (i.e., power plants, factories etc.). Residential, commercial, and industrial developments which comprise a large portion of the valley are typically concentrated near the town centers. Traffic on Highway 14 and along the City's main roads are the major mobile emission sources in the area.

Climate is characterized by summer days that are much warmer than those experienced by the areas on the coastal side of the Transverse Range. The Palmdale area is also much cooler in the winter than the marine or semi-marine climates due to the draining effect of the sloping land. Annual average daytime temperatures range from 97.7°F in summer to 58.6°F in winter. Low temperatures average 65°F in summer to 31.9°F in winter. During calm, clear winter nights, the basins and valleys of the desert receive the cool air that drains from the surrounding higher slopes resulting in the occasional layer of frost on winter mornings.

Average annual precipitation in the Palmdale area is 5.15 inches and occurs almost exclusively from November through early April. The area receives more rain than the low desert but significantly less than the nearby foothills and mountain areas. The Antelope Valley is an area of high winds with prevailing flows from the southwest. Average daytime maximum speeds are approximately 14 mph in the summer and 9.5 mph during winter months. The general flow is interrupted by occasional winter storms and Santa Ana winds.

3.2.2 Project Impacts

Air quality impacts from the proposed project will include short-term construction impacts as well as stationary and mobile source emissions that will result from the development and operation of the proposed project. The air quality analysis is based on the information and methodologies contained in the South Coast Air Quality Management District Final CEQA Handbook.

3.2.2.1 Construction Impacts

Three main types of construction-related air quality impacts are expected to result from the proposed project. They include: (1) mobile source emissions from construction workers travel; (2) PM10 emissions due to grading and materials hauling; and (3) onsite construction equipment emissions.

Given the magnitude of the proposed project, detailed information on construction equipment and number of construction workers was not available. It was not possible, therefore, to utilize the detailed tables that are contained in Appendix 9 of the CEQA Handbook. The screening tables in Chapter 9 of the Handbook were used in order to calculate the construction exhaust emissions from the development of the Palmdale Business Park Center Specific Plan. A 10-year construction period with an average of 261 days per year was assumed for the project. The construction exhaust emissions from the 27-hole golf course and related facilities were not calculated since a category for such user is not included in the screening tables. As a result the construction emissions are likely to be somewhat higher than what is presented in the following analysis.

Construction exhaust emissions for the Palmdale Business Center Specific Plan are presented in Table 3.2-3. Construction workers travel includes worktrips by construction workers, site visits by building inspectors, and project management personnel as well as non-work trips associated with

lunches, deliveries and miscellaneous activities. The second group of construction exhaust emissions were for material hauling vehicles. This includes the hauling of materials to and from the construction site. The final category of construction exhaust emissions for onsite construction equipment. This includes equipment such as bulldozers, graders, scrapers, loaders, and forklifts. Significant construction impacts are expected to result from NOx. The significance threshold for the pollutant is exceeded by a wide margin (995 pounds per day).

Table 3.2-3
CONSTRUCTION EXHAUST EMISSIONS (per day)

Development Scenario ('000 square feet) ⁽¹⁾				
Community Commercial	645.9			
Airport Related	1,743.2			
Business Park	342.2			
Light Industrial	<u>2,545.3</u>			
Total	5,276.6			
Source Category	ROC	NOx	CO	PM10 ⁽²⁾
Construction Workers Travel	.0012	.0010	0.0148	0.0001
Material Hauling Vehicles	10.64	156.32	34.0	11.1
Construction Equipment Operation	63.09	938.98	204.09	66.68
Total	74.53	1,095.30	238.19	77.78

- Notes: ⁽¹⁾ Exhaust emissions from golf course construction not included.
⁽²⁾ Includes PM10 from fugitive dust.

PM10 emissions for grading activities were estimated by assuming that grading would take place over the 10-year development period and that no more than 10 percent of the project site would be graded at any one time. According to the SCAQMD CEQA Handbook, 55 pounds per day/acre of PM10 are generated for each day of grading activity. If 63 acres of the project site were graded at the same time, it would result in a total of 3,465 pounds of PM10 being generated. This would cause the PM10 significance criteria to be exceeded.

Construction of the proposed project is expected to generate 74.53 pounds per day of ROC, 1,095.30 pounds per day of NOx, 238.19 pounds per day of CO, and 3,542.78 pounds per day of PM10.

Significant emissions (see Table 3.2-3) during the construction phase of the proposed project would occur for both NOx and PM10.

3.2.2.2 Operational Impacts

Air quality impacts during the operation of the proposed project are expected to result from stationary and mobile sources. The two main stationary source emissions from the proposed project are expected to result from consumption of electricity and natural gas as well as from industrial uses

at the project site. Mobile source emissions are expected from employee, customer and delivery trips to and from the proposed project site.

Table 9-8 of the SCAQMD CEQA Handbook was utilized in order to estimate area source operation emissions from energy consumption that would result from the proposed project. Daily emissions from these sources are expected to total 1.32 pounds of ROC, 152.6 pounds of NOx, 26.5 pounds of CO, and 5.27 pounds of PM10. The unmitigated NOx emissions from these sources are significant (exceeds the significance criteria of 100 pounds per day).

The proposed Palmdale Business Park Center Specific Plan will contain a number of land uses (airport related and light industrial) that are expected to generate stationary source emissions. Due to the broad nature of proposed land uses and the lack of detailed information on the types of industries that would be locating within the Specific Plan area, it is not possible to estimate stationary source emissions at this time.

The most significant project related air quality impact is expected to result from the trips that will be made to and from the proposed business park center. According to the traffic study that was completed for the proposed project a total of 53,058 trips are expected to be generated by buildout in the year 2021. The proposed project is expected to generate 4,330 trips during the AM peak and 6,281 trips during the PM peak.

The proposed project is expected to reach full buildout by the year 2021. The SCAQMD CEQA Handbook, however, only provides estimate of trip lengths, average speeds and emission tables through the year 2010. The year 2010 was therefore used as the forecast year for the air quality analysis.

The next step in the analysis of mobile source emissions was to determine the split between work and non-work trips in order to estimate vehicle miles traveled. Table A9-5-C in the CEQA Air Quality Handbook was utilized in order to determine the split. Based on this information by the year 2010, 38.88 percent of all trips would be work trips while the remaining 61.12 percent would be non-work trips. In order to determine vehicle miles traveled it was necessary to multiply the number of work and non-work trips times the average length of that particular type of trip. According to Table A9-5-D, the average trip length for work trips in Los Angeles County in 2010 is expected to be 10.8 miles. The average trip length for non-work trips for the same year is 6.3 miles. The total number of vehicle miles traveled (VMT) is then obtained by multiplying the number of work and non-work trips by the average trip length and adding them together. This calculation was done for each of the three time periods.

Once the VMT is obtained it is necessary to determine the average speed in order to calculate emissions. The average speed by county varies depending on the time of day. Table A9-5-F was utilized in order to determine average speeds for the AM peak, PM peak and offpeak hours. The average speeds were 21 miles per hour for the AM peak, 15 miles per hour for the PM peak and 37 miles per hour for the offpeak hours.

Since the expected vehicle mix was not available from the traffic study, it was assumed that all vehicles would have a gross vehicle weight of 6,000 pounds or less. Table A9-5-J-10 was utilized in order to determine running exhaust and evaporative, cold start, hot start, hot soak and diurnal

mobile source emissions from the proposed project. The table for calendar year 2009 was utilized since a table was not available for the year 2010. Since the speed categories are divided into five mile per hour increments the speeds were rounded either up or down for the purposes of calculating emissions. The analysis utilized temperature area 2 for Los Angeles County in order to calculate emissions. Different travel periods were utilized for particular criteria pollutants. The AM peak period was utilized to calculate CO and NOx emissions, the PM peak for PM10 and offpeak periods for ROC.

The number of vehicle miles traveled for a particular year are multiplied by the emission factor in grams per mile (at a particular vehicle speed) in order to determine daily emissions. The result which is expressed in grams per day is then divided by 454 in order to determine the pounds per day of that particular criteria pollutant. These totals represent the running exhaust and evaporative emissions that can be expected from the proposed project. Cold start, hot start and hot soak emissions are based on the number of trips during each of the travel periods. Diurnal emissions were calculated separately based on the number of vehicles.

The total mobile source emissions (including passenger vehicles and trucks) for the proposed project are presented in Table 3.2-4. NOx emissions from potential railroad traffic are not included. At full development the proposed project is expected to generate 717.8 pounds of CO, 40.2 pounds of NOx, 264.6 pounds of ROC and 11.8 pounds of PM10 on a daily basis. Of the four criteria pollutants, the proposed project would exceed the significance threshold for both CO and ROC.

Table 3.2-4
SUMMARY OF MOBILE SOURCE EMISSIONS FROM PROPOSED PROJECT

2010	Pollutant (lbs/day)			
	ROC	NOx	CO	PM10
Run. Ex. & Evap.	45.0	22.8	216.1	11.8
Cold Start	121.0	11.8	465.0	---
Hot Start	21.4	5.6	36.7	---
Hot Soak	27.0	---	---	---
Diurnal	50.2	---	---	---
TOTAL	264.6 (75)	40.2 (100)	717.8 (550)	11.8 (150)

A number of transportation demand management (TDM) programs would need to be implemented in order to reduce the traffic and mobile source emissions that would be generated from the proposed project. TDM measures are grouped into three categories including: person-trip reduction, vehicle-trip reduction, and peak-period modification. These measures can be used to mitigate the traffic impacts on study intersections as well as the increased congestion on major regional facilities such as the Antelope Valley Freeway and Sierra Highway.

Some person-trip reduction measures could include alternative work weeks and flextime, telecommunication and work at home, and nonwork-trip reduction. Vehicle trip reduction measures could include employer rideshare and transit incentives, parking management, vanpool purchase incentives, and auto-use restrictions. Peak period modification measures could include flextime and user fees. Individual measurer or combination of these measures would be employed to reduce traffic congestion and improve traffic flow on major arterials and freeways affected by the Palmdale Business Park Center Specific Plan. Recent experience has indicated that a TDM program of this nature could result in a trip reduction of up to 15 percent.

Table 3.2-5 summarizes the air quality impacts that can be expected to occur as a result of the proposed project. During the construction phase of the proposed project significant air quality impacts are expected for both NOx and PM10. The significance thresholds for ROC, NOx and CO are expected to be exceeded during the operation of the proposed project. In order to reduce these impacts a number of mitigation measures will need to be implemented.

Table 3.2-5
SUMMARY OF CONSTRUCTION AND OPERATION EMISSIONS FROM PROPOSED PROJECT

	(lbs/day)			
	ROC	NOx	CO	PM10
Unmitigated Daily Construction Emissions				
• Material Hauling	10.64	156.32	34.0	11.1
• Construction Workers' Travel	.0012	.0010	.0148	.0001
• Construction Equipment	63.09	938.98	204.09	66.68
Fugitive Dust Emissions	N/A	N/A	N/A	3,465.0
Total Construction Emissions	74.53	1,095.30	238.19	3,542.78
Construction Significance Thresholds	75.0	100.0	550.0	150.0
Significant?	No	Yes	No	Yes
Unmitigated Daily Operation Emissions				
Exhaust Emissions	264.6	40.2	717.8	11.8
Stationary Sources (Area Source)	1.3	152.6	26.5	5.3
Total Operation Emissions	265.90	192.80	744.30	17.10
Operation Significance Thresholds	75.0	100.0	550.0	150.0
Significant?	Yes	Yes	Yes	No

Table 3.2-6 illustrates the emission reductions that can be expected from the implementation of the proposed mitigation measures during the construction phase of the proposed project. The proposed mitigation measures will result in major reductions in emissions but despite these reductions the significance thresholds for both NOx and PM10 will still be exceeded.

Table 3.2-6
EMISSION REDUCTION FROM MITIGATION MEASURES (CONSTRUCTION)

	(lbs/day)			
	ROC	NOx	CO	PM10
Unmitigated Construction Emissions	74.53	1,095.30	238.19	3,542.78
Significance Thresholds	75.00	100.0	550.00	150.00
Significant?	No	Yes	No	Yes
Amount Needed to Reduce Emissions Below Level of Significance	0.00	995.30	0.00	3,392.78
Mitigation Measures				
1. Use electricity from power poles rather than temporary diesel generators.	-62.46	-911.81	-200.01	-65.35
2. Water active sites twice daily.	--	--	--	-1,178.10
3. Replace groundcover in disturbed areas as quickly as possible.	--	--	--	-350.55
4. Enclose, cover or water enclosed piles with 5 percent or greater silt content.	--	--	--	-580.90
5. Apply non-toxic soot stabilizers to all inactive construction areas.	--	--	--	-406.64
Total Reduction	-62.46	-911.81	-200.01	-2,516.19
Total Mitigated Emissions	12.07	183.49	38.18	1,026.59
Significant?	No	Yes	No	Yes

Note: Qualitative measures can also be applied when all feasible quantitative reductions have been made.

Table 3.2-7 illustrates the emission reductions that can be expected from the implementation of the proposed mitigation measures during the operational phase of the proposed project. The proposed mitigation will result in minor emission reductions. The significance thresholds will still be exceeded for ROC, NOx, and CO.

Table 3.2-7
EMISSION REDUCTION FROM MITIGATION MEASURES (OPERATION)

	(lbs/day)			
	ROC	NOx	CO	PM10
Unmitigated Operational Emissions	265.90	192.80	744.30	17.10
Significance Thresholds	75.00	100.00	550.00	150.00
Significant?	Yes	Yes	Yes	No
Amount Needed to Reduce Emissions Below Level of Significance	-190.90	-92.80	-194.30	0.00
Mitigation Measures - Stationary Sources				
1. Wall and attic insulation to exceed Title 24 requirements.	-0.13	-13.73	-2.52	-0.37
2. Light-colored roofing materials to reflect heat.	-0.01	-1.39	-0.24	-0.02
3. Building orientation to minimize solar exposure.	-0.13	-18.56	-2.97	-0.86
Mitigation Measures - Mobile Sources				
1. Flexible Schedules and Workdays	-3.96	-0.81	-14.35	-0.24
2. Increase Carpooling/Vanpooling	--	--	--	--
3. Transit Subsidies	--	--	--	--
4. Carpool Parking Incentives	-3.90	-0.79	-14.07	-0.24
5. Telecommuting	-0.25	-0.04	-0.69	-0.01
6. Satellite Offices	-0.25	-0.04	-0.69	-0.01
Total Reduction	-8.63	-35.36	-35.53	-1.75
Total Mitigated Emissions	257.27	157.44	708.77	15.35
Significant?	Yes	Yes	Yes	No

Note: Qualitative measures can also be applied when all feasible quantitative reductions have been made.

3.2.3 Mitigation Measures

A number of mitigation measures should be implemented in order to reduce net construction emissions to a less than significant level. In order to reduce PM10 emissions during grading of the project site, the following mitigation measures should be utilized:

- #6 Groundcover in disturbed areas shall be replaced in accordance with City standards.

- #7 Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturer specifications, to exposed piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.
- #8 Non-toxic soil stabilizers shall be applied (according to manufacturer's specification) to all inactive construction areas (previously graded areas inactive for 10 days or more).

In order to reduce NOx emissions for construction equipment, the following mitigation measure shall be applied:

- #9 Electricity from power poles shall be utilized rather than from temporary diesel power generators.

A number of mitigation measures will be required to be implemented in order to mitigate significant unmitigated emissions from stationary and mobile sources.

The following additional mitigation measures shall be implemented in order to reduce emissions from stationary sources during the operation of the proposed project:

- #10 Walls and attic insulation shall exceed Title 24 requirements.
- #11 Light-colored roofing materials shall be utilized (where feasible) in order to reflect light.
- #12 Building orientation shall be designed so as to minimize solar exposure.

The following mitigation measures will be required to mitigate mobile source emissions:

- #13 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

3.2.4 Impacts After Mitigations

Air quality impacts will remain significant after the implementation of appropriate mitigation measures.

3.3 WATER RESOURCES

3.3.1 Existing Conditions

The project area lies within the Antelope Valley Groundwater Basin. It also lies within the drainage area of the Anaverde Wash. The groundwater conditions and the flood potential associated with the Anaverde Wash are discussed in the following subsections. The water supply available to the site is also discussed.

3.3.1.1 Water Supply

The project site lies within the boundaries of Los Angeles County Waterworks District #40 (Waterworks #40), whose service area extends northward to serve much of Lancaster. A major portion of the supply for the Waterworks is imported water. This imported water is treated and delivered to the Waterworks #40 distribution system by the Antelope Valley East Kern Water Agency (AVEK). AVEK is one of the State Contractors with entitlements to the State Water Project (SWP). The California Aqueduct, which is used to transport water from Northern to Southern California, crosses through the southern portion of Palmdale. AVEK obtains its water from this aqueduct. AVEK's entitlement SWP water is 138,400 acre-ft/year. The extended drought situation in California forced cutbacks in supply from the State Water Project. In 1991 AVEK received 47,000 acre-feet and 1992 water use was 37,000 acre-feet. AVEK expected to receive 55,000 acre-feet in 1993 (Spinarski, personal communication, 1993).

Waterworks #40 provides water service to the project site. Its water supply comes from two sources: imported water purchased from AVEK (as discussed above) and local groundwater. Waterworks #40 has 30 wells from which groundwater is pumped into the supply system. Water production records are kept for Waterworks #40 and adjacent Waterworks #34. Their combined use totaled 26,000 acre-feet in 1991 and 30,000 acre-feet in 1992 (unpublished data, Waterworks #40). Imported water accounted for 41 and 52 percent, respectively, of the total supply for the two years.

Waterworks #40 currently has a 7-acre reservoir site located along Avenue M and surrounded by the project site. Three 1-million gallons water storage tanks currently occupy the site and as many as 12 tanks are eventually planned. A 30-inch AVEK line, which runs along the western and northwestern side of the project site, feeds water to these tanks. A 48-inch pipeline operated by Waterworks #40 leads easterly from the reservoir site along Avenue M, turning north into the City of Lancaster at Challenger Way.

Additional discussion of the water supply system can be found in Section 3.9.1.1.

3.3.1.2 Groundwater

The Antelope Valley Groundwater Basin covers an area of about 900 square miles. It is bounded by the San Gabriel Mountains on the south, the Tehachapi Mountains on the northwest and by faults on the remaining boundaries. Palmdale and the project site lie in the south-central portion of the basin. The valley is underlain by alluvium deposited from the mountains which ranges in depth up to 8,000 feet.

The Antelope Valley Groundwater Basin is divided into several subbasins (Durbin 1978). These subbasins are drawn according to geologic formations such as faults and consolidated rock which limit the flow and exchange of groundwater between subunits. Along a number of these faults, the water table is measurably higher on the upgradient side of the fault than on the down gradient site. As shown in Figure 3.3-1, the Antelope Valley Groundwater Basin is composed of seven subbasins: Lancaster, Buttes, Pearland, Neenach, West Antelope, Finger Buttes and North Muroc. The project site lies within the Lancaster subbasin.

The Lancaster subbasin is the largest of the seven subbasins, and, as such, has the greatest number of water wells. The northern extremity of the Lancaster subunit lies in Kern County where it is bounded by the Rosamond Fault, the Rosamond and Bissell Hills, and the near-surface bedrock of Rogers Lake. The Neenach Fault is the northwestern boundary of the Lancaster subunit; unnamed faults make up the southern and southeastern boundary. The eastern boundary of the subbasin is formed by the impermeable rocks which form the hills in the Hi Vista area. Locally, groundwater movement is influenced by pumping within the subbasin and will move toward several pumping depressions. Prior to the active pumping of groundwater, the gradient was northward, and, generally, groundwater moved toward Rosamond Dry Lake. Perched groundwater occurs at depths less than 50 feet and may approach depths of less than 25 feet after heavy rains or intensive irrigation.

Groundwater recharges the subbasin from the base of the San Gabriel Mountains. It then moves towards the north-central part of the Lancaster subbasin. Alternating layers of lacustrine (lake) deposits occur within the alluvium. During the depositional history of the Antelope Valley Groundwater Basin, a large lake occupied a portion of the Lancaster and North Muroc subbasins. Fine grained lacustrine deposits formed in this lake. The lacustrine deposits divide the basin vertically into two separate aquifer systems: the Principal aquifer system and the Deep aquifer system as depicted in Figure 3.3-2. Water is constrained from moving vertically between the aquifer systems by the lacustrine deposits.

The principal aquifer supplies nearly all of the groundwater in the region. This aquifer occurs in the younger, upper alluvial deposits that overlie the lacustrine deposits and is characterized as an unconfined aquifer. In an unconfined aquifer, the water table can receive recharge from above and can rise up and down freely within the aquifer in response to changes in the amount of recharge received.

The great majority of recharge to the Antelope Valley Groundwater Basin comes from runoff from the adjacent mountain ranges. Durbin (1978) has estimated that over half of the recharge (58%) comes from two washes flowing from the San Gabriel Mountains, south and east of the project site: Little Rock Creek and Big Rock Creek washes. Rainfall on the valley floor averages less than 6 inches per year and contributes very little recharge. In recent years a new source of recharge has been introduced. Water imported to the region via the State Aqueduct likely contributes, indirectly, to basin recharge after its use and discharge to the sewer system in the form of treated effluent released to percolation ponds for disposal.

Total average annual groundwater recharge has been estimated at between 40,000 to 58,000 acre-ft/year. Total groundwater storage has been estimated to be 70 million acre-feet (California

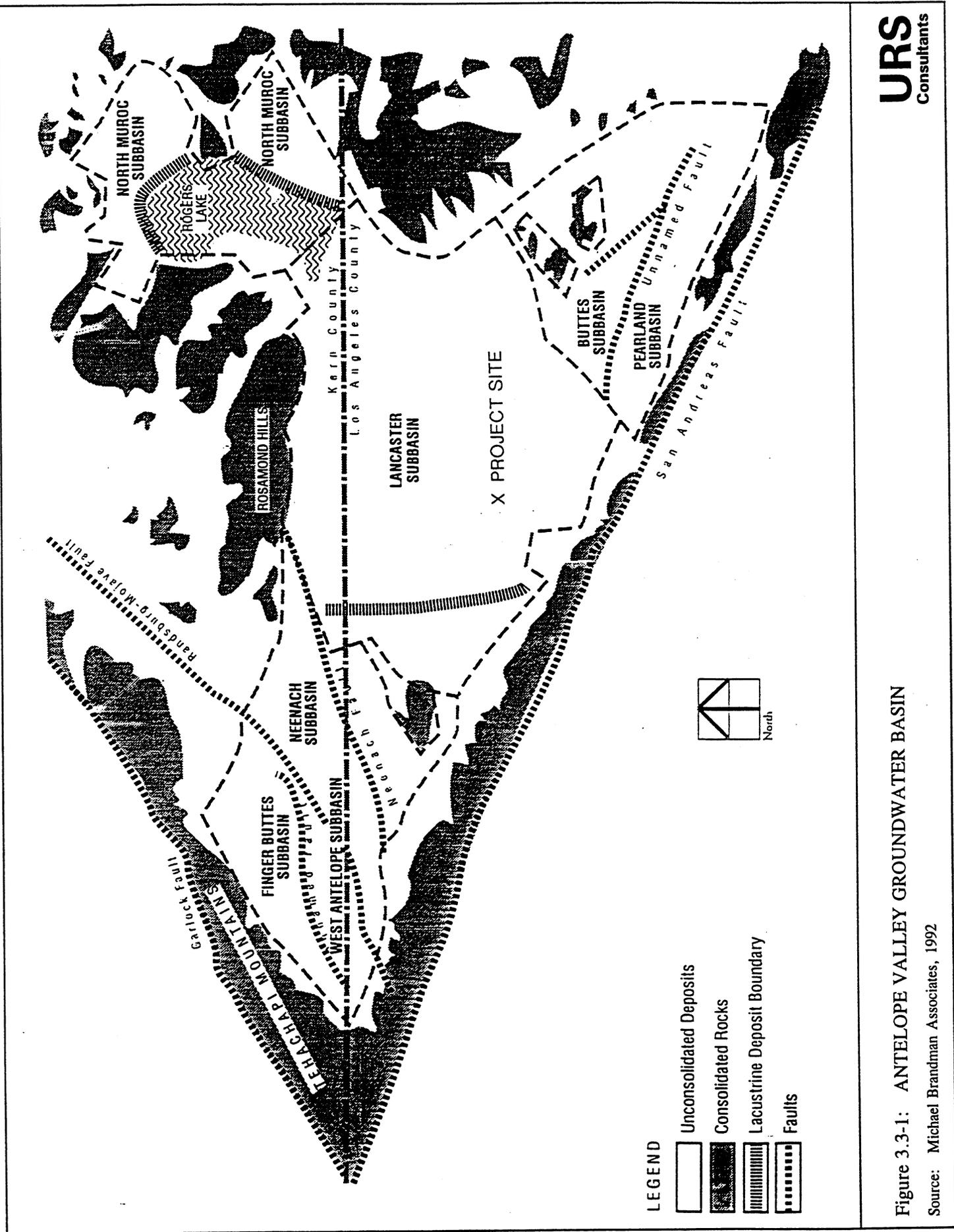
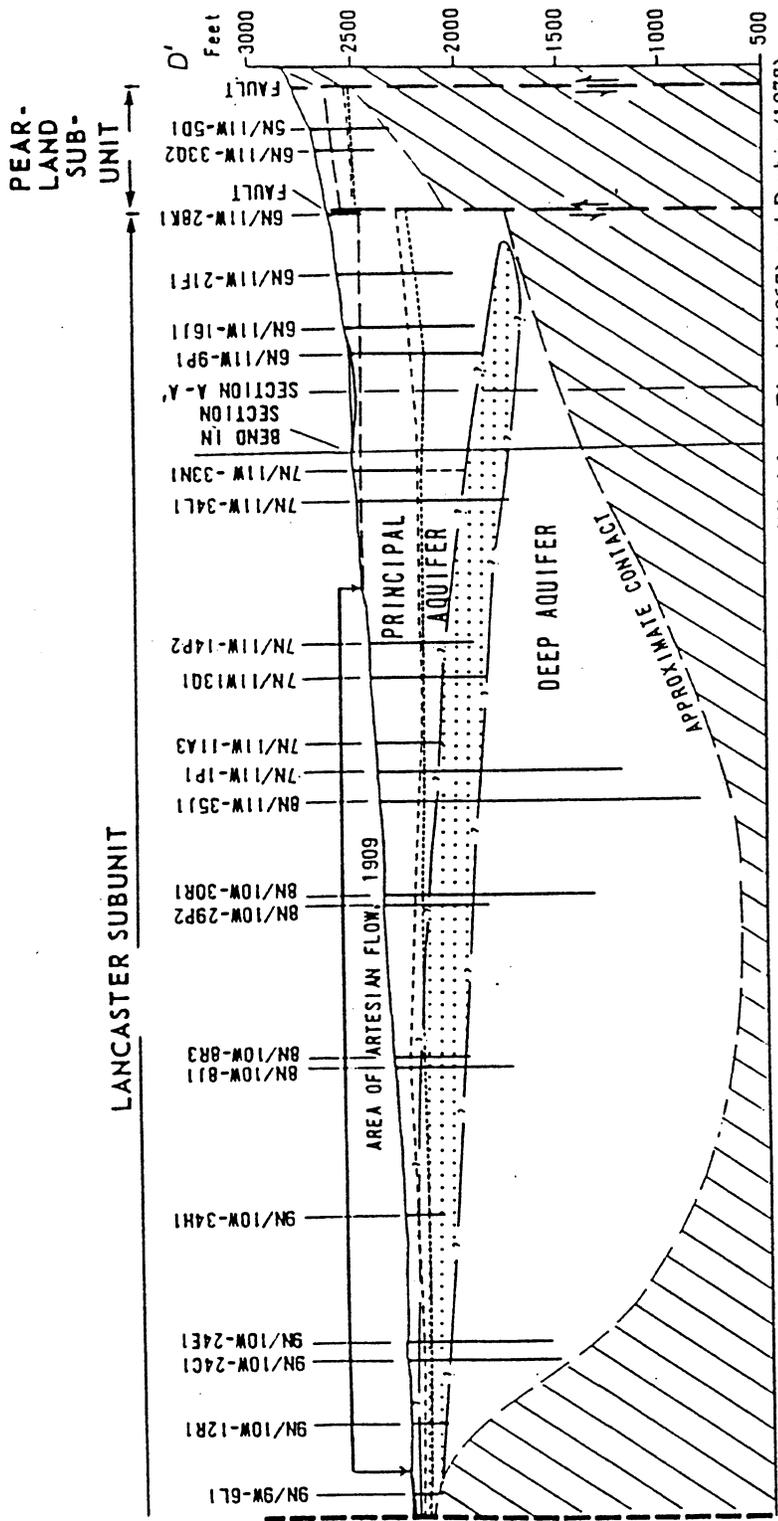


Figure 3.3-1: ANTELOPE VALLEY GROUNDWATER BASIN

Source: Michael Brandman Associates, 1992



Geology modified from Boyd (1967) and Durbin (1978).
Lacustrine deposits shown diagrammatically

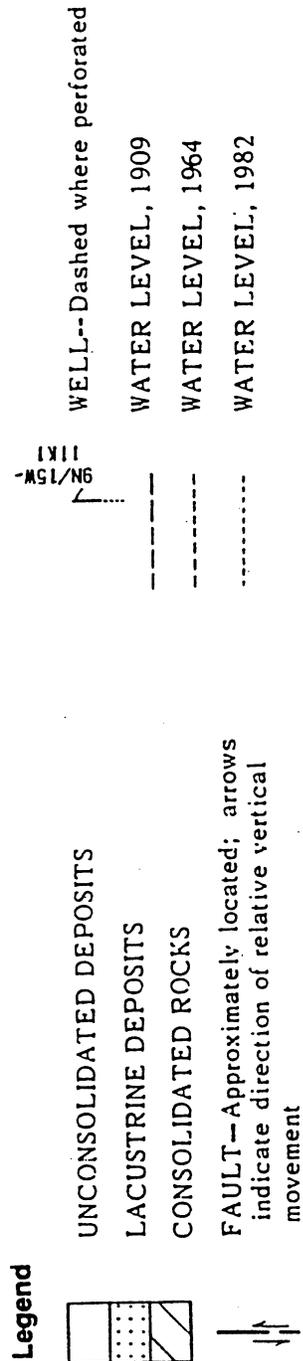


Figure 3.3-2: ANTELOPE VALLEY GROUNDWATER BASIN
LANCASTER SUBBASIN CROSS SECTION

Source: Michael Brandman Associates, 1992

Department of Water Resources 1980). The average well yield is 770 gallons per minute (gpm) with a maximum of over 3,000 gpm reported.

The two primary sources of groundwater demand are evapotranspiration, where the groundwater table is near enough to the land surface to be utilized by plants, and pumpage from wells. The former was estimated to be about 39,000 acre-ft/year by Durbin (1978). Total pumpage in the early 1980s was estimated to be 179,000 acre-ft/year (California Department of Water Resources 1980a). Rates of decline ranging from 1 foot per year in nonpumping areas to 12 feet per year in heavily pumped areas occur. USGS estimates a 200-foot decline in groundwater levels in the Lancaster area from 1915 to 1988. Conversely, with hydrographs maintained by AVEK indicate groundwater levels in portions of the Valley have risen in recent years (Antelope Valley Water Group 1994). To counteract overdrafting, the Los Angeles County Department of Public Works has established recharge programs in the region. For instance, in 1987-88, 2,927 acre-feet of local water was spread in the Big Rock area to reduce the groundwater overdraft.

Agricultural irrigation, once the dominant use of water in the basin, has declined substantially in recent decades. This is partly due to declining groundwater levels and associated increased pumping costs. In addition, large-scale urban development has displaced some agricultural land. Overall groundwater use in the Antelope Valley has actually decreased from the levels of several decades in the past, due to the decline of agriculture in the basin. Rising groundwater levels have been noted in some municipal wells (Los Angeles County Waterworks District 1991). The basin has not been the subject of adjudication and there are currently no restrictions on constructing new wells and/or increasing the amount of groundwater extraction from the basin.

The City of Palmdale and the City of Lancaster have joined with a number of water supply agencies and the U.S. Geological Survey to carry out a water supply and groundwater study of the Antelope Valley Groundwater Basin. The Draft Antelope Valley Water Resource Study prepared by the Antelope Valley Water Group was published and distributed in August 1994. Representatives of the participating agencies are currently reviewing the document. The document may be published in its final form by March 1995. During this two-year study, current water demand in the area was documented. Water use projections to the year 2020 have been developed. Available long-term sources of supply have been reviewed. In addition, methods of augmenting water supply have been evaluated, including conservation, groundwater recharge and water reclamation. This study also provides data concerning aquifer storage and recovery and the effects of changes in groundwater levels. This study was intended to provide the foundation for a long-range water management plan to assure sufficient water supply to the region.

Groundwater quality in the majority of the basin is excellent, with total dissolved solids (TDS) rarely exceeding 500 mg/l. No wells exist at the project site. The depth to groundwater is 300 to 400 feet. Nearby Plant 42 has several municipal wells which supply approximately 75 percent of the 600 acre-ft/year (0.5 MGD) used by the Plant (Palmdale Water District supplies the remaining portion of Plant 42's water needs).

3.3.1.3 Surface Water

The project site lies with the Anaverde Creek Drainage Area (Figure 3.3-3). The waters in this drainage originate in the foothills in the southwestern portion of the city. The drainage covers the

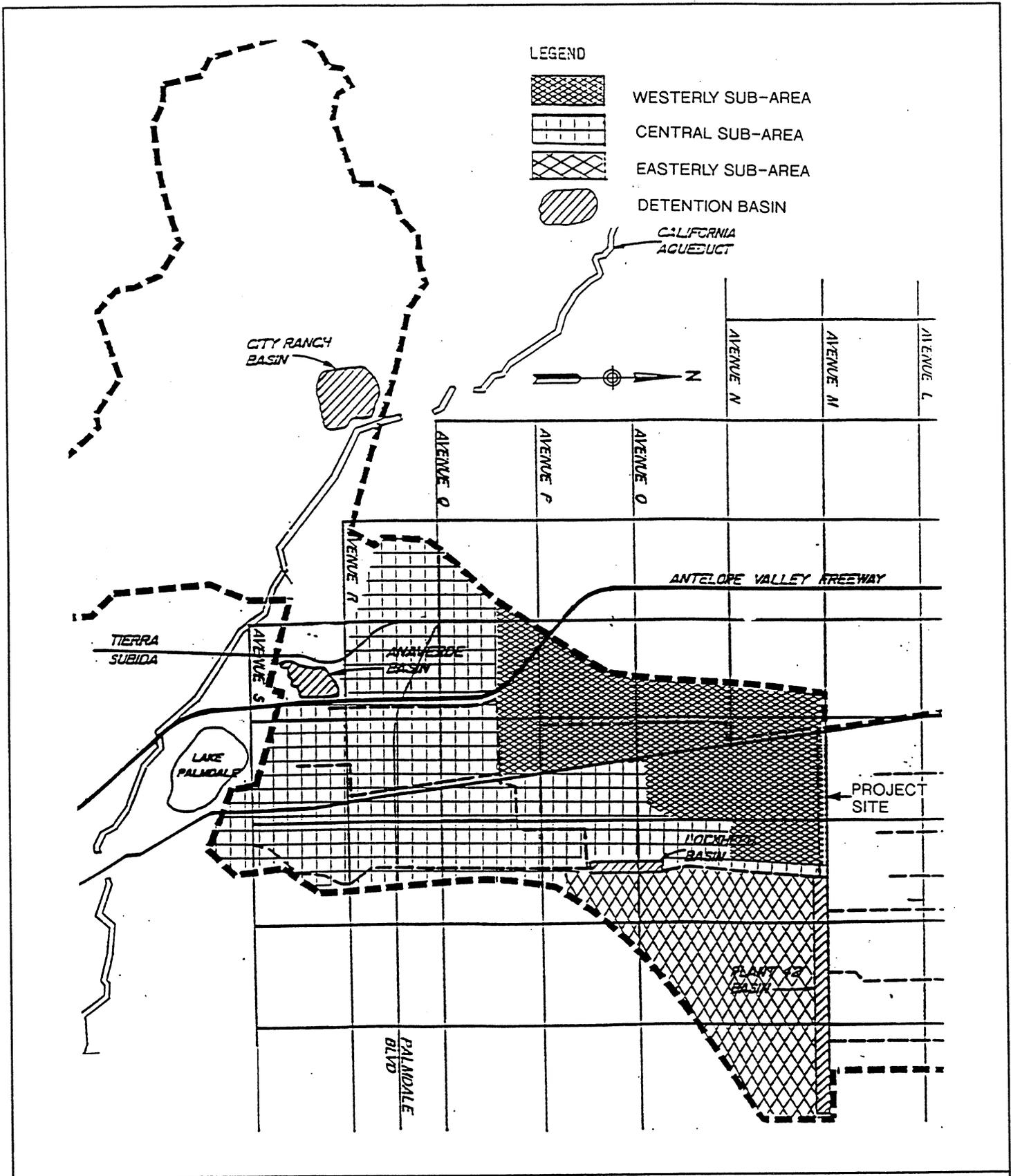


Figure 3.3-3: ANAVERDE DRAINAGE AREA

Source: A.K.M. Consulting Engineers, 1992



central portion of Palmdale. Runoff flows north through Lancaster, ultimately draining to Rogers and Rosamond Dry Lakes, 10 to 15 miles to the north.

An unnamed branch of Anaverde Creek parallels the western side of the project site, to the west of the railroad tracks. This drainage crosses the northwest corner of the project site and passes underneath Avenue M through three small concrete culverts. This small area is subject to flooding during the rare periods of higher flow in the drainage. This area is identified as Flood Hazard Zone A0 (subject to flooding of one foot in depth) in Federal Emergency Management Agency (FEMA) flood mapping. This drainage shows up on the U.S. Geological Survey Quad Map as the only "blue line stream" on the project site. Runoff originating to the south of the site, on Plant 42 property, is diverted easterly around the project site by an existing rail spur.

Runoff from high-intensity thunderstorms can cause flooding. In addition, rapid development has exacerbated potential flood problems by reducing natural percolation and channeling runoff into local drainages more rapidly. Los Angeles County prepared a Comprehensive Plan for the Antelope Valley. This report was utilized in the preparation of the City of Palmdale Master Plan of Drainage. The City produced a Master Plan of Drainage in 1988 covering all of the drainages, including Anaverde Creek. That plan calls for a reinforced concrete channel paralleling the western side of the railroad tracks, along the west side of the project site. The plan calls for a trapezoidal channel running east along Avenue M on the northern side of the project site. A trapezoidal channel is also identified for the eastern side of the project site. These latter two channels would empty into a proposed regional retention basin (Plant 42 Basin) fronting Avenue M, immediately east of the project site.

Since 1988 an additional hydrology study focusing on Anaverde Creek has been prepared (AKM Consulting Engineers 1992). Proposed regional drainage facilities are shown in Figure 3.3-3.

3.3.2 Project Impacts

3.3.2.1 Water Use

The project would generate 341.1 acres of commercial, business park, light industrial and airport-related industrial uses. The Specific Plan for the project estimates that these uses would generate a water demand equivalent to four dwelling units per acre, or a total of 1,364 equivalent dwelling units. The Specific Plan identifies a peak water demand of 2.0 MGD (Price Associates 1993). To place the water demands of the project into area perspective, average water requirements are more useful. The average dwelling unit supports 3.21 persons in the Palmdale-Lancaster area (refer to Section 3.6.2.2). Average per-capita water use is 220 gallons per day (Cotton-Beland Associates 1989). Using the equivalent dwelling unit method, average, non-golf course water use by the project calculates to approximately 0.96 MGD, or 1,000 acre-ft/year. A water consumption study for the 225-acre project golf course indicates that golf course water use would be 780 acre-ft/year (using conventional irrigation methods) or 611.39 acre-ft/year (using state-of-the-art irrigation measures). Thus total project water use would be as much as 1,780 acre-ft/year.

The municipal supply for the non-golf course portion of the project would come from Waterworks #40. The 1,000 acre-feet for this portion of the project represents about 3 percent of their current water use and could be readily supplied by the Waterworks (Roediger, personal communication,

1993). As stated in Section 3.3.1.1, groundwater makes up approximately half of the water supplied by Waterworks #40. If this trend continues, the project would result in an additional 500 acre-ft/year of groundwater use. The project has proposed to irrigate the golf course with two private wells constructed at the project site. If this occurs, total groundwater use by the project would be about 1,280 acre-ft/year. The groundwater impacts of the project are discussed in the next subsection.

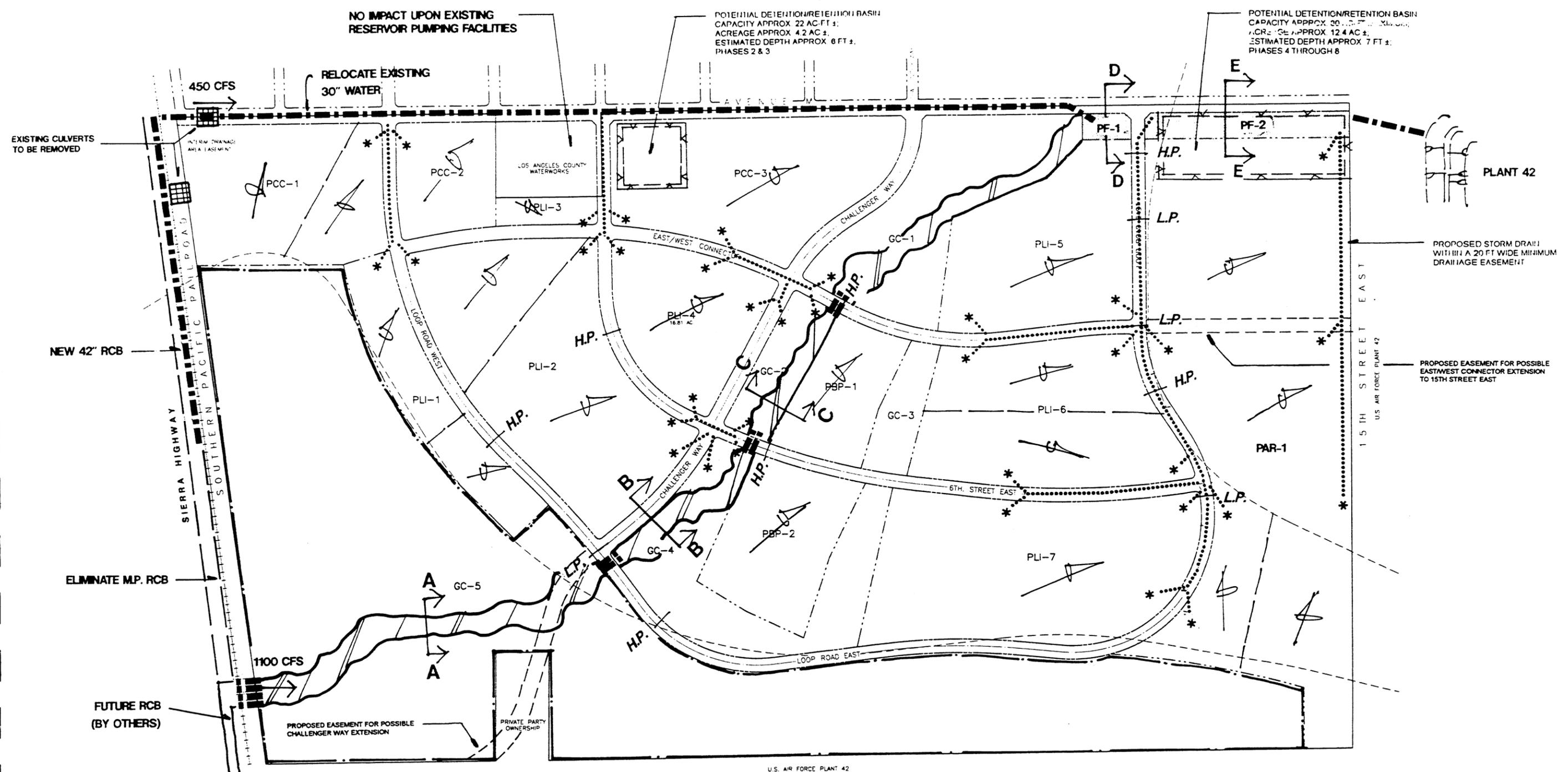
When fully developed, the project would create 10,110 jobs, attracting on the order of 16,000 new people to the area (Section 3.6.2.2). With a per-capita water demand of 220 gallons per day, indirect water demands resulting from the project would be 3.5 MGD, or 3,920 acre-ft/yr. Thus indirect water demands of the project would be two-and-one-half times higher than direct project water demands. This demand would be spread among the various water purveyors serving the Palmdale-Lancaster area and could be readily supplied. If supply trends continue it is expected that approximately half of this supply (1,960 acre-ft/year) would come from wells.

3.3.2.2 Groundwater

The development of approximately 341 acres of commercial business park and industrial lands at the project site, would introduce large areas of impermeable surfaces, such as roofs, parking lots, storage areas and roads. This could reduce the potential for groundwater recharge. However, the valley floor contributes very little direct recharge to the groundwater due to the sparse rainfall and the high evapotranspiration. Therefore this loss in permeable area would have a very minor impact upon groundwater recharge.

Groundwater pumpage in the Antelope Valley Groundwater Basin has decreased considerably as a result of large decreases in irrigated agricultural acreages. Additional declines in agriculture are forecasted (Los Angeles County Department of Regional Planning 1986). The rate of groundwater declines in monitored wells in the area is reported to have decreased in the mid-1980s (Cotton-Beland Associates 1989). Some rises in well water levels have been reported for wells operated by the County Waterworks Districts (Los Angeles County Waterworks Districts 1991).

A recent study (Richard C. Slade and Associates 1994) was conducted on groundwater levels in the Lancaster subbasin. This water data was collected from the USGS ongoing groundwater monitoring program as well as additional nonpumping water level data from wells owned by Los Angeles County Waterworks, Palmdale Water District, and the Quartz Hill Water District. This data indicated that regional groundwater flow in the Lancaster Subbasin moves generally toward two pumping centers: one near Lancaster and one near Palmdale. A number of hydrographs were also collected from AVEK that are part of the ongoing USGS monitoring program. This data indicates that water levels declined continually between 1953 and 1977 but between 1977 and 1993 the total amount and rate of water level change has either slowed or in some cases has been reversed and have risen. The factors causing these trends include: the change from agricultural land use to residential, the impact of AVEK water to the area, and the change in annual precipitation, and hence recharge, over the years. However, well hydrographs indicate that although the Antelope Valley Groundwater Basin as a whole has experienced some degree of recharge, the portion of the Lancaster Subbasin in proximity to the project site has continued to experience declining water levels.



PALMDALE BUSINESS PARK CENTER

SPECIFIC PLAN
PALMDALE, CALIFORNIA

LOCKHEED CORPORATION

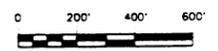
4500 PARK GRANADA BLVD
CALABASSAS CA. 91339-0220
(818) 876-2212

LEGEND

- PROPOSED MASTER PLAN UNLINED MAJOR FLOW CHANNEL - VARIABLE WIDTH
- PROPOSED MASTER PLAN STORM DRAIN PIPE
- PROPOSED MASTER PLAN UNLINED TRAPEZOIDAL CHANNEL
- PROPOSED ONSITE PUBLIC STORM DRAIN

- L.P.* PROPOSED LOW POINT IN PUBLIC STREET
- H.P.* PROPOSED HIGH POINT IN PUBLIC STREET
- PROPOSED GRADED DIRECTION OF FLOW
- PROPOSED ONSITE DETENTION AREA

DECEMBER 15, 1994



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Figure 3.3-4: PROJECT DRAINAGE CONCEPT
Source: David A. Price Associates, 1994

As stated in Section 3.3.2.1, direct project water requirements could increase groundwater use by 1,280 acre-ft/year. Half of this would come from Waterworks #40 wells. The remaining half (611 to 780 acre-ft/year) would come from two new wells proposed for construction at the site. The project proponent has proposed two new wells, for golf course irrigation. One well is one the golf course in the southern portion of the property while the other is in the eastern portion of the site. These locations were selected to maximize distance from neighboring wells, to minimize potential drawdown interference and to obtain the groundwater at points of need. It is expected that two wells will provide greater flexibility in water system design, will allow for operation and maintenance in one well while keeping the other well productive, and allow for emergency/standby use. Well depths will be approximately 1,150 feet. Maximum drawdown on neighboring wells, would be expected to occur during the summer months. Site 1, Well 1 on USAF Plant 42 one-fourth mile east of the property would have a maximum monthly drawdown of 2.03 feet. The maximum theoretical drawdown of the Landale Farms Well No. 1 (one-half mile north of the property) would be 1.11 feet.

Of more importance is the long-term impacts of additional groundwater withdrawal represented by the project. Overall direct and indirect water demands of the project would be 5,520 acre-ft/year. On the order of one-half or 2,760 acre-ft/year could be withdrawn from the groundwater basin. The region faces large new water demands as the population continues to grow. The imported water supply can be cut back during times of shortages and it is inevitable that municipal demands will continue to mount on the groundwater supply. Given the long history of overdrafting and large groundwater declines historically experienced in the Basin, the project is judged to have a significant groundwater impact. This impact could be partially mitigated by full utilization of regional entitlements to State Project Water and by a regional groundwater management program (or Basin adjudication) assuring that pumpage was brought in line with the long-term safe yield of the Basin. The State Water Project falls far short of meeting demands during drought periods. In addition, the water allocation process for the Bay-Delta region, the source of State Project Water, could result in further cutbacks in the amount of water available from this imported source. As stated in Section 3.3.1.2, a study has recently begun which will provide the information needed to formulate a regional groundwater management plan. Until that plan is formulated and implemented, substantial additional water demands, such as that represented by the proposed project, will continue to have significant groundwater impacts.

The project may utilize drywells to control the minor amounts of nuisance runoff that typically occurs from urban-type developments due to irrigation or other runoff. City dry wells are subsurface injection systems which include an interceptor (settling chamber) and a dry well (percolation chamber). This practice could impact the quality of the underlying groundwater. Unless carefully controlled, pollutants escaping in runoff from industrial areas would be infiltrated and carried downward toward the groundwater. The great depth to groundwater at the project site (300 to 400 feet) largely protects against serious pollution from this source. But care must be taken to assure that discharge of process waters, rinse waters from industrial process areas, runoff from chemical or fuel storage areas and other similar sources of potential contamination are avoided and/or properly controlled and/or treated. This is particularly true with the airport-related industry proposed for the eastern side of the project site. This type of activity can result in minor amounts of spilled fuels, oils and solvents on paved airport aprons which can then be washed into the local drainage system. As appropriate, drainage from this area should be passed through oil/water

separators prior to discharge to drywells or the stormwater drainage system. With proper design and drainage control, the use of drywells is not expected to impact local groundwater quality.

The golf course uses associated with the proposed project are expected to require the use of herbicides, fertilizers, and pesticides. Many of these substances contain nitrates which have the potential to adversely impact the local groundwater quality. The potential for groundwater impacts is highest on wells that are downgradient from the proposed golf course uses. Mitigation measures are recommended that would minimize the use of fertilizers and herbicides that are utilized for the golf course.

3.3.2.3 Surface Water

A drainage study for the project site has been prepared (Church Engineering, November 1992). The results of that study and the proposed drainage improvements to handle project runoff are summarized below.

The project preliminary drainage study was prepared in accordance with the Drainage Management Plan of the City of Palmdale and the specifications of the Los Angeles County Flood Control District. The Modified Rational Method was used under a standard, capital storm, 50-year storm frequency conditions. The project site and area immediately to the south was broken into 136 subareas for the purpose of local runoff calculation. Project site runoff under existing, undeveloped conditions was first calculated for the three locations where runoff exists the site and crosses Avenue M: (1) the northwest corner near the railroad, (2) at Challenger Way, near the center of the site, and (3) at the northeastern corner of the site, near 15th Street East. The project site was calculated to generate a total of 248 cubic feet per second (cfs) of peak runoff under current conditions. Some stormwater was also determined to be retained onsite in several natural depressions.

Figure 3.3-4 shows the proposed drainage system. Upstream flow passing underneath the railroad tracks is proposed to be routed through an unlined channel which crosses diagonally through the project site, rather than routed north to Avenue M along Sierra Highway, as is called for in the current master drainage plan. In this manner, a peak flow of nearly 1,100 cfs is estimated to enter the project site near its southeast corner. Local, offsite drainage, further to the north along Sierra Highway, would then be piped north to Avenue M in a much smaller facility: a 42-inch concrete pipe. The Master Plan 9'x8' RCB, in Sierra Highway, will be terminated near the southwesterly corner of the site. Flows from the RCB will be routed into the project through a culvert system under the Southern Pacific Railroad/Metrolink Line right-of-way. This channel will convey these regional flows northeasterly through the golf course portion of the project to Avenue M and then easterly along the south side of Avenue M to 15th Street East at the northeast corner of the project. This unlined channel system will discharge into the USAF Plant 42 Retention/Detention Basin facility through a culvert system under 15th Street East. This unlined variable width and trapezoidal channel system shall be designed to convey the proposed regional flows. The design will also minimize velocities and provide for adequate accessibility and ease of maintenance.

The rerouting of the major regional flows from the 9'x8' RCB onto the site will not eliminate all flows which are tributary to Avenue M at Sierra Highway. A proposed regional storm drain facility will need to be constructed in Avenue M from Sierra Highway easterly to the confluence with the

proposed unlined trapezoidal channel along Avenue M. This storm drain will be constructed within the street right-of-way of Avenue M and shall be designed to intercept regional flows from the west, and southwest, in accordance with the City Master Plan of Drainage. The Avenue M storm drain shall provide for drainage of localized areas and related existing drainage facilities in the vicinity of Avenue M and Sierra Highway. An additional reach of storm drain will be required to be constructed along the east side of Sierra Highway, from Avenue M to approximately 2,000 feet south to intercept minor flows which are tributary to Avenue M.

The construction of the above noted drainage facilities is intended to eliminate the need for the 9'x8' RCB in Sierra Highway, from the proposed point of termination to Avenue M, and the lined trapezoidal channel along the south side of Avenue M which are recommended in the City Master Plan of Drainage. The City Master Plan of Drainage should be modified to reflect these proposed facilities.

The proposed regional facilities noted above will discharge into the Plant 42 Retention Basin located east of 15th Street East, along the south side of Avenue M, within USAF Plant 42 east of the project site. The Air Force has indicated that these existing retention facilities are inadequate to handle current runoff which is tributary to the Plant 42 Retention Basin facilities. The City of Palmdale's Master Plan of Drainage recommends that the Plant 42 Retention/Detention Basin facilities be significantly expanded to provide capacity for the increased runoff caused by development within the Anaverde Basin and for the diversion of runoff from the west in the master planned drainage facilities. The proposed modifications to these regional facilities, as described above, will not increase the volume of runoff which will be discharged into the Plant 42 Retention/Detention Basin facilities. Any plans for expansion of the Plant 42 Retention/Detention Basin facilities must be approved by the Air Force. The proposed project will be required to mitigate any increases in runoff to Plant 42 which are generated by the development of this project. Based upon the design criteria of the City of Palmdale, it is estimated that development of the project will require approximately 80 acre-feet of retention storage to mitigate the development.

The City of Palmdale has proposed an agreement whereby collection of certain drainage and traffic impact fees will be waived for the Palmdale Business Park Center development in return for conveyance of property (141 acres) which will provide the site for construction of an upstream drainage retention basin (a substitute for the "Lockheed" basin as shown in the City's Master Plan of Drainage).

The 236-acre golf course would be designed to retain all runoff from the golf course. This would be achieved through the construction of local depressions situated among the greens, tees and fairways. Maximum ponding depth would be limited to 2 feet. This would provide for full percolation of the retained stormwater within 7 days, meeting the city standards for retention basins.

A street drainage system would be constructed for the remaining 336 acres of site development, as shown in Figure 3.3-4. Street inlets and pipe sizes would be designed to achieve basic city requirements which include: maintenance of a clear street lane during the 25-year event.

The drainage system as proposed would adequately handle both upstream (offsite) and project-related runoff. It would eliminate the small FEMA flood hazard area in the northwest corner of

the project site. By channeling area runoff to a new regional detention basin, the project would also eliminate or reduce existing, downstream flooding problems in Lancaster, north of Avenue M.

The Palmdale City Engineer must approve the changes in the Anaverde Master Drainage Plan proposed by the project. It is critical that portions of the master drainage plan be constructed in a timely manner if the project drainage plan is to operate as proposed. For instance, the flow capacity of the culvert underneath the railroad tracks, near the southwestern corner of the project site, would need to be increased in order for the concept of passing upstream flows diagonally through the project site to work. In turn, the Plant 42 Retention Basin or other retention basin facility would need to be greatly expanded to handle the increased flows resulting from the diversions proposed by the project, as well as the increased runoff resulting from the project, itself. The current runoff detention in this portion of Plant 42 is inadequate to handle existing flows (Mok, personal communication, 1993). Although supportive of the concept, the Plant 42 Engineering Group has yet to receive a formal proposal for expansion of the Plant 42 Basin from the city (Mok, personal communication, 1993). Finally, discussions are underway between the City and an upstream property owner concerning the sizing of an upstream detention basin (the Lockheed Basin) which could impact flows passing through or near the project site. Depending upon the decisions made, the proposed drainage plan for the project may need further revisions.

As discussed in the previous subsection, the project proposes to construct drywells to control the limited amounts of dry season nuisance runoff which the project may generate.

The project is proposed to be constructed in eight phases. The first phase would involve construction of the golf course and would result in well over 100 acres of ground disturbance. As stated in Section 3.1.2, the soils at the project site are not highly erosive. Given the gentle slope of the project site, the project would cause relatively limited erosion. Associated water quality impacts during construction are expected to be minor. Construction measures to minimize erosion may include diversion of upstream runoff, temporary sedimentation ponds, small check dams or other methods of slowing the runoff, and immediate revegetation of disturbed areas.

Revisions to the state water quality regulations now require the issuance of a stormwater permit for all construction sites greater than 5 acres. The Lahontan Regional Water Quality Control Board is the issuing agency. Among other items in applying for this permit, the applicant must develop a Storm Water Pollution Prevention Plan (SWPP). This plan must illustrate the implementation of appropriate pollution control measures and facilities for minimizing the escape of sediment or other pollutants from the construction site. The SWPP Plan utilizes Best Management Practices (BMPs) to control stormwater and sediment leaving the site. When implemented, these practices can be highly effective in controlling stormwater pollutants in receiving waters. This permit system assures that no construction would not result in serious pollution of runoff from the project site.

Additionally, the Lahontan RWQCB may require a permit for discharge of runoff from selected industrial sites. To obtain a permit in this situation, the applicant would, among other things, need to demonstrate adequate control of drainage from storage yards or other areas where toxic materials or wastes were stored or transferred. Proper control of all drains and sumps to prevent contaminants from leaving the plant site would also need to be shown. To assure compliance with both these stormwater discharge permit requirements, the city will involve the Lahontan RWQCB in the reviews of specific development proposals for the project site.

With the implementation of the proposed drainage improvements and storm water pollution prevention plans during construction, the surface water impacts of the project would not be significant.

3.3.3 Mitigation Measures

The implementation of the following mitigations will reduce potential surface water impacts to non-significant levels. Water demands would be reduced but would still result in a significant impact to groundwater.

- #14 Drought-tolerant landscape plant material shall be utilized in all landscaping. All development shall be in conformance with City of Palmdale Water Conservation in landscaping ordinance.
- #15 Native vegetation shall be retained to the extent feasible within the landscape areas.
- #16 Within the golf course area, retain the maximum amount of native vegetation practical.
- #17 Controlled use of pesticides and fertilizers within common areas including the golf course shall be enforced through provisions in the landscape plan for that development, including frequency and type of fertilizers/pesticides to be used, and application by qualified persons. For golf course area (that would drain into the proposed open drainage channel), special considerations should be given to use of slow release fertilizers and contact herbicides, prohibition of fungicides and broad spectrum insecticides, and the suppression of mosquito populations using bacterial insecticides or light oils instead of chemical agents.
- #18 Water-conserving appliances and plumbing fixtures shall be utilized in all new construction, as recommended by the California Department of Water Resources.
- #19 Where feasible, permeable paving materials shall be used in hardscape areas to maximize infiltration. The project shall be designed to retain and percolate site runoff to the extent practical.
- #20 Parking lots and gutters of the project site shall be swept at least once per month for industrial sites and once per week for commercial and office sites to prevent the accumulation of pollutants which would be washed into area drainage channels during storms.
- #21 For individual projects, the City shall require evidence that the Applicant has obtained a storm water discharge permit from the Lahontan RWQCB. All industrial proposals must demonstrate compliance with the Lahontan RWQCB requirements for industrial site NPDES review. An oil/water separator or other appropriate means of runoff water quality control shall be implemented for the aircraft apron constructed in the airport-related industrial area located at the eastern side of the project site.

#22 The Project Proponent will pay the required drainage fees for regional flood control facilities identified in the City of Palmdale Master Plan of Drainage. Regional facilities constructed as part of the Palmdale Business Park Center Specific Plan Drainage Plan will be credited against drainage fee for the project.

#23 Measures to minimize the amount of groundwater consumption by large turf users (3 acres and over) shall be incorporated in the design and maintenance of such uses. Measures shall include, but are not limited to, the following:

- a. Golf course fairways shall not exceed an average width greater than 40 yards (120 feet).
- b. Non-turfed rough areas shall not be included in fairway and rough area calculations.
- c. Lawn turfed areas, excluding tee boxes and greens, shall consist of drought tolerant species, warm season grasses, hybrid fescue or lawn substitutes.
- d. All turfed area irrigation systems shall consist of a Confinement/Desert system, controlled by an automatic control system, both employing industry standard Reasonably Available Technology (RAT).

3.3.4 Impacts After Mitigations

Groundwater impacts of the proposed project would remain significant even after the application of mitigation measures.

3.4 BIOLOGICAL RESOURCES

3.4.1 Existing Conditions

Information on the biological resources occurring on the project site is based upon existing documentation and data gathered during field surveys conducted in April and May 1993. Additional information can be found in the Biological Survey Report and the Desert Vegetation Plan prepared for the project site. In addition to evaluating the general biological resources present on the site, specific surveys were conducted for the desert tortoise, Mohave ground squirrel, and other sensitive wildlife and plant species. A total of 168 hours were spent in the field during the surveys. The project site is located in the western Mojave Desert at the southern end of the Antelope Valley. The area occupies relatively flat terrain which supports vegetation communities typical of the Mojave Desert. The property is relatively undisturbed although it has received some disturbance from various human activities. There are several dirt roads and dump sites scattered throughout the property. A chain link fence surrounds the property on the east and south, separating the site from Air Force Plant 42. An arterial, Avenue M, borders the north side of the site while railroad tracks border the west side. One "blueline" stream passes through the project site. It is discussed in Section 3.3 of this document.

3.4.1.1 Vegetation

Desert scrub and Joshua tree woodlands are the two native plant communities occurring on the project site (Figure 3.4-1). There is a considerable amount of intermixing among the plant communities, with boundaries between communities indicating a change in the relative species composition and not an abrupt change in habitat type.

Desert Scrub

Desert scrub is one of the most common plant communities in the western Mojave Desert, and is found throughout the project site and surrounding region. The desert scrub community on the site consists primarily of high quality scrub and supports a wide variety of plant species. The most common plants included rabbitbush (*Chrysothamnus nauseosus*), creosote bush (*Larrea tridentata*), saltbush (*Atriplex canescens*), ephedra (*Ephedra sp.*), boxthorne (*Lycium sp.*), hopsage (*Grayia spinosa*), and burrobush (*Ambrosia dumosa*). The ratio of these dominant species is apparently dependent upon various local physical factors such as slope, soil type, and the amount of past human disturbance. In addition to the dominant rabbitbush, other species commonly observed include goldenbush (*Haplopappus sp.*), buckwheat (*eriogonum fasciculatum*), cholla (*Opuntia sp.*), mustard (*Brassica sp.*), filaree (*Erodium sp.*), desert primrose (*Oenothera brevipes*), downey chess (*Bromus tectorum*), winterfat (*Eurotia lanata*), rice grass (*Oryzopsis hymenoides*), and needlegrass (*Stipa speciosa*). A comprehensive list of plant species observed on the site and in the surrounding area is provided in Appendix B of the Biological Survey Report for the project.

Joshua Tree Woodland. In addition to the desert scrub, Joshua trees (*Yucca brevifolia*) are found throughout the project site. There are approximately 4,592 Joshua trees on the site with densities as great as 75 to 100 trees per acre. The most dense woodland areas are in the southwestern and northeastern portions of the property. The majority of plant species found in the desert scrub community were also present in the Joshua tree woodlands. No discernable difference was noticed

between the desert scrub and the woodland communities with annual and perennial species diversity virtually identical. Joshua trees are protected under the City of Palmdale Native Vegetation Ordinance, consequently, a site specific Desert Vegetation Preservation Plan has been prepared for the project. The City of Palmdale Native Vegetation Ordinance requires preservation or relocation of two Joshua trees per developed acre of land.

3.4.1.2 Wildlife

The habitats occurring on the site support a diverse assemblage of wildlife species typical of the western Mojave Desert. Wildlife species observed during the field surveys and those known to occur in the general area are discussed below. A comprehensive list of species occurring on the site and/or in the region is provided in Appendix B of the Biological Survey Report for the project.

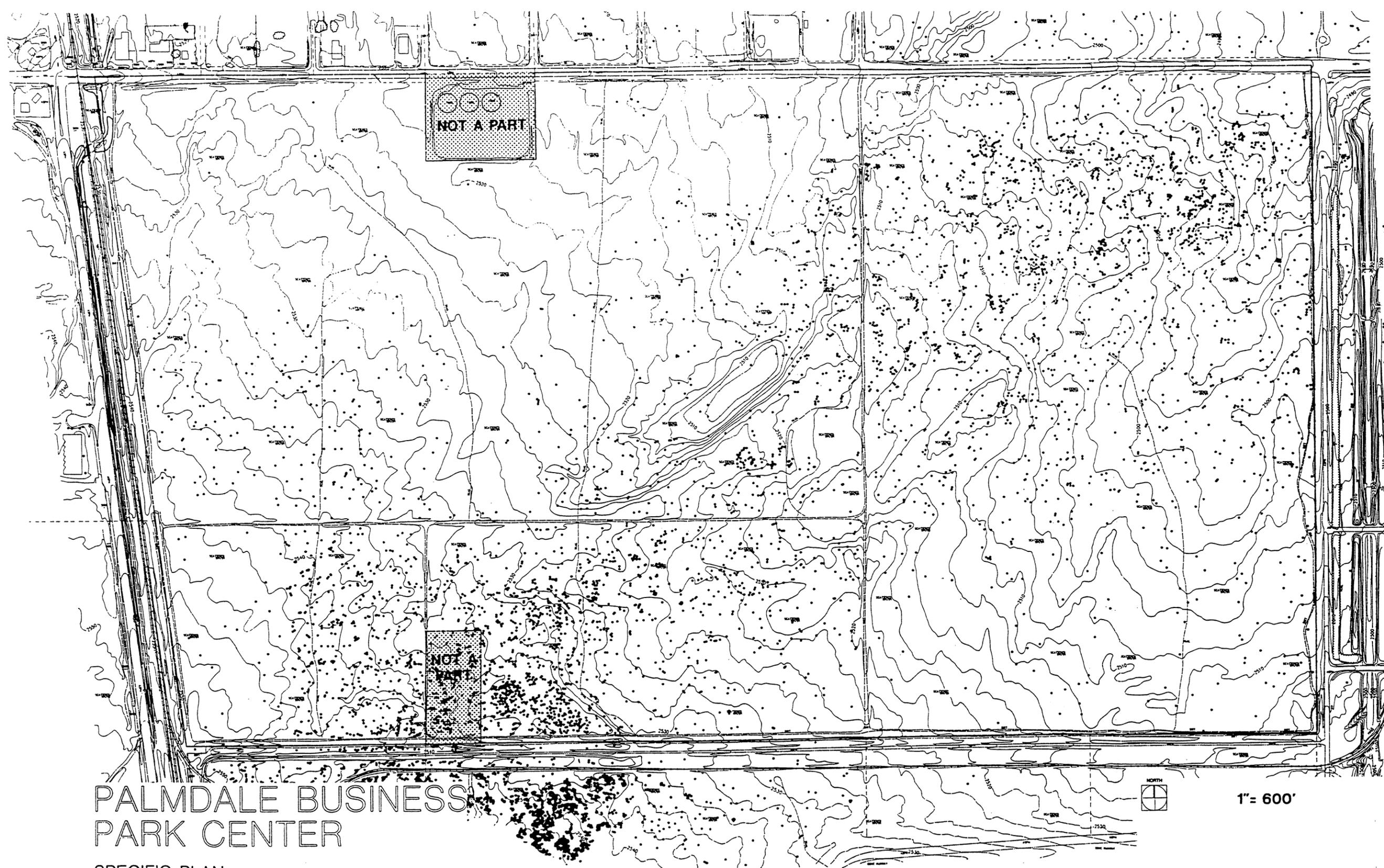
Avian species are by far the most abundant of the vertebrates occurring on the project site and in the general area, with numerous birds migrating throughout the region during the spring and fall months. Resident species are also common to the area including the house sparrow (*Carpodacus mexicanus*), morning dove (*Zenaida macroura*), greater roadrunner (*Geococcyx californianus*), song sparrow (*Melospiza melodia*), common raven (*Corvus corax*), California thrasher (*Toxostoma redivivum*), cactus wren (*Campylorhynchus brunneicapillus*), and northern mockingbird (*Mimus polyglottus*). Raptors such as the red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*) are also frequently observed in the area. The prairie falcon (*Falco mexicanus*) may also occur within the region.

No live trapping surveys were conducted on the property; however, several species of small mammals inhabit the western Mojave Desert and are expected to occur on the project site. Some of the more common species include the western harvest mouse (*Reithrodontomys megalotis*), desert woodrat (*Neotoma lepida*), little pocket mouse (*Perognathus longimembris*), and various mice species (*Peromyscus sp.*). Mammals observed on the project site included antelope ground squirrel (*Ammospermophilus leucurus*), California ground squirrel (*Spermophilus beecheyi*), black-tailed jack rabbit (*Lepus californicus*), desert cottontail (*Sylvilagus auduboni*), and coyote (*Canis latrans*). The kit fox (*Vulpes macrotis*) also occurs in the region, but was not observed during the surveys.

Reptile populations are not as diverse in the region as are birds and mammals; however, several species do inhabit the site. Some of the reptiles more commonly observed included the side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), western fence lizard (*Sceloporus occidentalis*), desert spiny lizard (*Sceloporus magister*), and coachwhip (*Masticophis flagellum*). Snake species inhabiting the western Mojave Desert include the gopher snake (*Pituophis melanoleucus*), sidewinder (*C. cerastes*), and Mojave rattlesnake (*Crotalus cerastes*). The desert horned lizard (*Phrynosoma platyrhinos*) and sagebrush lizard (*Sceloporus graciosus*) may also inhabit the desert scrub areas, but none were observed during the surveys.

3.4.1.3 Sensitive Biological Resources

For the purpose of this document, "sensitive species" are those which are given protection under state and/or federal endangered species acts (e.g, threatened or endangered species), or those species listed as federal candidates and California Department of Fish and Game "Species of Special Concern." Plant species also listed as "sensitive" by the California Native Plant Society are also



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LEGEND

- * INDICATES EXISTING JOSHUA TREE SPECIMENS
- TOTAL: 4592 EXISTING TREES ON-SITE

Figure 3.4-1: EXISTING VEGETATION

Source: David A. Price Associates, 1994

discussed below (The California Native Plant Society is a private organization which provides information to state and federal agencies on rare plant distributions within California.)

Discussed below are several plant and animal species which may occur in the general region. Of these sensitive plants and animal species listed below, 3 of the 18 species (Joshua trees, Loggerhead shrike, and California horned lark) were observed on the project site. Most of these species were not observed on the property during the field surveys and are unlikely to occur on the site; however, it is important to discuss these species as part of the environmental review process.

Plants. Peirson's morning glory (*Calystegia peirsonii*): This species is a U.S. Fish and Wildlife Service (USFWS) Category 2 candidate species and has been recorded in the area (California Natural Diversity Data Base 1987 [CNDDDB]). Peirson's morning glory occurs primarily on dry slopes in desert scrub habitat.

Desert cymopterus (*Cymopterus deserticola*): This USFWS Category 2 plant is a perennial occurring in desert shrub and Joshua tree woodland habitats.

Alkali mariposa lily (*Calochortus striatus*): This species is found in undisturbed meadows where alkali soils are present. This plant is listed as a USFWS Category 2 species. The alkali mariposa lily was observed in the general area in 1982, according to the CNDDDB. Over 1000 plants were identified immediately west of Sierra Highway approximately 6 miles north of the property site (Lancaster West Quadrangle, 7N, 12W, Section 3). Since the species is found primarily on alkaline soils and no alkaline soils are known to occur on the site it is unlikely the Alkali mariposa lily would be found on the property.

Mojave spineflower (*Chorizanthe spinosa*): The Mojave spineflower has a relatively limited distribution in California and has been placed on the "watch list" by the California Native Plant Society. This species occurs in the region primarily in creosote bush scrub communities on slopes between 2,500 to 3,500 feet in elevation.

Short-joint beaver-tailed cactus (*Opuntia basilaris* var. *brachyclada*): This is a small cactus occurring on the desert slopes of the San Bernardino and San Gabriel mountains, and may occur within the region.

Joshua tree: Joshua trees (*Yucca brevifolia*) within the City of Palmdale are protected by a recently adopted native desert vegetation ordinance. Projects are required to submit a Native Vegetation Preservation Plan which identifies Joshua tree locations on a site and which recommends suitable mitigation measures. As previously mentioned, Joshua trees occur throughout the site. A site specific Desert Vegetation Preservation Plan has been prepared for the site.

Animals. Desert tortoise (*Xerobates agassizii*): The desert tortoise is listed by the USFWS as a threatened species and as an endangered species by the California Department of Fish and Game (CDFG). The project site lies within the southwestern part of the tortoise's range and current data indicate the species still occurs in the region, although population levels are quite low. The U.S. Bureau of Land Management has ranked the area as a Category 3 area indicating a very low population density.

No live tortoises were encountered on the subject property during the field surveys, and no active or inactive burrows were observed. However, one tortoise scat (greater than 12 months old) and one scute (i.e. part of a tortoise shell) were found in the northeastern part of the property. The absence of any other tortoise sign from the rest of the site indicates that the scat and scute may have come from a captive tortoise which was released on the site and which eventually died. A new fee program is being developed for the desert tortoise as part of the West Mojave Conservation Plan; however, the fee program will not be finalized until 1995.

Mojave ground squirrel (*Spermophilus mohavensis*): This species is listed as threatened by CDFG and as a Category 2 species by USFWS; however, the State Game Commission voted in 1993 to delist the species. However, a mid-1994 court ruling overturned the vote to delist the species and specified that the Game Commission would have to prepare an environmental impact report to fully evaluate the species prior to delisting the Mohave ground squirrel. As of October 1994, the species is still listed as a threatened species, and is protected under the California Endangered Species Act. The Mojave ground squirrel is found primarily in creosote bush scrub communities and is known to occur in the general area. The most recent sighting was in 1984 approximately 2.5 miles north of the project site (Lancaster East Quadrangle T7N, R12W, Section 23). A Mohave ground squirrel was also observed in 1973, 4.5 miles east of the site (Lancaster East, T7N, R11W, Section 3). A Cumulative Impact Rating (CIR) analysis was performed for the project site as part of the Mojave ground squirrel survey. The "CIR" was calculated to be 30 for the project site indicating a low to moderate level of human disturbance. A "CIR" rating can vary from 0 (pristine habitat) to 40 (highly disturbed habitat). A detailed analysis of the Cumulative Impact Rating analysis is provided in a separate Biological Report.

Coast horned lizard (*Phrynosoma coronatum*): Two subspecies of the coast horned lizard occur in southern California and include the San Diego horned lizard (*P. c. blainvillei*) and the California horned lizard (*P. c. frontale*). The San Diego horned lizard is a federal Category 2 subspecies and a California Department of Fish and Game Species of Special Concern, whereas, the California horned lizard is only listed as a Species of Special Concern. The coast horned lizard is found throughout the desert where it's primary food, the harvester ant (*Pogonomyrmerx spp.*) is present. Several factors such as habitat loss, collection of the species for pets, and mortality from domesticated animals and vehicles have caused population levels to decline drastically. The coast horned lizard has been observed in the immediate area according to the California Natural Diversity Data Base (CNDDB). A specimen was collect in the 1980's immediately northwest of the site (Lancaster West Quadrangle, T7N, R12W, Section 34). The relatively recent sighting of the coast horned lizard in the area indicates the species may occur on the project site, although none were observed.

Loggerhead Shrike (*Lanius ludovicianus*): The loggerhead shrike is a Federal Category 2 species normally found in open areas with scattered shrubs and trees. This species occurs in Joshua tree woodlands and was observed on the project site during the surveys. This is a year-round resident of the Antelope Valley and may nest on the project site.

California horned lark (*Eremophila alpestris actia*): This bird is a Federal Category 2 subspecies occurring in association with grasslands, fields, and similar open habitats. This species was observed on the project site during the surveys. It is a year-round resident of the Antelope Valley

and may nest on the project site, although no confirmation of nesting was obtained during the surveys.

Le Conte's thrasher (*Toxostoma lecontei*): This species is listed as a California Species of Special Concern and is known to occur within the area. It typically inhabits sparse desert scrub areas, Joshua tree woodlands, and desert washes.

Black-shouldered kite (*Elanus caeruleus*): The black-shouldered kite, which is fully protected by the state, is considered to be a rare species with a relatively restricted range in California. The species utilizes the Palmdale area as a wintering habitat but was not observed during the surveys.

Northern harrier (*Circus cyaneus*): This bird is a California Species of Special Concern and is primarily associated with marshes and grassland areas. These particular habitats are not found on the project site.

Burrowing owl (*Athene cunicularia*): Burrowing owls may occur in the open areas where abandoned ground squirrel burrows are available. This species is listed as a California Species of Special Concern. None were observed during the field surveys.

Long-eared owl (*Asio otus*): This California Species of Special Concern inhabits riparian habitats and may occasionally occur within the region, although, suitable riparian habitat is not found on the site.

Pale big-eared bat (*Plecotus townsendii pallescens*): The big-eared bat is listed by CDFG as a threatened subspecies. It occurs in the desert scrub habitats, however, it was not observed on the project site.

American badger (*Taxidea taxus*): This species is listed as a California Species of Special Concern due to loss of habitat from urbanization and agricultural activities, and human induced mortality. The badger occurs in open habitats and suitable habitat is located on the project site; however, no badgers were observed during the surveys.

Silvery legless lizard (*Anniella pulchra pulchra*): This lizard is a California Species of Special Concern found under leaf litter and debris, and in sandy soils. Suitable habitat is found within the City of Palmdale; although, none were sighted on the project site during the surveys.

Swainson's hawk (*Buteo swainsoni*): The Swainson's hawk, which is listed as a State threatened species, occurs throughout the arid regions of the western United States. It occurs primarily in open habitats where it forages for small mammals, birds, and reptiles.

Sharp-shinned hawk (*Accipiter striatus*): This species is found in southern California in mixed woodlands primarily during the winter months, and may be an infrequent visitor to the Antelope Valley area. It is listed as a Species of Special Concern.

Copper's hawk (*Accipiter cooperii*): The Cooper's hawk is a Species of Special Concern and, like the Sharp-shinned hawk, is found primarily in woodland habitats. It may also be an infrequent visitor to the western Mojave Desert.

Prairie falcon (*Falco mexicanus*): The Prairie falcon inhabits dry, open habitats and is a Species of Special Concern. It is uncommon throughout California and may occasionally be seen in the Antelope Valley.

Some of the transitory and/or resident raptors (i.e. Black-shoulder kite, Northern harrier, Long-eared owl, Swainson's hawk, Cooper's hawk, Sharp-shinned hawk, and Prairie falcon) may occasionally utilize the project site for foraging purposes. Some of the larger Joshua trees may also serve as roosting and/or nest sites. One potential raptor nest was observed in the southwestern portion of the site. If the nest is being utilized by a raptor during the construction phase of the project, the nest should be avoided during the nesting season (approximately March through July) until the juvenile birds have left the nest.

3.4.2 Project Impacts

Site specific development activities would involve extensive grading and excavation work which would remove the majority of native vegetation from the project site. The proposed plan calls for construction of numerous commercial buildings, roads, parking lots and a golf course. Construction activities would impact biological resources causing the loss of high quality scrub vegetation, approximately 3,000 Joshua trees, and potential sensitive species habitat.

Removal of native plant communities would also have an impact on wildlife on the project site. Wildlife species which are relatively mobile (e.g. birds, etc.) would be displaced into adjacent habitats which may or may not be able to support an increase in the population levels. Some displaced wildlife may experience increased mortality or be forced into wider dispersal if adjacent habitats are at carrying capacity. Less mobile animals would experience increased mortality.

The loggerhead shrike and horned lark, both of which are federal candidate species (Category 2), are known to occur on the project site. These species nest within the Palmdale area and may also nest on the project site. Development activities would cause displacement of these sensitive species. In addition, one desert tortoise scat and one scute (i.e. shell fragment) were found in the northeastern portion of the site, and may have come from a captive tortoise recently released on the project site. However, no other tortoise sign (e.g. burrows, tracks, etc.) were observed, and the site does not currently support any tortoise population. Development of the site is not expected to affect the tortoise.

The Mojave ground squirrel was not observed on the project site; however, the species does occur within the general area surrounding the property. The high quality habitat may support populations of the Mojave ground squirrel. Removal of a majority of vegetation currently found on the site could have an adverse affect on the Mojave ground squirrel, if the species is present on the project site. Mitigation requirements for this species will be determined by the California Department of Fish and Game following review of all documentation.

Indirect impacts are also expected to occur as a result of site development. Indirect impacts would include introduction of exotic plants and non-native plant species around the proposed buildings and increased human intrusion into native habitats.

Overall impacts to the biological resources are rated as significant. This rating is based on the loss of high quality desert scrub and Joshua tree woodlands, and the loss of potential Mojave ground squirrel habitat. In addition, there was limited desert tortoise sign observed on the site. The project site is surrounded by low to moderate levels of development. Although the onsite impacts of the project are considered significant, the project is not expected to generate significant cumulative impacts in the general area when considered in relation to other proposed developments in the region.

3.4.3 Mitigation Measures

Impacts associated with site development could be minimized or eliminated in some cases by the implementation of various measures. These measures include:

- #24 Modified development activities should occur within the dense stands of Joshua trees which occur in the southwestern and northeastern portions of the project site. This can be accomplished by creating special Joshua Tree Preservation and/or Restoration Zones and by modifying the proposed building locations and development activities within these areas so that many of the Joshua trees could remain in present locations. Figure 3.4-2 identified two Joshua Tree Preservation Areas (Zones A and B) in the southwest portion of the project site and Figure 3.4-3 identifies an additional Joshua Tree Restoration Area at the proposed nine hole, Executive Golf Course (Zone C). Modified development activities are proposed in Zones A, B and C as noted below:

Zone "A" Joshua Tree Preservation Area. Existing trees to be preserved in place. Only exception shall be possible removal and/or relocation of Joshua Trees for future Challenger Way extension through the golf course. Approximately 72 Joshua trees are located in Zone A.

Zone "B" Joshua Tree Preservation Area. Existing trees to be preserved in place. Approximately 358 Joshua trees are located in Zone B.

Zone "C" Joshua Tree Preservation Area. The proposed 9-hole Executive Golf Course within Planning Areas CG-1 through CG-4 (see Figure 2-3, Land Use Plan and Project Summary) will occupy approximately 55 acres. Within the zone, 4 Joshua trees per acres shall be preserved in place and/or relocated within the boundaries of this area. Of this amount, 25 percent shall be preserved in place. Total number of Joshua trees to be preserved in place and/or relocated in Zone C is 220. Total number of Joshua trees to be preserved in place is 55.

Overall, the project will maintain a minimum average of two healthy Joshua trees per acre (1,254 trees total).

- #25 Large areas of existing desert scrub shall be retained wherever possible as part of onsite landscaping.

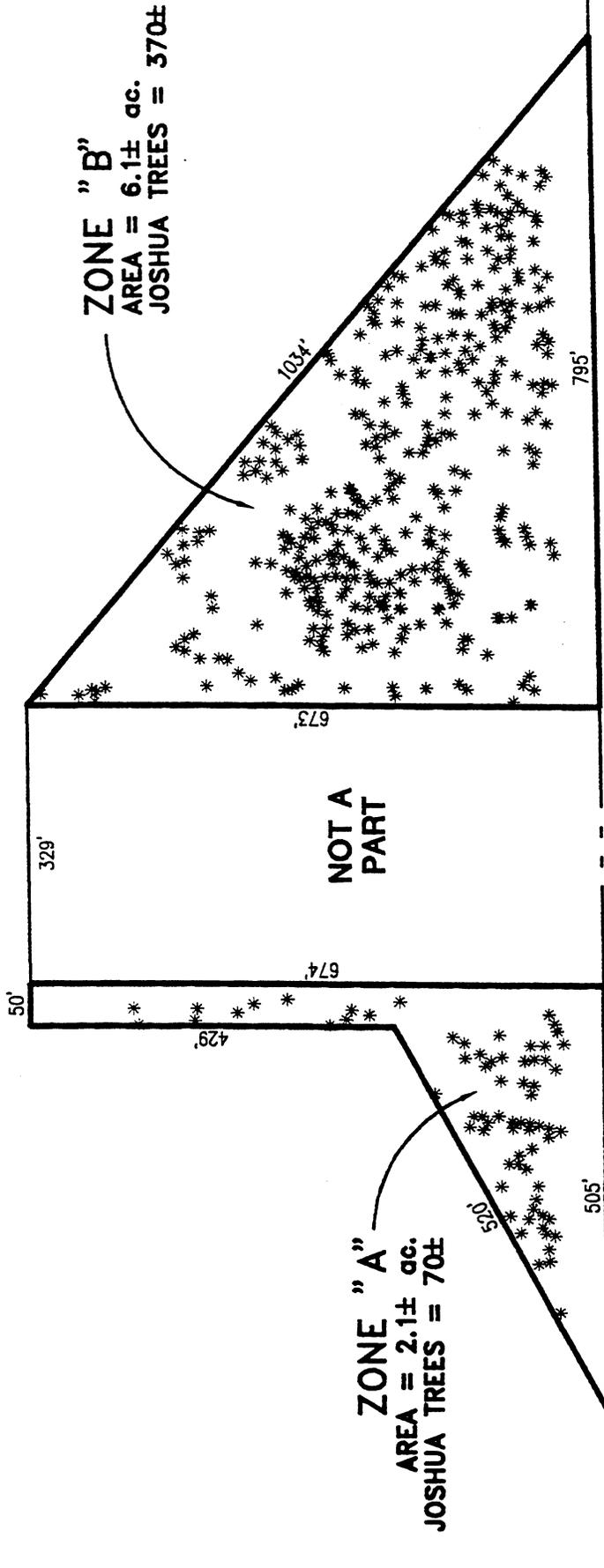


Figure 3.4-2: JOSHUA TREE ZONES "A" AND "B"
 Source: David A. Price Associates, 1995

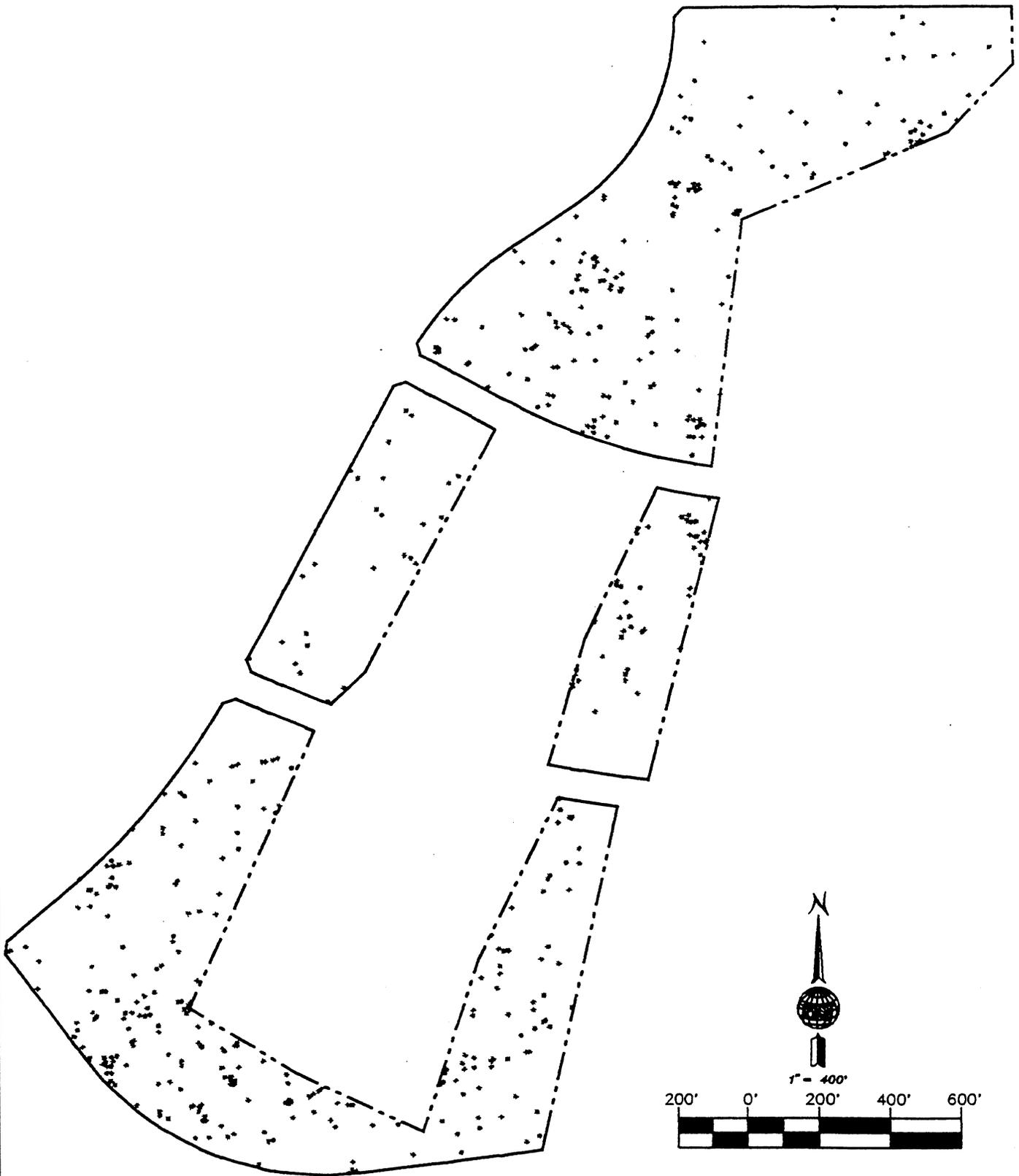


Figure 3.4-3: EXECUTIVE GOLF COURSE, JOSHUA TREE ZONE "C"

Source: David A. Price Associates, 1995

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- #26 Encourage the planting of drought resistant native shrubs and trees around the proposed buildings and golf course in order to minimize water usage and to provide quality wildlife habitat.
- #27 Project proponent shall ascertain and comply with any applicable requirements of the USFWS and CDFG.

In addition to those mitigations mentioned above, additional measures may be required by the CDFG and USFWS to compensate for the loss of potential Mojave ground squirrel and desert tortoise habitat. The presence of tortoise sign and the potential use of the site by Mojave ground squirrel may require the project proponent to apply for a Federal Section 10a permit and a State 2031 permit prior to development of the site. These permits are required when threatened and endangered species are affected by a proposed project. Following review of the Biological Survey Report and other environmental documentation, CDFG and USFWS will determine if the permits are required. If the permits are deemed necessary by the agencies, additional mitigation requirements may be incorporated into the permits issued for the project.

3.4.4 Impacts After Mitigations

The biological impacts of the proposed project would remain significant after the implementation of the recommended mitigation measures.

3.5 **LAND USE**

3.5.1 **Existing Conditions**

The current General Plan for the City of Palmdale was adopted in January 1993. The Palmdale Business Park Center project site is located in an area that is designated in the General Plan as Specific Plan Area 10, Lockheed North. The Specific Plan area is currently zoned M-A (aircraft). The site is expected to be zoned SP as part of the General Plan Zoning Consistency rezoning.

The 632.40-acre site is currently undeveloped. It is bounded on the north by Avenue M; on the east and south by Air Force Plant 42; and by the Southern Pacific Railroad tracks and Sierra Highway on the west. There are no paved roads on the site. There are several dirt roads and tracks that traverse the property. The site is devoid of any signs of past usage with the exception of a small concrete pad and cleared area in the vicinity of Avenue M-8 and Challenger Way. Two small parcels adjacent to the site are excluded from the Specific Plan Area. One 7-acre parcel is owned by the Los Angeles County Waterworks District and accommodates 3 large water storage tanks and a producing water well. There is also a flat pad area for future expansion. The other is a 5-acre out parcel that is in private party ownership.

3.5.1.1 **Adjacent Land Uses**

The surrounding land uses are shown in Figure 3.5-1. The area north of Avenue M and east of Challenger Way is within the City of Palmdale. This is primarily vacant, undeveloped land. This area is designated in the City of Palmdale General Plan for industrial land uses. The zoning for the area is M-A (aircraft). The area west of Challenger Way is within the City of Lancaster. It consists primarily of scattered developments which include a mixture of commercial, industrial, and residential land uses. Air Force Plant 42 is located to the south and east of the project site. This area is designated in the General Plan for airport and related land uses. Northrop Corporation and Rockwell Corporation have manufacturing facilities located within Plant 42. The Lockheed Corporation leases some facilities within Plant 42 and also owns additional facilities and operates on land southwest of the Air Force property.

The basic mission of Air Force Plant 42 is to provide and maintain facilities for: (1) final assembly of high performance jet aircraft; (2) production engineering and flight-test programs; and (3) Air Force acceptance flight test of high performance jet aircraft manufactured by Department of Defense contractors assigned to Air Force Plant 42. The Air Force Plant 42 concept originated due to the seriousness of problems associated with flight testing high performance jet aircraft over heavily populated areas in the Los Angeles basin.

Air Force Plant 42 was developed to provide a location for flight testing these aircraft over an area that was sparsely populated with ideal weather conditions in close proximity to the aerospace industrial base in the Los Angeles basin. Operational control and management of Air Force Plant 42 is provided by Detachment 1 of the Aeronautical Systems Division which is headquartered at Wright Patterson AFB in Ohio.

The workforce at Air Force Plant 42 consists of over 8,000 people with the largest percentage being civilian contractor personnel. It is expected that the level of production and depot maintenance

activity will continue well into the future. Air Force Plant 42 also serves as the location for commercial air service in the Antelope Valley under a Joint Use Agreement with the Los Angeles Department of Airports. The number of flights at Palmdale Regional Airport is expected to increase considerably in the future.

There are four runways that are used at Air Force Plant 42. Runways 25 and 22 are used approximately 95 percent of the time due to the prevailing westerly winds in the area. Runway 25 is used the majority of the time since Runway 22 does not have navigational aids or night lights. The remaining 5 percent of the flights utilized runways 7 and 4. These are the two runways that are closest to the project site. The Plant 42 runways are utilized by a wide variety of aircraft ranging from C-5 and 747's to Cesna and Beech Aircraft.

The Southern Pacific Railroad right-of-way and the Sierra Highway are located directly west of the project site. On the west side of Sierra Highway is vacant land designated in the General Plan for a future Specific Plan comprising Business Park uses. No date has been established for completion of a Specific Plan for this area.

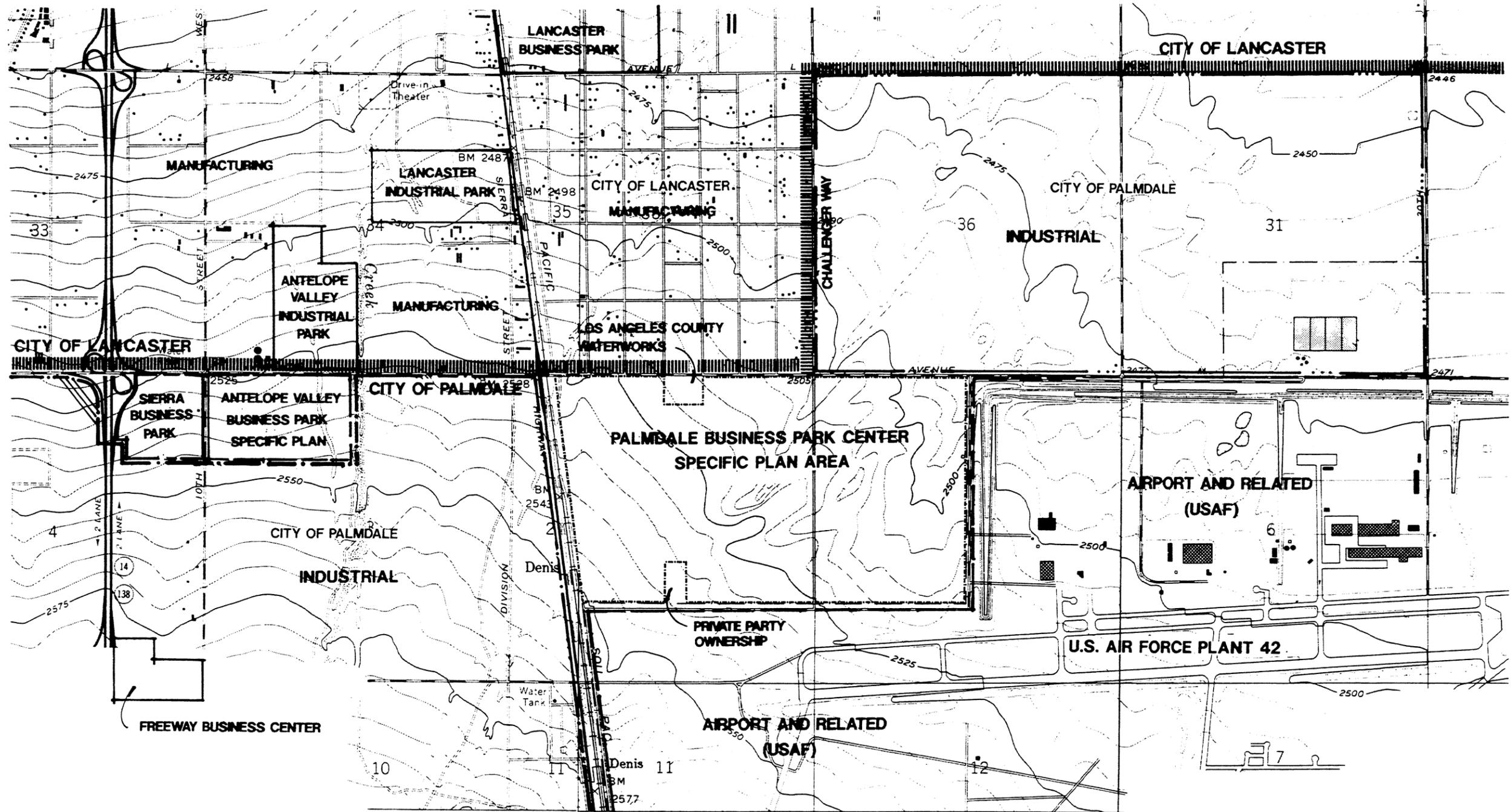
3.5.2 Project Impacts

3.5.2.1 Project Site

The entire 632-acre property is proposed to be developed in the Palmdale Business Park Center Specific Plan. The specific plan incorporates a mixture of community commercial, business park, light industrial, airport related, golf course, and open space uses. Community commercial land uses would encompass a total of 61.42 acres. Assuming 24 percent building coverage this area would support 642,109 square feet of building space. The community commercial land use is intended to establish development areas for businesses providing retail and service uses primarily serving the local market. The local market for the community commercial land use is expected to be the existing and proposed residential neighborhoods north of the project site as well as business users within the proposed development. Representative uses within this land use classification are restaurants, apparel stores, hardware stores, grocery markets, banks, offices, and similar uses. This land use zone has been limited to the major arterial corridor along Avenue M from the Southern Pacific Right-of-Way to the extension of Challenger Way. This location provides for direct accessibility and for high project visibility.

A total of 26.15 acres within the specific plan area are intended to be used for business park land uses. Assuming 30 percent building coverage this would allow the construction of over 341,728 square feet of building space. According to the City of Palmdale General Plan the Business Park (BP) designation is intended to permit a variety of office, research and development, light assembly and fabrication and supportive commercial uses within an environment characterized by master-planned complexes maintaining a high quality of design and construction. Development within this designation is expected to provide enhanced landscaping and outdoor amenities to create a campus setting. Operations and storage of materials will be confined to enclosed buildings.

Another major land use within the Palmdale Business Center Specific Plan is light industrial. A total of 165.61 acres will be devoted to this type of land use. This land use could support over 2.5 million square feet of gross building area based on the assumption of 35 percent building



PALMDALE BUSINESS PARK CENTER

SPECIFIC PLAN
PALMDALE, CALIFORNIA

LOCKHEED CORPORATION
4500 PARK GRANADA BLVD
CALABASSAS CA 91339-0220
(818) 876-2212



1" = 2000'

Figure 3.5-1: SPECIFIC PLAN AREA AND SURROUNDING LAND USES

Source: David A. Price Associates, 1994

coverage. This land use classification is intended to provide development areas for modern, non-nuisance, light industrial, and office type uses which are compatible with each other as well as the continued operation of Air Force Plant 42. This land area is intended to accommodate light industrial uses such as manufacturing and assembly of products and goods, warehousing, distribution, and similar uses. Commercial uses incidental to and supportive of the primary light industrial uses will also be permitted. Facilities within this land use zone will be sited within areas of enhanced landscaping. Operations will be confined within buildings and storage will be screened behind enclosure walls or berms.

A total of 87.92 acres within the specific plan area will be utilized for airport-related land uses. This area would support over 1.7 million square feet of gross building area. Airport-related land uses establish a direct link to Air Force Plant 42 and the Palmdale Regional Airport. This link will be accomplished through a taxiway connection of the existing runway facilities.

It is projected that airfield support facilities, aerospace-related industries, transportation-related industries, and commercial facilities (a part of the military/commercial are support industry) will establish facilities within this area. Onsite improvement requirements in the airport-related land use are generally less constraining than those within the business park.

A major land use within the Palmdale Business Park Center Specific Plan will be golf courses. Two golf courses are planned as part of the proposed project. A 182-acre 18-hole championship golf course is planned along the western and southern boundary of the project site. The 7,000-plus yard golf course will have 4 sets of tees on each hole. The areas between the tees, fairways and greens, will be left natural. Native desert vegetation will be retained or restored wherever possible.

The proposed project will also feature a 9-hole executive golf course. This 2,400-plus yard course will be routed through the business park area on approximately 54 acres of land. The course is expected to be challenging to all levels of golfers since it will feature water on five of the holes. The golf course complex will include an 8,000 to 10,000 square foot clubhouse, driving range, and practice putting green. Other facilities are expected to include an office, pro shop, restaurant with banquet facility, snack bar, and/or bar and lounge.

The remaining acreage at the project site will consist of rights-of-way and open space for flood control purposes.

Development of the Palmdale Business Park Center is anticipated to occur in 8 phases over a 25-year period. It is expected that market demand will have an effect on the sequence of project phasing. It is likely that completion of a given phase may overlap with the initiation of a subsequent phase. The phasing plan was developed in order to insure that infrastructure and roadways are constructed in accordance with the needs of businesses locating within Palmdale Business Park Center. Public infrastructure to serve a given tract will be completed prior to the occupancy of the tract.

Phase 1 of the proposed project will include the development of the 18-hole championship golf course and the 9-hole executive golf course covering a total of 225.76 acres. It will also include the construction of the golf course related facilities such as the clubhouse and driving range. It also includes two small open space parcels located in the northeast corner of the project site along

Avenue M. During Phase 2, 23.94 acres of community commercial land uses along Avenue M would be developed. A total of 13.51 acres of light industrial use along Loop Road West would also be developed during this phase. The third phase of the proposed project will include 9.39 acres of community commercial in the northwestern portion of the project site along Avenue M. It would also involve 43.32 acres of light industrial land uses in two parcels south of Avenue M.

Phase 4 of the proposed project involves 28.45 acres of community commercial uses along Avenue M between 6th Street East and Challenger Way. It also includes 16.81 acres of light industrial uses in the central portion of the project site. The fifth phase would involve 26.18 acres of business park uses in the central portion of the project site. Phase 6 of the proposed project would include two small parcels of open space totalling 5.95 acres along Avenue M in the northeast corner of the project site. This phase will also include 24.58 acres of light industrial land uses west of Loop Road East and 33.84 acres of airport-related land uses on the east side of Loop Road East. The seventh phase of the proposed project includes a 29.88-acre light industrial parcel and a 24.54-acre airport-related parcel. This phase will be located in the southeast portion of the project site. Phase 8 of the proposed project includes 38.85 acres of light industrial land uses and 30.55 acres of airport-related land uses in the far southeastern corner of the project site. It is assumed for analytical purposes that buildout of proposed project would occur in the year 2021.

The proposed project will result in the permanent loss of open space. Although this is consistent with development trends in the area and in the City of Palmdale General Plan, it is considered a significant land use impact and cannot be mitigated.

3.5.2.2 Consistency With City of Palmdale General Plan

The Palmdale Business Park Center Specific Plan is generally consistent with the land use goals that are contained in the City of Palmdale General Plan.

1. **Goal L1** - Create a vision for long-term growth and development in the City of Palmdale which provides for orderly functional patterns of land uses within urban areas, a unified and coherent urban form, and a high quality of life for its residents.

Some of the policies that are contained under this goal include the following:

- Direct future growth to areas that can accommodate development;
- Provide incentives for infill development;
- Discourage development proposals in areas separated from developed portions of the City;
- Designate land uses in consideration of topography, environmental constraints, availability of infrastructure and intensity of adjacent uses;
- Evaluate proposals with respect to impact on adjacent properties and require that project design employ appropriate techniques to increase compatibility between uses; and

- Designate land uses adjacent to airports which minimize conflicts with future expansion of airport operations.

The Palmdale Business Park Center Specific Plan is consistent with the City of Palmdale General Plan which designates the project site as Specific Plan 10. Development within this area is consistent with the goal to encourage growth within areas where land use patterns are established and where backbone infrastructure is readily available. The proximity of USAF Plant 42 to the project site will consolidate current development patterns and discourage urban sprawl within the City of Palmdale. The land uses proposed within the Specific Plan area are generally consistent with adjacent land uses to the south, east and west. In addition, the golf course and airport related uses on the southern end of the project site serve as a buffer with USAF Plant 42. To the north of the project site are mixed residential and industrial uses within the City of Lancaster and vacant land designated for industrial land uses within the City of Palmdale. These uses should be buffered by Avenue M as well as the siting of community commercial and open space uses in the northern portion of the project site. The proposed land uses within the Palmdale Business Park Center Specific Plan have been designed to be compatible with adjacent USAF Plant 42 and potential future land uses described within the policies of the Joint Land Use Committee.

2. **Goal L2** - Adopt land use and development policies which encourage growth and diversification of the City's economic base.

Some of the policies contained under this goal include:

- The establishment of incentives for new industrial development in Palmdale;
- The promotion of opportunities for transportation-related industries which utilize air, rail and highway facilities; and
- The consideration jobs/housing balance in evaluating new development proposals,

The proposed development within the Palmdale Business Park Center Specific Plan is expected to encourage growth and promote diversification of the City's economic base through a balanced mix of commercial and industrial development. The Airport Related, Light Industrial and Business Park uses of the proposed project will utilize highway, railway and air facilities for freight transfer and distribution. The proposed project is expected to create over 10,000 jobs at buildout which is consistent with the regional goal of improving jobs/housing balance.

3. **Goal L3** - Provide a high quality of life for all existing and future residents, meeting the needs of a variety of lifestyles.

No residential development is proposed as part of the Palmdale Business Park Center Specific Plan. The provision of numerous employment opportunities associated with the proposed project will serve the needs of future area residents.

4. **Goal L4** - Provide opportunities for a wide range of retail and service commercial uses, to serve neighborhood, community and regional needs and provide economic benefit to the City of Palmdale.

Some of the policies contained under Goal L4 include:

- Establish land use designations to meet the City's long-term commercial needs including office commercial, neighborhood commercial, community commercial and regional commercial;
- Encourage commercial development in nodes accessible from major streets and intersections rather than in long continuous strips;
- Avoid overdesignating commercial land uses, in order to maintain the value of existing commercial designations and avoid high vacancy rates; and
- Establish site specific siting criteria for commercial land uses as follows:
 - a. Select areas free from topographical variation;
 - b. Minimize conflicts with residential uses; and
 - c. Maintain a high level of visibility from public streets.

It is intended that commercial development within the Palmdale Business Park Center Specific Plan area be efficient, functional and attractive to users and to adjacent properties. This will be accomplished through the Specific Plan design guidelines. The commercial uses were sited along Avenue M and at the intersection of Challenger Way and Avenue M to promote ease of access and a high level of visibility. It also establishes a buffer with current land uses to the northwest and other land uses that are part of the specific plan.

5. **Goal L5** - Provide opportunities for a wide range of manufacturing and related industrial uses in the City of Palmdale, so as to facilitate expansion and diversification of the City's economic base and provide additional employment opportunities.

Relevant policies under Goal L5 include:

- Establish designations to meet the City's long-term industrial and manufacturing needs including:
 - a. Commercial manufacturing;
 - b. Business park;
 - c. Industrial;

- d. Airfield and related; and
 - e. Mineral resource extraction.
- Discourage encroachment of incompatible uses into or adjacent to designated industrial land;
 - Assure compatibility of industrial development with adjacent uses through adoption of development standards for industrial uses and the designation of areas of less intensive uses between heavy industrial uses and other business or residential designations; and
 - Encourage master planning within industrial areas.

The Palmdale Business Park Center Specific Plan provides for a wide range of manufacturing and industrial uses that will facilitate the expansion and diversification of the City's economic base. The Business Park land use will establish a variety of office, research and development, light assembly, fabrication and supportive commercial uses. These businesses will be located in master planned complexes with high quality design and construction standards. The Light Industrial land use will allow a variety of land uses including the manufacturing and assembly of products and goods, warehousing, distribution and similar uses. This land use will be separated from residential areas to the north by Avenue M and the proposed commercial zone. The airport and related land uses are located on the easternmost edge of the project site to take advantage of proximity to USAF Plant 42 and to provide a taxiway to existing runway facilities.

The Palmdale Business Park Center Specific Plan will be a master planned facility with regulations that will prohibit the encroachment of incompatible uses. The adopted Specific Plan is expected to meet the City's criteria and performance standards for noise, odors, emissions, vibrations, glare, radiation and other potential impacts of industrial development. The specific plan provides a comprehensive set of design guidelines that set standards for industrial uses in terms of location and screening of outdoor storage facilities, location of loading facilities and disposal areas, if any. The specific plan also addresses different intensities of land uses between the Business Park category and the Light Industrial and Airport Related categories.

6. **Goal L6** - Plan for and reserve to accommodate uses needed for public benefit, including open space, recreation, public improvements, schools and community facilities.

The Palmdale Business Park Center Specific Plan will include both open space and golf course uses which will be consistent with this goal.

7. **Goal L7** - Provide proactive comprehensive planning within designated areas of the City where unique development opportunities or physical conditions warrant special planning efforts.

The Palmdale Business Park Center Specific Plan has been developed in response to special planning considerations including proximity to USAF Plant 42, the need to implement the Palmdale Master Plan of Drainage and the preservation of Palmdale's desert oriented character.

3.5.3 Mitigation Measures

The project is consistent with commercial and industrial trends in the area as well as with the land use goals and policies of the City of Palmdale General plan. The development of the project would result in the permanent loss of open space and would not be mitigable. As a result no land use mitigation measures are recommended.

3.5.4 Impacts After Mitigations

The land use impacts of the proposed project would remain significant after the implementation of the recommended mitigation measures.

3.6 SOCIOECONOMICS

3.6.1 Existing Conditions

3.6.1.1 Employment

Los Angeles County and the Antelope Valley in particular have experienced rapid employment growth in the past decade. Total non-agricultural wage and salary employment in Los Angeles County increased from 3,610,300 jobs to 4,241,100 jobs between 1980 and 1990. This is an increase of 630,800 jobs or 17.5 percent during the 10-year period. This employment growth was fueled by various factors such as growth in the aerospace industry and a significant expansion in international trade through the Ports of Los Angeles and Long Beach. The recent cutbacks in defense spending as well as other events have resulted in the current serious recession in Southern California and Los Angeles in particular. Total employment within the County declined from 4,032,100 jobs in 1991 to 3,926,500 jobs in 1992. This represents a decline of 106,700 jobs or 2.7 percent in a 1-year period. Recent unemployment statistics show that the County unemployment rate was 9.1 percent in May 1993. The unemployment rate in Palmdale was 8.5 percent in May 1993. Economic analysts are predicting a very slow recovery from the current recession.

Total employment in North Los Angeles County Plan in 1990 was 71,771. By 2010 the North Los Angeles County projects that the Antelope Valley will have a total of 167,257 jobs (Subregion Plan 1993). This represents an increase of 95,486 jobs during the 20-year forecast period. According to the North Los Angeles County Plan the City of Palmdale had a total of 16,074 jobs in 1990. The total number of jobs within Palmdale is projected to increase to 61,353 by the year 2010.

3.6.1.2 Population

The City of Palmdale is located in the Antelope Valley in northern Los Angeles County. The population of Los Angeles County increased from 7,413,892 in 1980 to 8,863,173 in 1990 (see Table 3.6-1). This represents an increase of 1,389,331 people or 19 percent during the 10-year period. The population of the City of Palmdale increased from 12,277 in 1980 to 68,892 in 1990. This is an absolute increase of 56,565 or 461 percent during the 10-year period.

Table 3.6-1
POPULATION TRENDS IN LOS ANGELES COUNTY
AND CITY OF PALMDALE

Location	1980	1990	1993	CH. 80-1990	Percent Change
Los Angeles County	7,473,842	8,863,173	9,158,425	1,389,331	19
Palmdale	12,277	68,842	89,717	56,565	461

Source: California Department of Finance 1993.

Palmdale ranks as one of the fastest growing cities within the State of California. The population of Palmdale has continued to increase since the U.S. Census in 1990. According to the California

Department of Finance, the January 1, 1993 population of Palmdale was 89,717. The North Los Angeles County Subregion Plan projects that Palmdale's population will reach 264,905 by the year 2010. The Draft EIR for the City of Palmdale General Plan estimated that the buildout population for Palmdale could reach 441,000 at full buildout.

3.6.1.3 Housing

There has been a substantial amount of new housing construction in the Antelope Valley over the past 10 to 12 years. The relative affordability of housing in the area compared with the high housing prices in other parts of Los Angeles County has stimulated this increased housing activity. The total number of housing units in Los Angeles County increased from 2,857,100 in 1980 to 3,163,200 units in 1990 (see Table 3.6-2). This represents an increase of 306,100 units or 11 percent during the 10-year period. The total number of housing units in Palmdale increased from 4,982 in 1980 to 24,418 in 1990. Nearly 7,000 housing units have been added in Palmdale since 1990. This is an increase of 19,436 units or 390 percent during the period. This higher rate of housing construction compared to the county as a whole reflects the shift in housing production to more affordable areas within the county. The North Los Angeles County Subregion Plan projects that by the year 2010 there will be a total of 82,878 households within Palmdale.

Table 3.6-2
HOUSING TRENDS IN LOS ANGELES COUNTY
AND CITY OF PALMDALE

Location	1980	1990	1993	CH. 80-1990	Percent Change
Los Angeles County	2,857,100	3,163,200	3,206,500	306,100	11
Palmdale	4,982	24,418	31,400	19,436	390

Source: California Department of Finance 1993.

3.6.2 Project Impacts

Given the nature of the proposed project, it is likely to have the most direct impact on employment with indirect impacts in the areas of population and housing.

3.6.2.1 Employment

As mentioned in Section 3.5 (Land Use), a variety of land uses are planned within the Palmdale Business Park Center Specific Plan. A mix of different uses including community commercial, airport related, business park, light industrial, and golf course. Table 3.6-3 shows the projected employment generation for the project based on the specific plan development yield analysis. The project is likely to generate a total of over 10,000 jobs at buildout. The number of jobs was generated using employee per square foot of gross floor area for the Antelope Valley that were developed as part of the EIR for the proposed Palmdale Enterprise Zone. These ratios ranged from 250 square feet per employee for office user to 870 square feet per employee for airport-

related and light industrial land uses. Information from the project proponent was utilized in order to determine the employment that would be generated by the golf course.

Table 3.6-3
DEVELOPABLE BUILDING AREA AND EMPLOYMENT ANALYSIS

Land Use	Acres	Building Cover (%)	Gross Building Area (SF)	Employment
Community Commercial	61.42	24	642,109	2,335
Airport Related	87.92	45	1,723,408	1,981
Business Park	26.15	30	341,728	1,123
Light Industrial	165.61	35	2,524,890	4,628
Total (w/o Golf Course)	341.10		5,232,135	10,067
Golf Course Employment				43
TOTAL				10,110

A total of 61.42 acres of the project site would be utilized for community commercial development. This would allow the development of 642,109 square feet of gross building area and a total of 2,335 jobs (assuming a 50-50 split between office and retail uses). A total of 87.92 acres of airport-related land uses are included within the Palmdale Business Park Center Specific Plan. This would permit the construction of 1,723,408 square feet of building space (based on 45% building coverage) and would generate a total of 1,981 jobs.

Business park users would occupy 26.15 acres and would allow 341,728 square feet of building space (based on 30% building coverage). In order to estimate employment in this land use category it was assumed that 75 percent of the building space would be office and the remaining 25 percent industrial. Based on this assumption a total of 1,123 jobs would be created in the land use category. Light industrial land uses would occupy the largest percentage of the specific plan area (aside from the golf course). The 165.61 acres devoted to light industrial uses would allow the construction of 2,524,890 square feet of gross building area. It was assumed that 75 percent of the floor area would be industrial and the other 25 percent office. Based on these assumptions, a total of 4,628 jobs would be generated from light industrial land uses. The final land use category is for the 27 hole golf course that will be constructed as part of the proposed project. Golf course employment is expected to total 43 workers.

The employment generated by the proposed project will have a major impact on Palmdale and the Antelope Valley. The 10,110 expected to be generated at buildout represent 11.3 percent of the jobs projected by SCAG to be added within the City of Palmdale during the 1990-2010 period.

3.6.2.2 Population and Housing

The primary direct impact of the Palmdale Business Center Specific Plan will be for commercial and industrial development and to increase employment opportunities. Not all of the new jobs that

are created within the specific plan area likely to be filled by existing Palmdale residents. It is assumed that as much as 50 percent of new jobs would be filled by people who move into Palmdale. The other 50 percent of the jobs would be filled by existing Antelope Valley residents. Information from the California Department of Finance indicates that there was an average of 3.21 persons per household within the City of Palmdale. As a result every job that would be created by the proposed project would bring 1.6 new residents into Palmdale. Therefore the 10,110 jobs that would be created would result in an indirect population increase of as much as 16,176.

There would also be an indirect impact on housing demand as a result of the proposed project. The population increase (based on 3.21 persons per household and a vacancy rate of 11.2%) would require as much as 4,475 additional housing units within the City of Palmdale.

3.6.2.3 Job/Housing Balance

Job/housing balance is an issue of major concern in Southern California. Job creation has been fastest in central Los Angeles and Orange counties while most affordable housing is being constructed in northern Los Angeles County (i.e., Antelope Valley) and Riverside and San Bernardino counties. As a result workers are forced to drive long distances from their homes in outlying portions of the region to their jobs in Los Angeles and Orange counties. This imbalance between jobs and housing opportunities results in increasing traffic congestion and air pollution. A major goal of policymakers and business leaders is to increase employment opportunities in outlying areas such as the Antelope Valley in order to take advantage of the skilled and educated labor force that already lives there. This would in turn reduce traffic congestion and improve air quality.

In 1990 there were a total of 71,771 jobs and 75,725 households in North Los Angeles County. This translates into a job/housing balance ratio of 0.94. The area is therefore considered job poor and housing rich. The number of households is projected to increase faster than the number of jobs. As a result the job/housing balance ratio by the year 2010 is expected to drop to 0.87 (167,257/191,800).

The estimated 10,110 jobs that would be created by the proposed project would result in a substantial increase in employment opportunities within the Antelope Valley. At least half of the jobs would be filled by existing Antelope Valley residents. These workers would no longer be forced to commute into the Los Angeles Basin in order to seek employment. This would have a positive effect on job/housing balance in the area. The number of vehicle miles traveled would be reduced thereby reducing traffic congestion and improving air quality.

3.6.3 Mitigation Measures

The socioeconomic impacts of the proposed project would be beneficial. No significant adverse impacts to the socioeconomics of the area would occur. Therefore no mitigation measures are required.

3.6.4 Impacts After Mitigation

Socioeconomic impacts of the proposed project are beneficial.

3.7 TRANSPORTATION

A technical report on traffic was prepared by DKS Associates and can be found in Appendix F.

3.7.1 Existing Conditions

3.7.1.1 Local and Regional Access

East-West Roads

Avenue L is classified as a regional arterial within the project study area. It is discontinuous along its length, which extends from West of 70th Street West to the City of Palmdale limit line at 120th Street East. It has two lanes in each direction west of Sierra Highway and one lane in each direction east of Sierra Highway and carries less than 1,000 vehicles per day near Challenger Way.

Avenue M is classified as a regional arterial from 30th Street West to 50th Street East and as a major arterial extending from 90th Street West to east of the City of Palmdale limits at 120th Street East (improved only to 50th Street East). In the City of Lancaster's General Plan, Avenue M is classified as a major arterial. It has two lanes in each direction in the vicinity of the project, with one lane in each direction near SR-14 and carries about 8,000 vehicles per day east of Challenger Way and about 18,000 vehicles to the west. Between 6th Street West and 10th Street West, Avenue M has a two-way left-turn lane.

Avenue N is classified as a major arterial discontinuous along its length which extends from 70th Street West to Sierra Highway, and from about 2,000 feet west of 40th Street East to east of 110th Street East. It has one lane in each direction and carries about 3,000 vehicles per day in the vicinity of the project.

North-South Roads

State Route 14 is a six lane freeway in the vicinity of the project which runs from I-5 in the Los Angeles County to US-395 near the Kern County limits. This freeway carries between 50,000 and 60,000 vehicles per day in the vicinity of the project.

10th Street West is a major arterial extending from north of Avenue G in the City of Lancaster to Barrel Springs Road. South of Palmdale Boulevard, 10th Street West changes its name to Tierra Subida Avenue. It has one lane in each direction in the vicinity of the project and carries about 12,000 vehicles per day.

Sierra Highway is classified as a major arterial in the vicinity of the project and extends from the City of Mojave to the north in Kern County, through the City of Palmdale, and to the I-5/SR 14 interchange to the south. In the vicinity of the project Sierra Highway has two lanes in each direction and carries about 25,000 vehicles per day.

3rd Street East is an 40-foot-wide unpaved road which runs between Avenue L and Avenue M. Currently, this roadway carries less than 1,000 vehicles per day.

4th Street East is classified as a minor arterial and a 40-foot-wide road, with a pavement width of 25 feet, and runs between Avenue L and Avenue M. Currently, this roadway carries about 2,000 vehicles per day.

5th Street East is a 40-foot-wide unpaved road which runs from Avenue M to north of Avenue K. Currently, this roadway carries less than 1,000 vehicles per day.

6th Street East is a 40-foot-wide unpaved road which runs between Avenue L and Avenue M. Currently, this roadway carries less than 1,000 vehicles per day.

7th Street East is a 40-foot-wide unpaved road which runs between Avenue L and Avenue M. Currently, this roadway carries less than 1,000 vehicles per day.

10th Street East is a minor arterial discontinuous along its length which extends from north of Avenue K in the City of Lancaster to Avenue M, and from Avenue O-8 to Avenue S. It consists of one lane in each direction in the vicinity of the project and carries about 9,000 vehicles per day.

15th Street East currently serves as a driveway access into the existing US Air Force Plant 42 site. It is currently called Site 1 Road with restricted gated access into the existing property south of Avenue M. This segment of road carries about 4,000 vehicles per day.

20th Street East is classified as a major arterial in the vicinity of the project. It is discontinuous along its length which extends from north of Avenue K in the City of Lancaster to Avenue M, and from Avenue O-8 to Avenue S. It is classified as a minor arterial between Avenue O-8 and Avenue S. 20th Street East consists of one lane in each direction in the vicinity of the project and carries about 2,000 vehicles per day.

3.7.1.2 Study Intersections

This study analyzes eleven existing intersections and three future intersections. Seven out of the eleven existing study intersections are unsignalized. The study intersections were chosen by the City of Palmdale. The study intersections are as follows:

- Avenue L/Sierra Highway (Signalized)
- Avenue L/10th Street East (Unsignalized)
- Avenue M/SR 14 southbound ramps (Unsignalized)
- Avenue M/SR 14 northbound ramps (Unsignalized)
- Avenue M/10th Street West (Signalized)
- Avenue M/Sierra Highway (Signalized)
- Avenue M/4th Street East (Unsignalized)
- Avenue M/10th Street East (Unsignalized)
- Avenue M/20th Street East (Unsignalized)
- Avenue N/Sierra Highway (Unsignalized)
- Avenue M/4th Street West (Unsignalized)
- Avenue M/6th Street East (Future)
- Avenue M/13th Street East (Future)
- Avenue M/15th Street East (Future)

The intersections of 3rd Street East, 5th Street East, 6th Street East and 7th Street East along Avenue M are all currently unpaved and carry very little traffic. Therefore, these intersections were not analyzed for existing conditions.

The locations of the study intersections are shown in Figure 3.7-1.

3.7.1.2 Existing Intersection Levels of Service

In order to describe traffic performance at intersections the concept of level of service (LOS) is utilized. The LOS concept is a measure of operating conditions at intersections during a single peak hour. The service levels range from A through F. Service levels A, B, and C are considered acceptable operating conditions with only minor delays being experienced by motorists. LOS D conditions is the generally accepted standard for the planning and design of transportation facilities and is typical of urban peak hour conditions. LOS E is considered capacity operations and LOS F represents jammed conditions with excessive delays being experienced by motorists. Further details of level of service definitions for intersections are shown in Table 3.7-1.

Table 3.7-1
LEVEL OF SERVICE INTERPRETATION

LOS	Volume to Capacity Ratio	Description
A	0-.59	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	.60-.69	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.
C	.70-.79	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	.80-.89	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. <i>This level is typically associated with design practices for peak periods.</i>
E	.90-1.00	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.
F	Over 1.00	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.

Source: *Highway Capacity Manual, Highway Research Board, Special Report No. 87, Washington DC, 1965* and the update of the manual.

As directed by City staff, all intersection capacity analyses at the study intersections are based on the methods described in the Transportation Research Board's, *Interim Materials on Highway Capacity, Circular No. 212*.

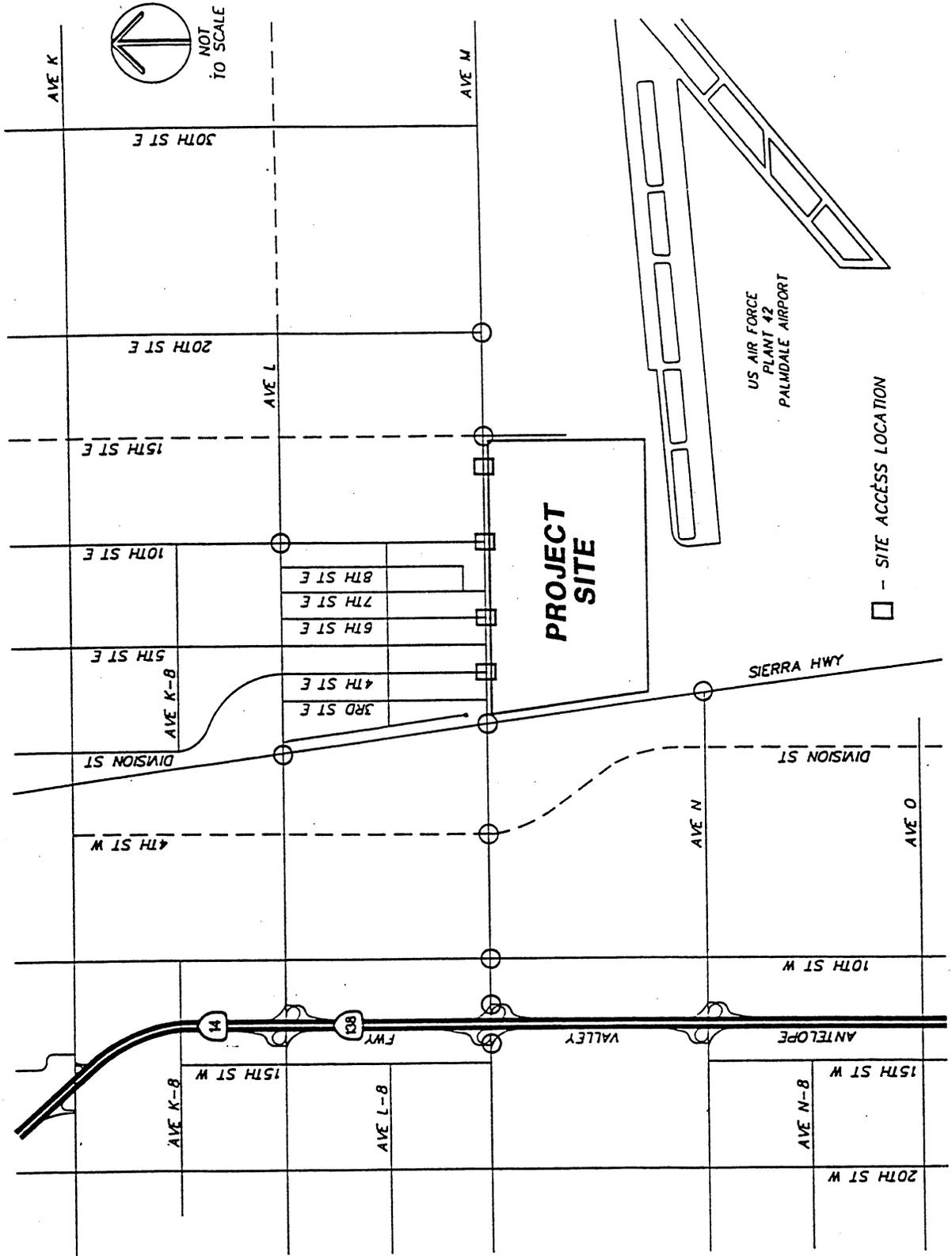


Figure 3.7-1: STUDY INTERSECTIONS

Source: DKS Associates, 1994

The level of service analysis was prepared for both the morning and evening peak hours. Existing traffic turning movement counts for the existing study intersections are shown in Figures 3.7-2 and 3.7-3 and are contained in the appendix to this report.

3.7.1.3 Existing Traffic Conditions

Currently, all the study intersections operate at LOS A during the morning peak hour. During the evening peak hour, all the study intersections operate at LOS B or better with the exception of Avenue M and 10th Street West which operates at LOS D. The existing levels of service are shown in Table 3.7-2.

Table 3.7-2
EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

Intersection	AM		PM	
	V/C	LOS	V/C	LOS
Avenue L / Sierra Highway	0.37	A	0.53	A
Avenue L / 10th Street East	0.27	A	0.32	A
Avenue M / SR-14 SB Ramps	0.37	A	0.38	A
Avenue M / SR-14 NB Ramps	0.37	A	0.57	A
Avenue M / 10th Street West	0.42	A	0.89	D
Avenue M / Sierra Highway	0.50	A	0.69	B
Avenue M / 4th Street East	0.35	A	0.38	A
Avenue M / 10th Street East	0.40	A	0.51	A
Avenue M / 20th Street East	0.15	A	0.17	A
Avenue N / Sierra Highway	0.37	A	0.57	A

A signal warrant analysis was performed for the unsignalized study intersections in order to assess whether these intersections should be converted to signalized operation. The analysis is based on the procedures in the California Department of Transportation (Caltrans) Traffic Manual. An unsignalized intersections must meet at least one of the warrants or 80% of two warrants in order to qualify for signal installation.

Based on the existing peak hour volumes, one intersection satisfies the signal warrant analysis for at least one peak hour. The intersection is Avenue M and SR 14 northbound ramps. This intersection has a large proportion of right-turning vehicles (about 20%, 10% to 15% is typical), however, and might not need a signal to operate acceptably. The signal warrant calculations are included in the Appendix to this report.

3.7.1.4 Existing Public Transit Services

Bus service within the City of Palmdale is provided through the Antelope Valley Transit Authority (AVTA), a joint powers agency whose members also include the City of Lancaster and Los Angeles County. Recently AVTA awarded the bus service contract to DAVE Transportation Services.

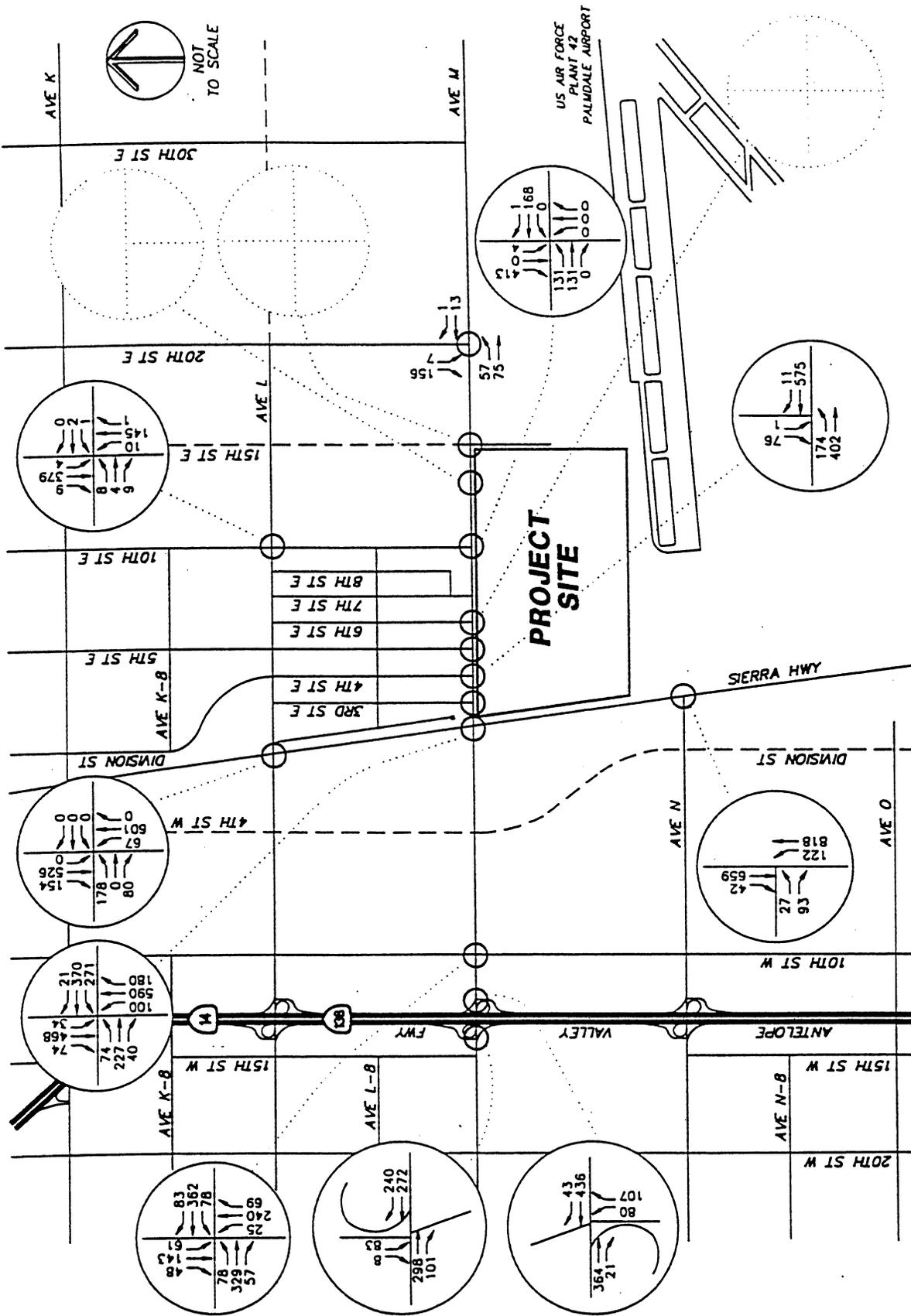


Figure 3.7-2: EXISTING A.M. PEAK HOUR VOLUMES

Source: DKS Associates, 1994

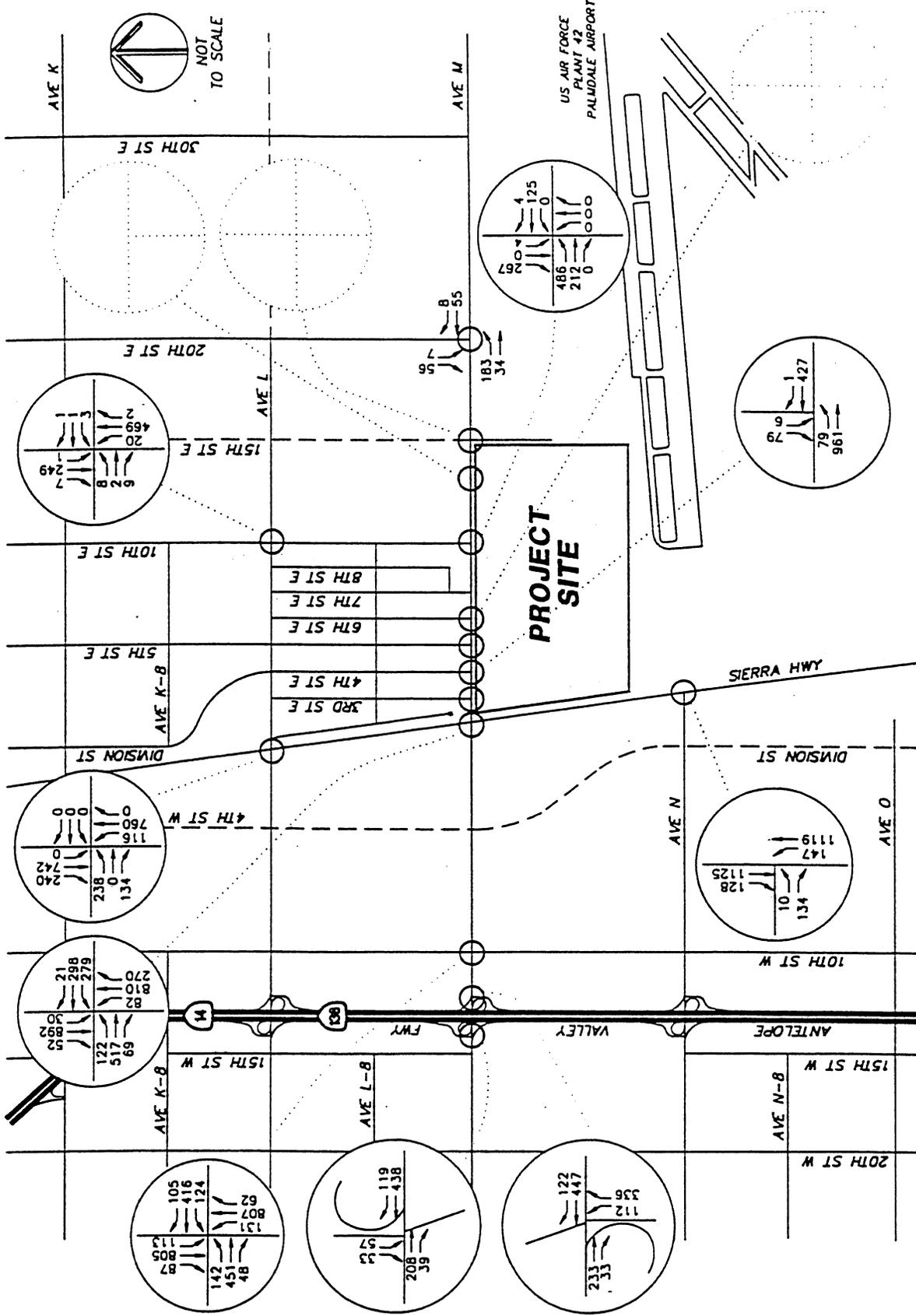


Figure 3.7-3: EXISTING P.M. PEAK HOUR VOLUMES

Source: DKS Associates, 1994

Weekday fixed-route service includes five lines, three of which operate in the vicinity of the project site. These routes are shown in Figure 3.7-4. The Orange Line operates north-south on 10th Street West, the Blue Line runs to the north along Avenue K, and the Red Line operates along Avenue L. Bus frequency is two bus trips per hour. Service hours on weekdays are from 5:30 a.m. to 8:00 p.m.

3.7.2 Project Impacts

3.7.2.1 Future Conditions (Buildout of Proposed Project)

This scenario considers traffic conditions at buildout of the project site. The project would consist of the following land uses: 61.42 acres of Community Commercial, 26.15 acres of Business Park, 87.92 acres of Airport Related (Warehouse), 165.61 acres of Light Industrial, and 225.76 acres for two golf courses.

At project completion (2021), the future number of lanes as indicated in the City's General Plan will be necessary for each study area roadway to accommodate projected traffic volumes (see Figure 3.7-5A). Additional lanes for left and right-turning vehicles will be needed at the intersections.

An early arterial progression analysis of Avenue M was performed to determine the impacts of the proposed signal spacing. The results of the signal progression analysis for Avenue M indicated that good progression can be maintained during the AM peak hour and fair progression during the PM peak hour at completion of Phase 8 (see Figures 3.7-5B and 3.7-5C). Several of the project intersections, however, are projected to operate over capacity, which would make achieving smooth progression difficult. The site configuration was subsequently changed to reduce the signalized intersection to four and received acceptance by city staff without additional progression analysis.

3.7.2.2 Future Conditions (Buildout of City General Plan)

This scenario considers traffic conditions at buildout of the City's General Plan (see Tables 3.7-3A through 3.7-3C). An Average Daily Trips (ADT) analysis was performed for this scenario. This is more appropriate than peak hour analysis due to the fact that the traffic volumes are projected much farther into the future (2021 vs. General Plan buildout). The development of ADT volumes requires fewer assumptions than the development of peak hour volumes.

In general, the Palmdale Business Park Center land use alternative would provide better arterial operations than the land use proposed under the City's General Plan. Five arterial segments would operate at LOS D or worse with the General Plan land use alternative. Three arterial segments would operate at LOS D or worse with the project land use alternative.

As stated earlier, Avenue M is ultimately planned at four lanes each way. Though the project fronts on Avenue M, between Sierra Highway and 15th Street East, it is not responsible for all the future traffic along this segment. The project, therefore, should only be responsible for the cost of widening Avenue M in direct proportion to the amount of traffic it contributes. The project contributes between seven and ten percent of the future traffic projected along Avenue M.

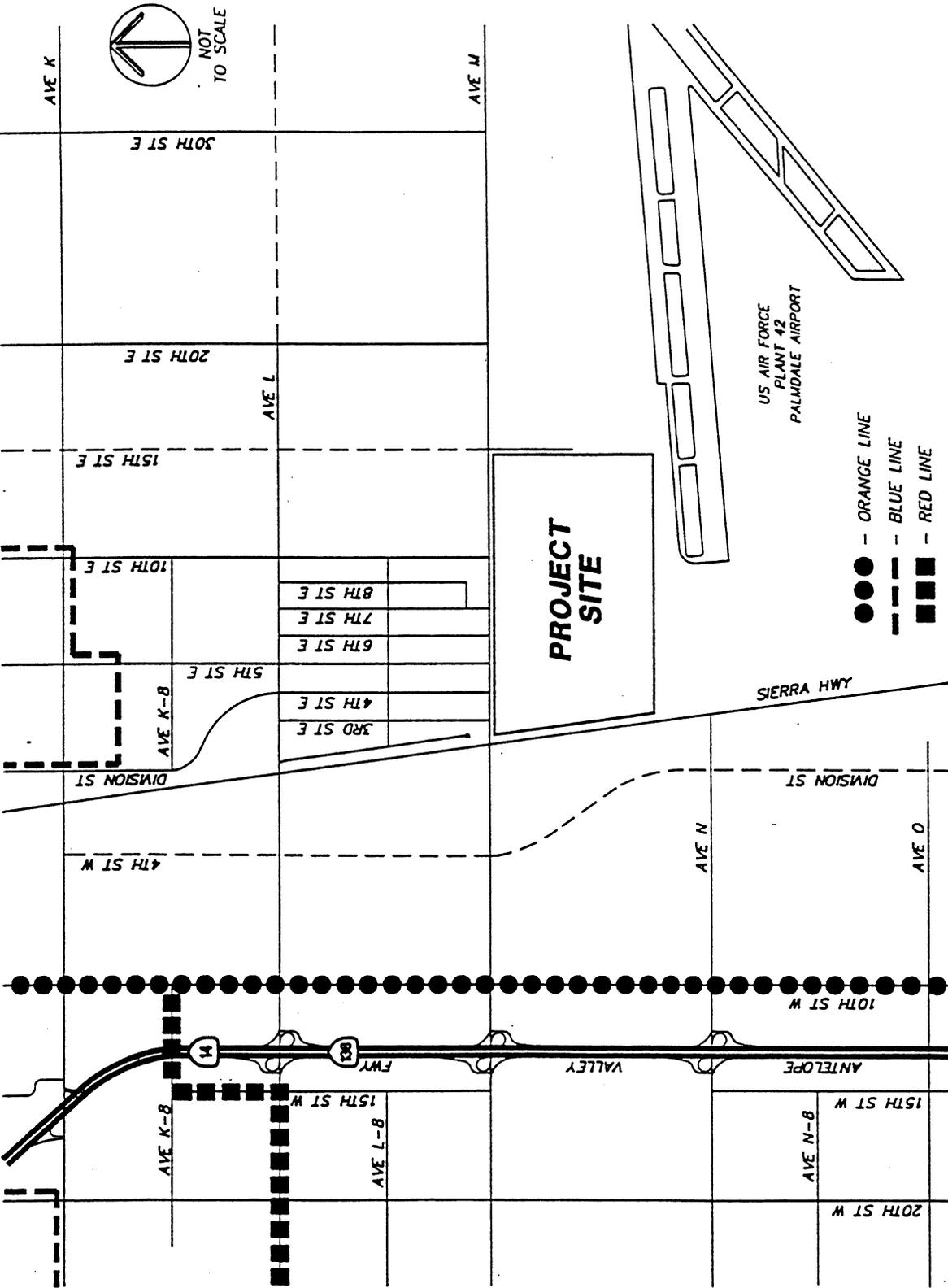


Figure 3.7-4: LOCAL BUS ROUTES

Source: DKS Associates, 1994

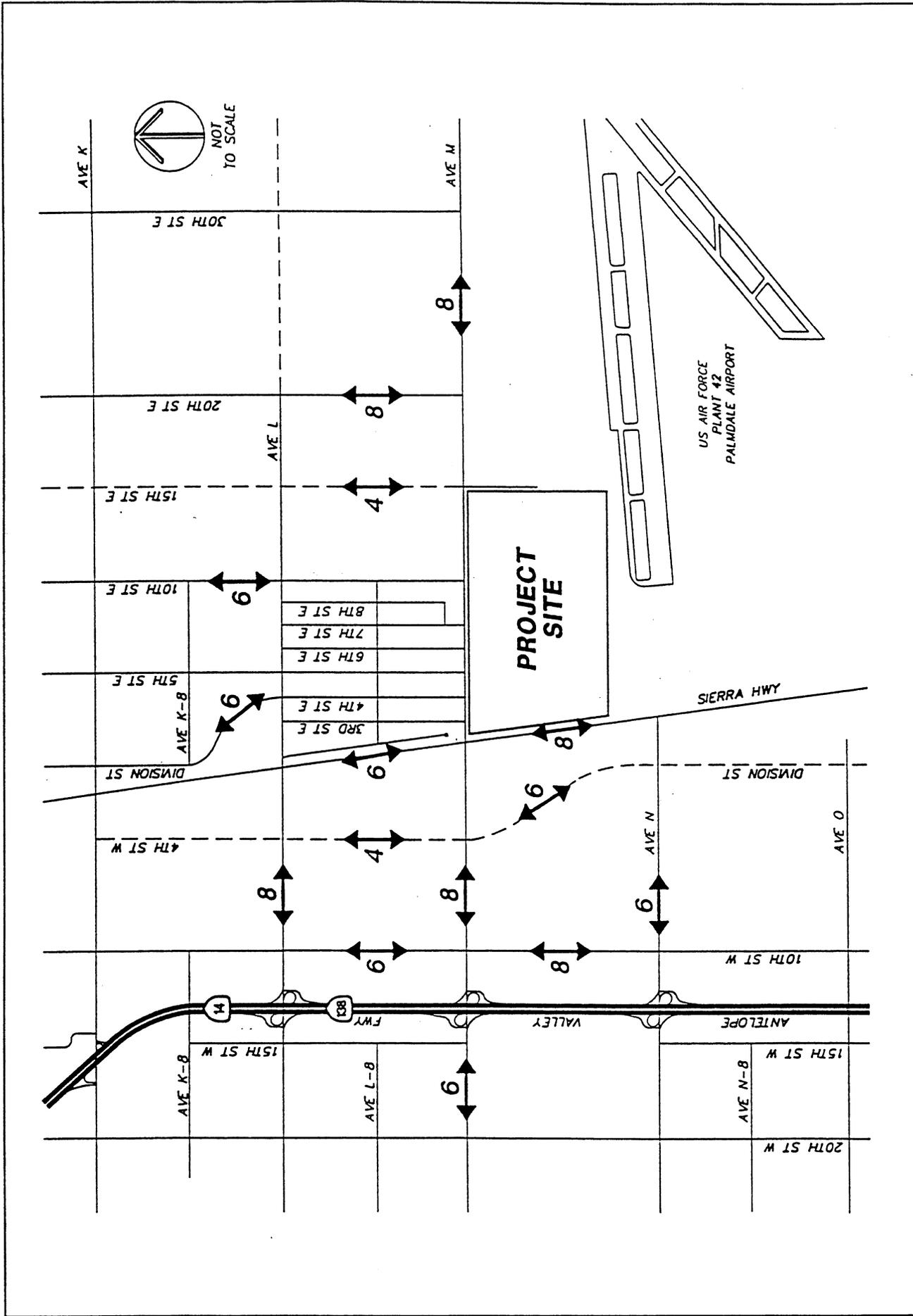


Figure 3.7-5A: ULTIMATE PLANNED NUMBER OF LANES

Source: DKS Associates, 1994

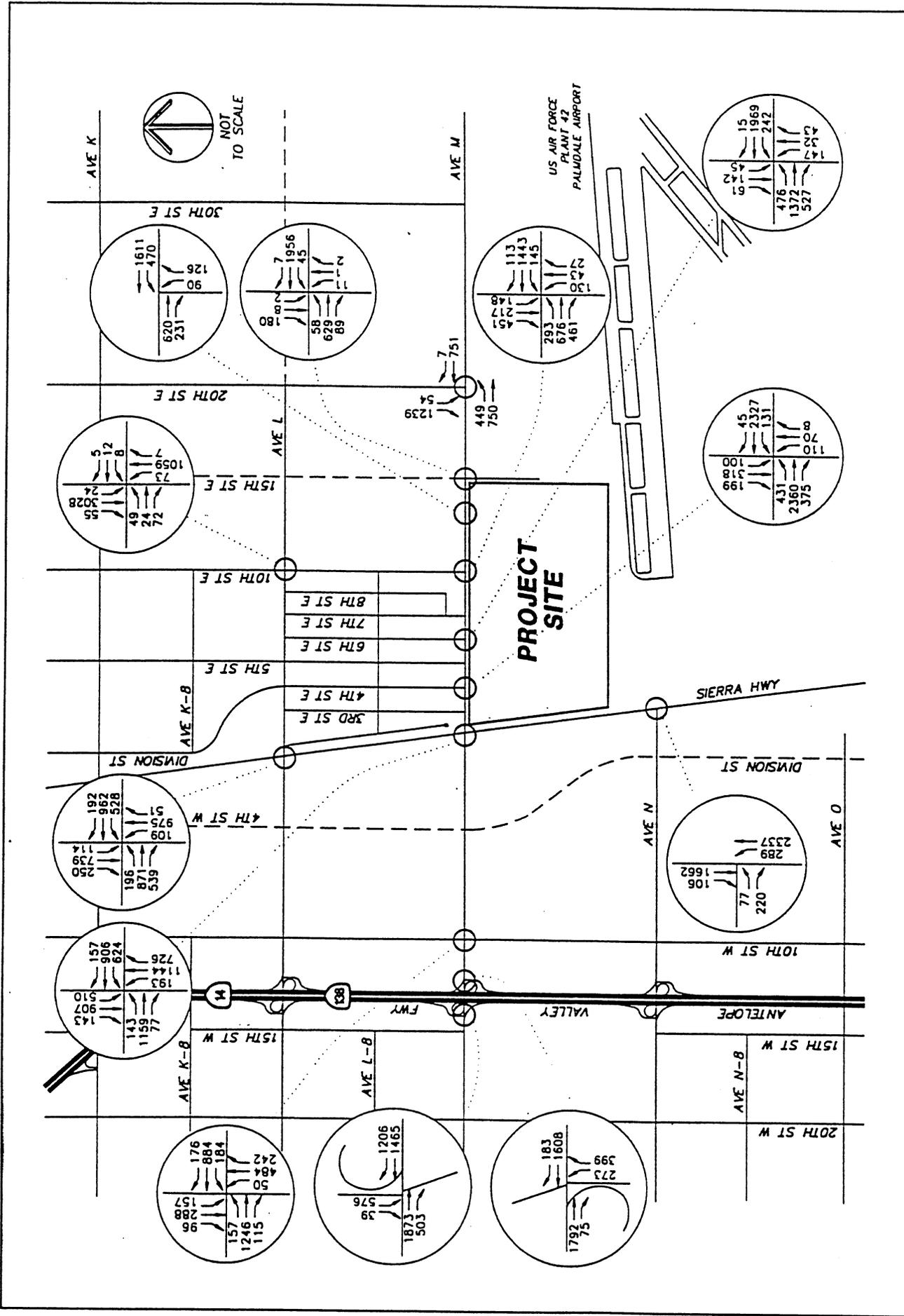


Figure 3.7-5B: A.M. PEAK HOUR VOLUMES PROJECT LAND USE
YEAR 2021 (PHASE 8)

Source: DKS Associates, 1994

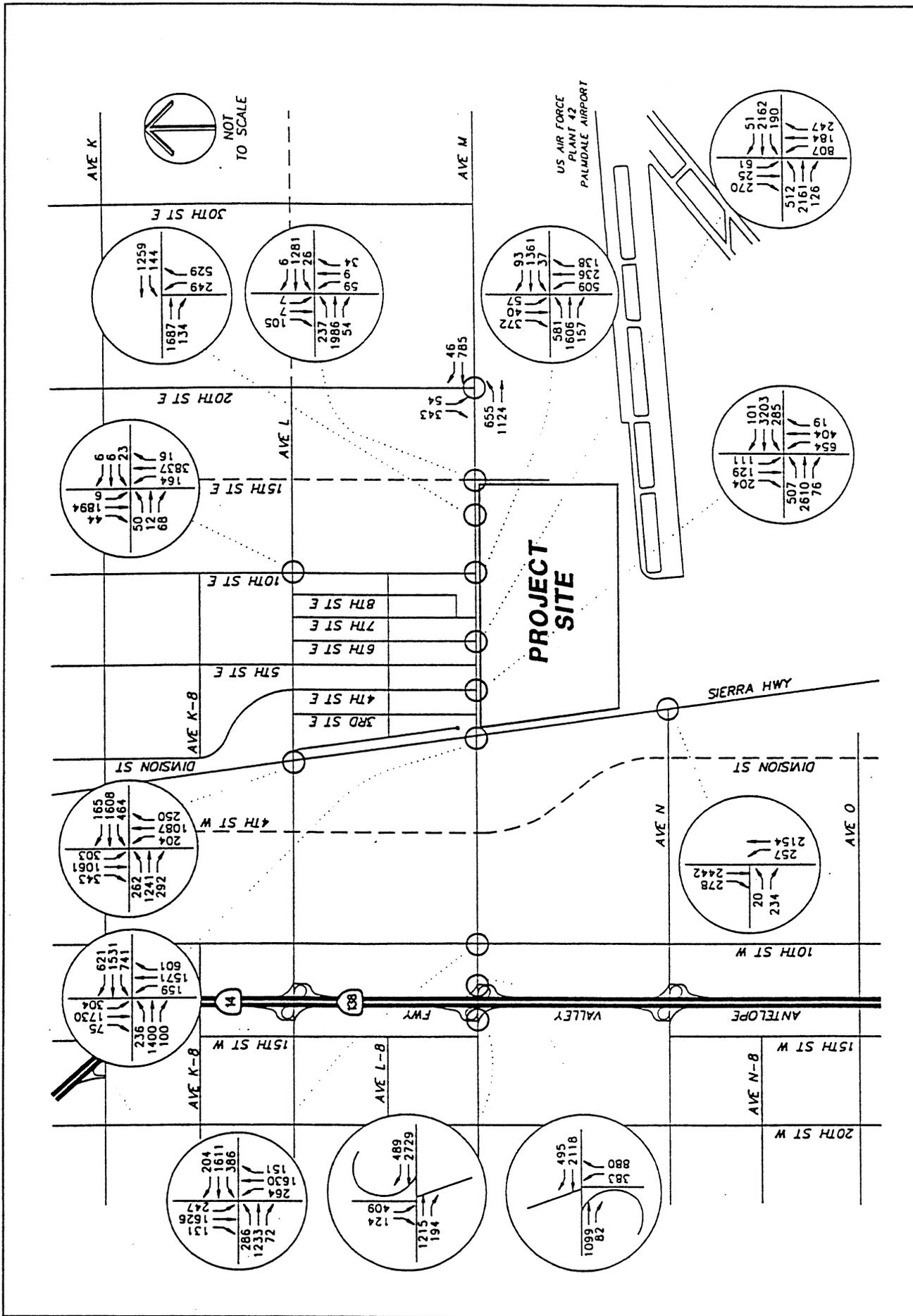


Figure 3.7-5C: P.M. PEAK HOUR VOLUMES PROJECT LAND USE YEAR 2021 (PHASE 8)

Source: DKS Associates, 1994

Table 3.7-3A
TRIPS GENERATED FOR PROJECT AREA - PALMDALE BUSINESS PARK CENTER LAND USE

Land Use	Unit Size		AM Trips		PM Trips		Trips
	Acres	KSF	In	Out	In	Out	
<u>Phase I (1996)</u> Golf Course	227.33	N/A	72	18	45	45	1,065
<u>Phase II (1997)</u> Community Comm-1	24.35	254.56	115	68	387	387	8,237
Light Ind-1	13.51	205.97	128	26	16	116	1,436
<u>Phase III (2001)</u> Community Comm-2	9.59	100.26	67	39	214	214	4,601
Light Ind-2	40.83	622.49	53	110	87	641	4,547
Light Ind-3	2.49	37.96	29	6	4	33	182
<u>Phase IV (2005)</u> Community Comm-3	29.05	303.70	128	75	433	433	9,198
Light Ind-4	16.81	256.29	178	36	24	179	1,812
<u>Phase V (2009)</u> Business Park-1	10.61	138.65	185	33	50	177	1,985
Business Park-2	15.57	203.47	267	47	69	246	2,873
<u>Phase VI (2013)</u> Light Ind-5	24.75	377.34	296	61	45	332	2,716
Light Ind-6	29.88	455.55	373	76	59	431	3,300
<u>Phase VII (2017)</u> Light Ind-7	38.85	592.31	507	104	82	603	4,321
<u>Phase VIII (2021)</u> Airport Related	89.19	1,750.26	538	209	325	604	6,784
TOTAL			3,421	909	1,841	4,440	53,058

Note: A pass-by credit of 35% was applied for all Community Commercial land use.

Table 3.7-3B
TRIPS GENERATED FOR PROJECT AREA - GENERAL PLAN LAND USE

Land Use	Unit Size		AM Trips		PM Trips		Trips
	Acres	KSF	In	Out	In	Out	
Business Park	200	2,613.60	3,211	567	685	2,429	34,516
Office	120	1,568.16	1,684	208	288	1,408	13,314
Commercial	30	392.04	198	116	591	591	13,992
TOTAL			5,093	891	1,564	4,428	61,822

Note: A pass-by credit of 35% was applied for all Community Commercial land use.

Table 3.7-3C
GENERAL PLAN BUILDOUT CONDITIONS
ADT LEVEL OF SERVICE ANALYSIS

Roadway	From/To	Geometrics	Facility Type	Capacity	GP Land Use			Palmdale BPC Land Use		
					Volume	V/C	LOS	Volume	V/C	LOS
Avenue L	SR-14/4th St. W	8 lanes	Reg Arterial	80,000	67,000	0.84	D	65,000	0.81	D
	4th St. W/Sierra Hwy.	8 lanes	Reg Arterial	80,000	65,000	0.81	D	61,000	0.76	C
	Sierra Hwy./5th St. E	8 lanes	Reg Arterial	80,000	62,000	0.78	C	58,000	0.73	C
	5th St. E/10th St. E	8 lanes	Reg Arterial	80,000	64,000	0.80	C	60,000	0.75	C
	10th St. E/15th St. E	8 lanes	Reg Arterial	80,000	50,000	0.63	B	52,000	0.65	B
	15th St. E/20th St. E	8 lanes	Reg Arterial	80,000	49,000	0.61	B	49,000	0.61	B
	20th St. E/30th St. E	8 lanes	Reg Arterial	80,000	45,000	0.56	A	47,000	0.59	A
Avenue M	SR-14/4th St. W	8 lanes	Major	72,000	53,000	0.74	C	52,000	0.72	C
	4th St. W/Sierra Hwy.	8 lanes	Major	72,000	51,000	0.71	C	48,000	0.67	B
	Sierra Hwy./5th St. E	8 lanes	Major	72,000	80,000	1.11	CF	72,000	1.00	F
	5th St. E/10th St. E	8 lanes	Major	72,000	60,000	0.83	D	54,000	0.75	C
	10th St. E/15th St. E	8 lanes	Major	72,000	45,000	0.63	B	41,000	0.57	A
	15th St. E/20th St. E	8 lanes	Major	72,000	41,000	0.57	A	38,000	0.53	A
	20th St. E/30th St. E	8 lanes	Major	72,000	47,000	0.65	B	44,000	0.61	B
Avenue N	SR-14/4th St. W	6 lanes	Major	54,000	22,000	0.41	A	22,000	0.41	A
	4th St. W/Sierra Hwy.	6 lanes	Major	54,000	26,000	0.48	A	26,000	0.48	A
10th St. W	Ave L/Ave M	8 lanes	Major	72,000	37,000	0.51	A	35,000	0.49	A
	Ave M/Ave N	8 lanes	Major	72,000	36,000	0.50	A	35,000	0.49	A
4th St. W	Ave L/Ave M	4 lanes	Minor	24,000	12,000	0.50	A	11,000	0.45	A
Division St.	Ave M/Ave N	6 lanes	Major	54,000	31,000	0.57	A	30,000	0.56	A
Sierra Hwy.	Ave K/Ave L	6 lanes	Major	54,000	21,000	0.39	A	19,000	0.35	A
	Ave L/Ave M	6 lanes	Major	54,000	24,000	0.44	A	23,000	0.43	A
	Ave M/Ave N	6 lanes	Major	54,000	48,000	0.89	D	47,000	0.87	D
	Ave N/Ave O	6 lanes	Major	54,000	39,000	0.72	C	38,000	0.70	B
5th St. E	Ave K/Ave L	6 lanes	Major	54,000	22,000	0.41	A	20,000	0.37	A
	Ave L/Ave M	6 lanes	Major	54,000	25,000	0.46	A	20,000	0.37	A
10th St. E	Ave K/Ave L	6 lanes	Major	54,000	27,000	0.50	A	26,000	0.48	A
	Ave L/Ave M	6 lanes	Major	54,000	14,000	0.26	A	13,000	0.24	A
15th St. E	Ave K/Ave L	4 lanes	Minor	24,000	4,000	0.17	A	4,000	0.17	A
	Ave L/Ave M	4 lanes	Minor	24,000	2,000	0.08	A	2,000	0.08	A
20th St. E	Ave K/Ave L	6 lanes	Major	54,000	15,000	0.28	A	14,000	0.26	A
	Ave L/Ave M	6 lanes	Major	54,000	10,000	0.19	A	9,000	0.17	A

Avenue M is currently a low-priority candidate for grade-separation. Funding potential is poor as determined from the relatively low number of road traffic/railroad conflicts. Even though the current probability of construction is low, project site adjustments will be provided which would allow for the future construction of an Avenue M grade separation.

3.7.2.3 Access by Other Modes

Three bus lines operate in the vicinity of the project site. The Orange Line operates north-south on 10th Street West, the Blue Line runs to the north along Avenue K, and the Red Line operates along Avenue L.

Based on a study by URS Consultants, this site can be expected to employ between 9,000 and 10,000 people. Consistent with the City's plans to utilize bus service as part of its comprehensive vehicle trip reduction strategy, the transit routes in the area should be expanded/modified to serve this site once it has a practical number of occupants. All bus stop facilities that are provided as part of the project should meet current City design standards.

The City has recently adopted a Citywide Bikeway Plan (see Figure 3.7-6). Arterials near the project site that are part of the Bikeway plan include Sierra Highway, 5th Street East, 15th Street East and Avenue L-8. Onsite circulation should be designed to accommodate and encourage bicycle use. This could be done by providing on-street bicycle lanes and secured off-street bicycle parking and storage areas.

3.7.3 Mitigation Measures

The following mitigation measure is recommended:

- #28 The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.

3.7.4 Impacts After Mitigations

The transportation impacts of the proposed project can be reduced to less than significant levels through the implementation of the recommended mitigation measure.

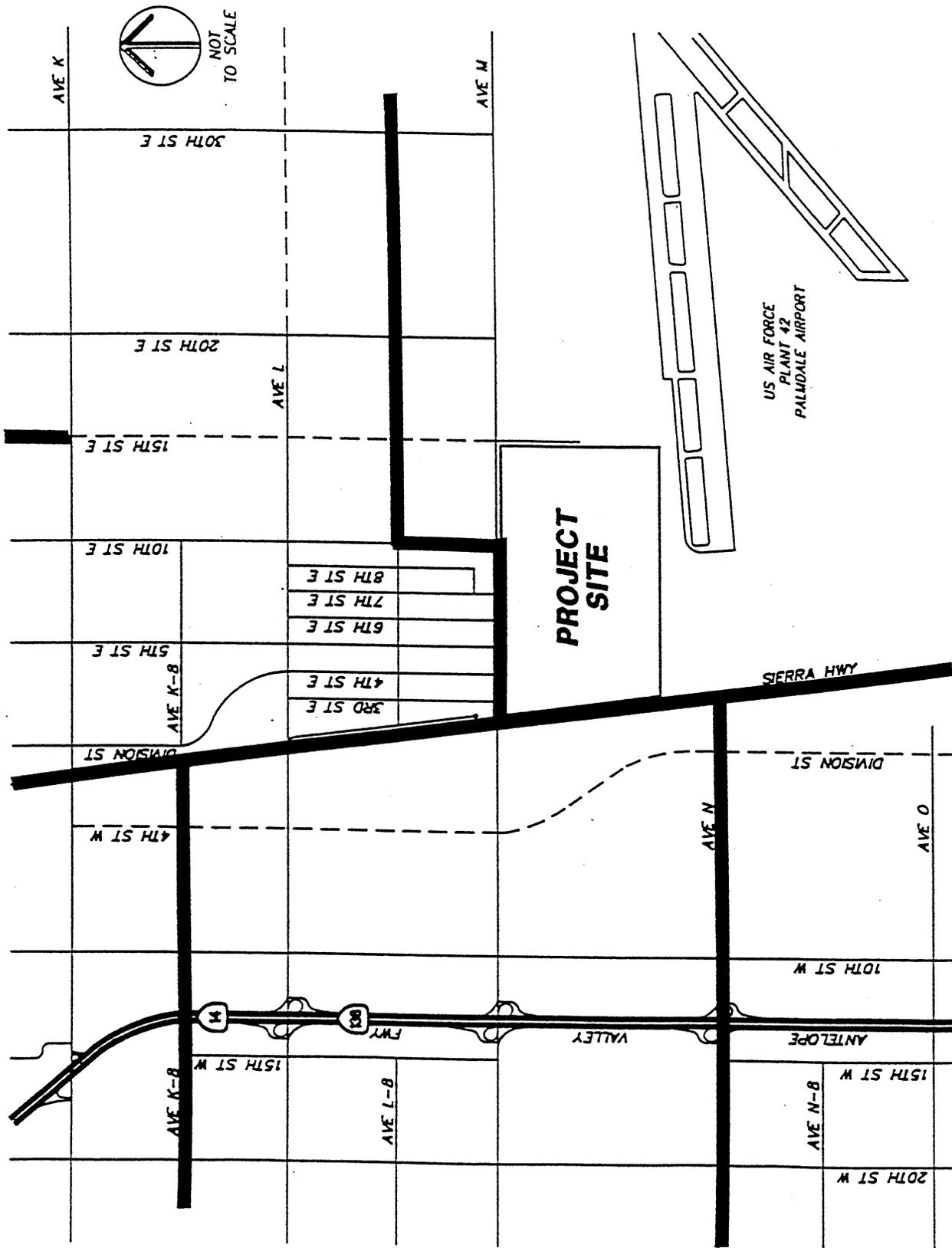


Figure 3.7-6: CITY OF PALMDALE BIKEWAY PLAN

Source: DKS Associates, 1994

3.8 PUBLIC SERVICES

This section discusses the public services provided within the city limits of Palmdale which would serve the proposed project. The public services reviewed in this section include fire protection, police protection, schools and parks. Each public service is discussed in a separate subsection along with a discussion of its baseline services provided.

3.8.1 Existing Conditions

3.8.1.1 Fire Protection

Fire protection for the City of Palmdale and the rest of the Antelope Valley is provided entirely by the Los Angeles County Fire Department (LACFD). There are two stations that are located within the City of Palmdale. One of the stations is on West Avenue P, while the other is at 38318 9th Street East. There are three other Los Angeles County fire stations in the surrounding area (two in Lancaster and one in Quartz Hill). Station 129 at 421 West Avenue M is located closest to the site of the proposed project (about three blocks from the project site). It will be the jurisdictional engine company for the proposed project. Air Force Plant 42 maintains its own fire station and equipment, and has a mutual aid agreement with the City. Fire station staff and equipment are summarized in Table 3.8-1.

Table 3.8-1
FIRE PROTECTION PERSONNEL AND EQUIPMENT

Firefighters	Firefighter	Patrol	Engine	Truck	Squad
<u>Stations in Palmdale</u>					
24: West Avenue P	7	2	1	1	0
37: 38318 9th Street East	5	0	1	0	1
<u>Other Stations</u>					
129: 421 West Avenue M Lancaster	5	0	1	0	0

Source: General Plan Draft EIR, City of Palmdale, August 1992.

Since there is no standard minimum response time after dispatch has been made, all response time depend on many factors, such as land use and seriousness of incident. There is no standard fire prevention officer per population ratio although LACFD does prefer to maintain four-man engine capacity in all their units.

Palmdale is also part of the Consolidated Fire Protection District. The District is part of the Los Angeles County Fire Department which serves 49 cities, as well as unincorporated areas of the county. Its main purpose is to provide back-up services for cities and other county areas under emergency fire conditions. As part of a regional district the fire stations in Palmdale and vicinity are backed up by the manpower and resources of the County Fire Department. It means that the

fire protection needs of the proposed project can be met by the entire department's resources, if needed, regardless of the number of firefighters and equipment stationed in the Palmdale area.

Staff from the individual fire stations conduct onsite inspections of new construction, as well as annual inspection of existing situations to ensure compliance with the fire code. In addition, the fire protection office conducts information programs for the community in fire awareness and protection.

To ensure that fireflow requirements are met and standards for fire safety construction are observed, the County Fire Prevention Bureau is responsible for the review and inspection of development projects in the area. Based on the 1990 LACFD Standards, the fire flow requirements for commercial/industrial uses is up to 5,000 gallons per minute (gpm) for 5 hours (90 MG total).

3.8.1.2 Police/Law Enforcement

Police protection within the City of Palmdale is provided by the Los Angeles County Sheriff Department. The California Highway Patrol (CHP) provides traffic enforcement services in the surrounding unincorporated areas. Together, they back-up each other in the event of an emergency.

There are two Sheriff's stations serving the Antelope Valley, one at 1010 West Avenue I in Lancaster, and the other at 1020 East Palmdale Boulevard in Palmdale. Together, they are referred to as the Antelope Valley Station. The police force to the City of Palmdale, served by the Palmdale Station, consists of 74 full-time staff members. Of these, 65 are sworn peace officers.

The Los Angeles County Sheriff Department's services include crime analysis, traffic control, crime teams, SWAT teams, narcotics enforcement, airport security, gang suppression, an identification bureau, search and rescue, mounted posse patrol, bicycle patrol, and air support. The City of Palmdale does not contract for air surveillance at this time. The Sheriff's Department operates a crime prevention program including presentations on existing laws and crime prevention in schools and businesses, as well as a neighborhood watch program. Police-to-population ratios are an indication of how many law enforcement officers there are to service a given population. The Palmdale station's current police officer to civilian ratio of 1:1,000 is considered adequate to meet the needs of the City. This ratio is lower than the Los Angeles County Sheriff Department's current regional service ratio of 1:1,160.

In 1992, the Antelope Valley station responded to 89,827 calls. The average response time last year for emergency calls was 8.07 minutes, with routine response time ranging from 8.70 minutes to 50.5 minutes. Response time depends on traffic and circulation, distance from the site of the call, and the availability of officers.

There are currently no jails or holding facilities in the Palmdale station. The Sheriff's Department uses the facilities located in the Lancaster station and downtown Los Angeles for both jails and courts.

3.8.1.3 Schools

The site of the proposed project lies within the Lancaster School District. The Eastside Union School District is located to the north and east of the project site. The project site is also within the jurisdiction of Antelope Valley Union High School District and the Antelope Valley Community College District.

Elementary education in the vicinity of the proposed project is provided by the Keppel Union, Lancaster, Palmdale, and the Westside Union school districts. Information on current and projected student enrollment were obtained from the five school districts closest to the project site. The total student enrollment for the Lancaster School District in the 1993-1994 school year was 12,540. This represents an approximate 1.5 percent increase from 1992-1993. This is a decline from the 3 percent annual growth rates that were experienced by the District during the 1990-1992 period. The school district has projected that total enrollment will reach 14,835 in the 1999-2000 school year and 19,619 in the 2009-2010 school year. Enrollment growth in the Palmdale School District has also slowed considerably from the rapid increase in the early 1990s. Ending enrollment for the District during the 1993-1994 school year was 16,386. This represents an increase of 830 students from the end of the 1992-1993 school year. This compares to an enrollment increase of 1,200 students per year in the beginning of the 1990s.

The Eastside Union School District had a total 1993-1994 student enrollment of 2,171. This represents a 3.2 percent increase from the previous year. This is a significant slowdown from the 13 percent growth experienced the year before. The District has projected that student enrollment could reach 3,174 by the 1998-1999 school year. The school district is very overcrowded with a total of 52 portable classrooms currently in use. The Keppel Union School District has a total student enrollment of 3,051 during the 1993-1994 school year. This is a decline in enrollment levels from the 1991-1992 and 1992-1993 school years. The District projects that total student enrollment will reach 3,253 during the 1996-1997 school year. Secondary education within Palmdale is provided by the Antelope Valley Union High School District, with higher education being provided by the Antelope Valley Community College District.

In general these school districts are operating above capacity levels and are therefore adversely impacted under existing conditions. When combined with limited state funds for new school construction, this has necessitated adoption of districtwide year-round school schedules. To meet the large demand for additional classroom space, the school districts are making use of portable or temporary facilities. The State Board of Education has no state-mandated or optimum teacher-student ratio. The current teacher-student ratios vary from 1:23 to 1:32. For most districts this is above the preferred ratio of 1:25.

3.8.1.4 Recreation and Parks

The project site and surrounding area offers a wide variety of recreational opportunities. The mountain areas of the Angeles National Forest located south and east of the proposed project offers major recreational facilities that include lake and manmade reservoirs, pine forest, and land formations.

Park facilities and recreational programs are provided by the City of Palmdale parks and Recreation Department. The City's stated goal in the General Plan is to achieve the National Recreation and Parks association standard of 5 acres of parkland per 1,000 population.

Currently developed local public park facilities citywide provide only 3.75 acres per 1,000 persons. This is less than the ideal ratio and indicates the need for the development of additional parks. There are currently 88.64 acres of developed parks in the City of Palmdale with another 353.60 acres in the planning stages.

The City of Palmdale has three park classifications. The community park is generally larger than 15 acres and has a service ratio of up to 5 miles. A neighborhood park is intended to be within 2.5 miles and is generally 2.5 to 15 acres in size. Finally, a special use park is developed to accommodate a specific activity range of activities.

3.8.2 Project Impacts

3.8.2.1 Fire Protection

The proposed project would impact the Los Angeles County Fire Department by increasing the number of fire prevention, suppression, and medical emergency responses to the site.

It is not possible to determine the exact increase in fire department responses to the project during the construction phase and over the lifetime of the project. The completion of the proposed project would result in increased fire department responses to the area.

The project appears to be adequately served by the fire stations and number of firefighters located near the project. The Los Angeles County Fire Department station on Avenue M is located very close to the project and should be able to respond to emergencies at the project site within an adequate response time.

The project-related number of households locating in the Antelope Valley is expected to increase the population by approximately 16,176 (see Section 3.6).

The population increase associated with the project is small enough and distributed throughout the Antelope Valley such that it should not adversely impact the capabilities of the Los Angeles County Fire Department.

The impacts of the proposed project on fire protection within the City of Palmdale are significant but mitigable to a non-significant level if the mitigation measures recommended in Section 3.8.3.1 are applied.

3.8.2.2 Law Enforcement

The development of the Palmdale Business Park Center Specific Plan will impact the Sheriff Department's ability to provide law enforcement and police protection. The impacts to the Department would occur through increased commercial and industrial land uses, the golf course, and associated secondary population growth. Development within the specific plan area would

generate increased traffic accidents and crime incidents such as burglaries. This would result in a higher frequency of police calls. Industrial development associated with the proposed project would generate truck traffic and its related hazards, which would also increase the need for police services.

The indirect population increase associated with the proposed project would result in an increased need for police protection staff. At buildout of the proposed project in the year 2021, a population increase of over 16,000 residents is expected. This would require 16 additional police officers at the ratio of one officer per 1,000 population. This would necessitate other support staff in order to ensure that proper law enforcement standards and response times are maintained.

3.8.2.3 Schools

The impacts upon the ability of the surrounding school districts to provide educational services stems from two basic sources: (1) student generation as a result of population/job growth and (2) the amount of funding for education appropriated by the school districts. The school districts are currently faced with the problems of overcrowding and underfunding. The situation would be exacerbated by increases in population that would be associated with jobs created in the specific plan area. It is estimated that at buildout of the proposed project in the year 2021, a total of 10,110 jobs would be generated which would result in a population increase of 16,176.

It is also estimated that this secondary population increase would occupy approximately 4,475 dwelling units. For planning purposes, an average student generation factor of 0.44 and 0.20 for elementary and high school students is used, respectively (Michael Brandman Associates, 1992). This results in an increase of the elementary and high school population of 1,969 and 895 students, respectively. If the average elementary and high school capacity is 750 and 2,400 students, respectively, three additional elementary schools and one additional high school would be needed by the year 2021.

The increased indirect demand upon educational services would have a significant impact on the school districts. The responsibility for mitigation of these indirect impacts would be with the residential development resulting from this indirect population increase.

3.8.2.4 Recreation and Parks

The secondary population increase associated with the proposed project would require the development of additional parks and recreational facilities. The Palmdale Business Park Center Specific Plan would increase the population within the City of Palmdale by 16,176. In order to maintain the National Recreation and Parks Administration standard of 5 acres of parkland per 1,000 persons, the population increase resulting from the proposed project would require an additional 82 acres of parkland. It is difficult to determine the significance of this impact because the population would actually be spread throughout the City. Since parkland dedication fees are not required for commercial and industrial land uses, all fees collected would be through residential development resulting from the population attributable to the proposed project. In the past, fees levied on residential construction have generally mitigated the impacts to park development. The proposed project will include an 18-hole championship golf and a 9-hole executive golf course.

This would contribute toward recreational opportunities in the City of Palmdale. It is judged that the levied fees would reduce impacts due to the proposed project to a nonsignificant level.

3.8.3 Mitigation Measures

3.8.3.1 Fire Protection

The following measures would mitigate the impact on fire protection services resulting from the proposed project:

- #29 Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.

3.8.3.2 Police/Law Enforcement

In order to mitigate impacts to police protection from the proposed project, the following measures are recommended to be implemented:

- #30 Ensure that landscaping and other barriers around buildings do not obstruct views required to provide security surveillance.
- #31 Require adequate lighting of buildings and parking facilities during time of darkness in order to facilitate security surveillance.
- #32 Require the use of physical security measures, i.e., CCTV, card access, burglar alarms, as well as other electronic security measures as necessary to provide adequate security of the site and security for persons and property at the site.

3.8.3.3 Schools

- #33 The project proponent shall mitigate school impacts to the extent and as authorized by State law as applicable to commercial and industrial projects, as required by the involved school districts.

3.8.3.4 Recreation and Parks

No specific mitigation measures are recommended.

3.8.4 Impacts After Mitigations

The public service impacts of the proposed project can be reduced to less than significant levels by the implementation of the recommended mitigation measures.

3.9 PUBLIC UTILITIES

This section discusses the public utilities provided within the current city limits of Palmdale which would serve the proposed project. The utilities include water, wastewater, solid waste, electricity, natural gas, telephone service, and cable television. Site drainage and flood control are discussed in Section 3.3. Each public utility service is discussed under a separate section. Each individual section discusses the baseline services provided, the impacts which the proposed project would have on those services, and mitigation measures which would address these impacts.

3.9.1 Existing Conditions

3.9.1.1 Water Production and Distribution

Water service to the project site is provided by the Los Angeles County Water Works District #40 (LACWWD #40). The service area includes the northwest portions of the City, including Lancaster. Water is brought from the Antelope Valley-East Kern Water Agency (AVEK), the local wholesaler of State Water Project, and is pumped from an extensive system of groundwater wells, of which it has 28. Approximately 46 percent of LACWWD #40 water was groundwater and the remaining 54 percent comes from the State Water Project.

The project site is located within the LACWWD #40 2696 pressure zone. Presently the existing facilities in pressure zone 2696 do not have the necessary capacity or storage to serve the project site. Except for a small concrete pad and cleared area in the vicinity of Avenue M-8 and Challenger Way, the site is devoid of signs of past usage and is essentially in a native state. Therefore, the existing water use and demand on the District supply by the project site is zero.

The LACWWD #40 has a 7 acre reservoir site within the north side of the project site along Avenue M between 5th Street East and 6th Street East. On this parcel the District currently maintains 3 of the 12 reservoirs proposed to be operational on the site. These water storage tanks are designed to serve the District's 2555 pressure zone.

The source of water for this existing reservoir site is a metered turnout at the easterly terminus of the 30-inch AVEK South Feeder transmission main located at the northwest corner of the reservoir site. This existing 30-inch AVEK transmission line continues westerly in Avenue M to Sierra Highway and then turns and runs southerly along Sierra Highway.

Other existing LACWWD #40 facilities in the vicinity of the site include a low pressure 48-inch transmission main in Avenue M, easterly of the existing reservoir site which then turns and runs northerly in Challenger Way and continues into the City of Lancaster. The 48-inch transmission main provides service to the 2555 zone.

3.9.1.2 Wastewater Collection and Treatment

Trunk sewer lines and wastewater treatment facilities proposed to service the project site are owned and operated by the Los Angeles County Sanitation District No. 14 (LACSD No. 14). Since the project site is located outside of the current LACSD No. 14 boundary, it will have to be annexed

into the district to receive wastewater service. The City of Palmdale is responsible for the sewer collection and transmission system apart from and upstream of the County's trunk sewer system.

Wastewater generated by the project site will be treated at the Lancaster Water Reclamation Plant (LWRP), located north of the project area at 20th Street West and Avenue D between Sierra Highway and Antelope Valley Freeway. LWRP serves Quartz Hill, Lancaster and portions of Palmdale. LWRP has a rated capacity of 10 million gallons per day (MGD) for primary and secondary treatment, and currently treats 8.2 MGD as of June 1992. LACSD No. 14 currently has plans to expand the facility to a capacity of 16 MGD by the end of 1994. The treatment plant processes the effluent using surface aeration.

Neither the LACSD No. 14 nor the City of Palmdale has trunk or collection and transmission lines, respectively, adjacent to the project site. Wastewater disposal in the immediate area is provided by individual septic systems. Presently, there is no sewage generated from the project site. Although the Amargosa Creek Trunk Sewer, located on Division Street and west of the project site, is closest to the site, the existing trunk sewer line along Challenger Way at Avenue K in the City of Lancaster would serve the project site.

3.9.1.3 Solid Waste Generation and Management

Solid waste generated within the City of Palmdale is collected and transported by six disposal companies. The primary disposal area is currently the privately-owned Antelope Valley Public Dump, located at the southwest intersection of Tierra Subida Avenue and City Ranch Road. This Class III landfill site, operated by Palmdale Disposal Company, accepts residential, commercial and industrial solid waste from surrounding areas in the Antelope Valley. The present site has a remaining permitted disposal capacity of 6 years (1,700,000 tons) and is expected to reach capacity in 1999. In 1990 123,725 tons of solid waste were disposed of at the Antelope Valley Public Dump.

Palmdale Disposal Company currently has exclusive rights to all residential solid waste generated within the City, but not solid wastes produced from commercial and industrial uses. However, the City is in the process of negotiating with Palmdale Disposal Company for exclusive rights to collect all solid waste generated from commercial and industrial uses within City of Palmdale limits.

A conditional use permit was recently approved by Los Angeles County allowing the Antelope Valley Public Dump to expand to an adjacent 75-acre lot. The expansion site will provide an additional capacity of approximately 2.74 million tons of solid waste.

The project site is currently vacant and thus generates no amount of solid waste.

3.9.1.4 Electricity

Electrical service to the project area is provided by Southern California Edison Company (SCE). Existing facilities adjacent to the site consist of a 12 KV and a 66 KV overhead system located on the north side of Avenue M and a 12 KV overhead system on the west side of Sierra Highway.

3.9.1.5 Natural Gas

Natural gas service in the project area is provided by The Gas Company. To ensure adequate service, an on-site system of gas lines will be connected to the existing 6-inch high pressure main and 4-inch mains along Avenue M and Sierra Highway, respectively.

3.9.1.6 Telephone

Telephone service in the project area is provided by Pacific Bell. Currently there is no telephone service to the project site. However, there are existing telephone lines at Sierra Highway and Avenue M-8 that may be connected to the project site in the future.

3.9.1.7 Cable Television

Cable television in the project area is provided by Jones Intercable. There is currently no cable service in the vicinity of the project site.

3.9.2 Project Impacts

3.9.2.1 Water Production and Distribution

Water demand would rise significantly due to the projected population increase resulting from the development of the project site. Generation rates for water demand based on per capita or land unit area are not available from LACWWD #40. To estimate the project related water demand the development is assumed to be consistent to 4 equivalent dwelling units (EDU) per acre as identified in the Specific Plan. Project water use is based on 1,500 gallons per day (gpd) for maximum day demand and 1,250 gallons of storage per EDU for 344 acres. It is anticipated that maximum water consumption (peak daily demand) would increase by 2.0 MGD at buildout at 2021.

In addition to the direct demands on the City's water supply system due to implementation of the project, there will be secondary demands. These secondary demands will be due to the increase in population associated with the project as discussed in Section 3.6.2. Using the maximum daily household water demand of 1500 gpd per EDU, and an expected housing and population increase of 4,475 homes and 16,176 residents, respectively, the secondary demand on the water system would be 6.6 MGD. The total annual maximum daily demand on the County's water supply due to direct and secondary impacts is expected to be 8.6 MGD, respectively.

Fire flow requirements for the project site will depend on such variables as building use and height construction type, use of sprinklers, etc. Storage capacity requirements are based on the sum of the fire flow and the peak daily demand. As identified in the Specific Plan, a storage demand of 1,250 gallons per EDU will require a maximum daily demand of 1.7 million gallons (MG) of peak and fire flow storage.

By implementing this Specific Plan, the City will realize a total peak daily demand of 8.6 MGD at an additional demand its water system. Compared to the current (1993) annual water use in the City from LACWWD #40 of 30,000 acre-ft/year, this represents a 32 percent increase in demand. The increased water use will be partially offset by the project proponent plans to construct two new

walls at the project site to supply the maximum demand of 780 acre-ft/year for golf course irrigation. The impact on the District's water supply is considered to be significant.

3.9.2.2 Wastewater Collection and Treatment

Based on the LACSD No. 14's loading factors of 0.006 cubic feet per second per acre (cfs/acre) and 0.015 cfs/acre for general commercial and limited commercial development, the projected average and peak wastewater flows generated by the project site at buildout would be 1.3 and 3.3 MGD, respectively. Such projected flows are consistent with those identified in the Specific Plan

The closest LACSD wastewater facility to the project site is the Amargosa Creek Trunk Sewer, Section 2, located in Division Street between Avenue M and Avenue M-8, just west of the project site and Sierra Highway. Although it has sufficient peak capacity (4 MGD) to accommodate flows from the project area, it is not feasible from a constructability standpoint since the topography along Avenue M from the project site to the trunk sewer increases in elevation.

The logical point to drain the projected wastewater flows is at Avenue M and Challenger Way which is consistent with the natural topography. These flows are tributary to the existing LACSD No. 14 trunk sewer at the intersection of Avenue K and Challenger Way. This 12-inch sewer trunk line has a peak capacity of 2 MGD and conveyed a peak flow of 0.2 MGD when last measured in 1991. From this intersection sewage is discharged north and westerly to the Lancaster Water Reclamation Plant. The LACSD No. 14 will fund and construct extension of this trunk sewer line along Challenger Way from Avenue K to Avenue L. The remainder of the extension of the trunk sewer line along Challenger Way from Avenue L to Avenue M will be constructed by the project proponent. Since the existing 12-inch trunk sewer line does not have adequate capacity for the buildout of the project site, much less for the ultimate development of its tributary area, the Challenger Way trunk sewer would be designed to convey the ultimate tributary peak flows.

In addition to the sewage generated directly from the site, there will be indirect flow generated due to a population increase associated with the project. Based on an average loading rate of 260 gpd per single family housing unit, the secondary sewage flows would be 1.1 MGD for 4,475 housing units at buildout. Therefore, the total increase in average daily sewage flows expected by implementation of this project is 2.4 MGD.

Since this site currently generates no sewage flows, the estimated sewage flows generated by implementing this Specific Plan as shown here are additional flows to the City's and LACSD No. 14's sewer system. These calculations do not consider the effects of separating reclaimable and non-reclaimable wastewater or onsite pretreatment of wastes. No significant impacts on the City's and LACSD No. 14's wastewater facilities is expected as a result of the project.

3.9.2.3 Solid Waste Generation and Management

Following development, the proposed project will increase the demand for solid waste collection and disposal service. Using a generation rate of 12 pounds per day per person and the potential for 10,110 people in the project per day, it is estimated that the project will generate approximately 121,320 pounds per day of solid waste. The density due to volume reduction for commercial refuse

is 1,200 pounds (0.60 tons) per cubic yard after compaction. The resulting direct solid waste generation would be 22,141 tons or 36,900 cubic yards per year.

In conjunction to direct refuse generation will be secondary demands for solid waste collection and disposal service due to the increase in population associated with the project. From an estimated growth in population of 16,176 would be the production of 194,112 pounds of solid waste per day, or 35,425 tons (59,042 cubic yards) per year. Consequently, the total annual yield of solid waste due to direct and secondary demands is projected to be 57,566 tons or 95,942 cubic yards at buildout. This represents 30 percent of the County's Integrated Waste Management Plan projected generation of 191,917 tons per year by 2005. The expanded Antelope Valley Public Dump would be adequate to serve the solid waste disposal service of the project area for many years.

State law (AB 939) mandates reduction in solid waste generation by 25 percent by the year 1995, and 50 percent by the year 2000. The City has adopted a solid waste management plan which proposes measures to achieve these reductions by both source reduction and recycling. Although the City has produced a Source Reduction and Recycling Element to achieve these goals, it has yet to approve a program to implement the plan. The City is currently negotiating with a private hauler to achieve these goals.

If AB 939 reduction rates are achieved by the targeted dates and the Antelope Valley Public Dump undergoes expansion as planned over the next 20 years, the lifespan of the landfill would be extended well beyond 2010. Before then, the waste stream generation from the project site would be reduced to about 11,070 tons per year, which can be readily accommodated by the landfill. Therefore, the impact of solid waste generation resulting from the project site would not be significant.

3.9.2.4 Electricity

The proposed project will require the installation of buried distribution lines along public right-of-way or easements in order to deliver electrical power to the site. To provide adequate electrical service, existing overhead feeder systems on Avenue M and Sierra Highway will feed the on-site electrical network. The project proponent will be responsible for the cost of installation of the necessary facilities. The electrical consumption for this Specific Plan represents a minimal impact on SCE's overall service system.

3.9.2.5 Natural Gas

The development site will require that buried gas distribution mains be installed from the existing feeder system lines along Avenue M and Sierra Highway. All natural gas lines within the project will be constructed underground within the street right-of-way, as approved by the City Engineer and The Gas Company. The project developer will be responsible for the cost of installation of the necessary facilities. The natural gas consumption expected for this Specific Plan represents a minimal impact on The Gas Company's ability to provide gas.

3.9.2.6 Telephone

Currently Pacific Bell does not provide the project site with telephone service. However adequate service will be provided through the existing telephone facilities adjacent to the site. Implementation of the Specific Plan would require construction of new service lines and service connections to the site and within the site. The impact to Pacific Bell's ability to provide telephone service would be insignificant.

3.9.2.7 Cable Television

Since no cable service currently exists at the project site, cable lines would need to be extended to serve the area.

3.9.3 Mitigation Measures

3.9.3.1 Water Production and Distribution

The following mitigation measures will reduce the water production and distribution impacts to a non-significant level:

- #34 Water and facilities must be in accordance with LACWWD #40 and City of Palmdale standards.
- #35 The project proponent will work with the LACWWD #40 and the City of Palmdale during detailed design, to integrate the water system serving the project into the City's water distribution plan and adjacent project water distribution plans.
- #36 Any water production, transmission or distribution improvements which directly serve the project will be financed and constructed by the project.
- #37 Building uses, heights, construction types, etc. must be evaluated and modified as necessary to assure that flows available from the distribution system meet or exceed the required flows set by the fire marshall.
- #38 Low flow plumbing fixtures, which at a minimum meet State Appliance Efficiency Standards in Title 20 shall be implemented in the project. This includes low-flow showerheads and toilets operating with less than 2 gallons per flush and the maintenance of waterline pressure at 50 psi or less.
- #39 Utilize landscaping standards which conserve water and incorporate the use of native desert vegetation and drought-tolerant plants.

Additional mitigation measures for water production and distribution are outlined in Section 3.3.3.

3.9.3.2 Wastewater Collection and Treatment

- #40 The Palmdale Business Park Center shall be annexed to LACSD No. 14.
- #41 Sewage collection lines and facilities which will serve the project must be developed in accordance with the standards of the LACSD No. 14 and the City of Palmdale.
- #42 During detailed design, the project proponent will work with the City of Palmdale to integrate the sewer system serving the project into the City's and LACSD No. 14's sewage collection system and adjacent development sewage discharge plans.
- #43 Any waste water collection or treatment system improvements which directly serve the project will be financed by the project proponent to the satisfaction of the appropriate jurisdictional agency.

Additional mitigation measures for wastewater collection and treatment are outlined in Section 3.3.3.

3.9.3.3 Solid Waste Generation and Management

The following mitigation measure will reduce the solid waste impacts:

- #44 The design and location of all solid waste collection areas shall conform to all applicable City standards, including adequate vehicular access, site-specific collection areas, and City standards regarding solid waste generation. Compaction and recycling shall be required. Storage and collection of recyclable materials (including compostable waste) shall be undertaken in coordination with the Palmdale Public Works Department and in compliance with Assembly Bill 939.

3.9.3.4 Electricity

The following mitigation measure is recommended:

- #45 The design, location, construction phasing and installation of the electrical lines and facilities necessary to serve this project shall be developed in coordination with SCE. In addition, City requirements for underground utility placement shall be complied with.

3.9.3.5 Natural Gas

The following mitigation measure is proposed:

- #46 Construction plans for the installation of the natural gas service necessary for the buildout of this Specific Plan shall be developed in coordination with The Gas Company.

3.9.3.6 Telephone

There are no mitigation measures.

3.9.3.7 Cable Television

There are no mitigation measures.

3.9.4 Impacts After Mitigations

The public utilities impacts of the proposed project can be reduced to less than significant levels by the application of the recommended mitigation measures.

3.10 HAZARDOUS MATERIALS

3.10.1 Existing Conditions

3.10.1.1 Site Assessment for Potential Contamination

An environmental assessment for soil contamination has been prepared for the project site (McLaren/Hart 1991). Past aerial photographs, U.S. Geological Survey maps and the files of a number of regulatory agencies were reviewed for indications of past development or problems with hazardous wastes at the site. Although several dirt roads exist at the site, the only indication of past activity is a small concrete pad located near the middle of the site. It is not known whether or not this once supported a structure. Agency files show no record of contamination at the project site. The files do identify a number of remediation sites located on Air Force Plant 42. Contamination has been identified at six sites. Petroleum hydrocarbons and volatile organic compounds have been found in soil samples at these sites. Two of the sites were recommended for cleanup and investigations are continuing on the remaining four sites. The nearest site is 0.7 miles southeast of the project site and none of the sites lie upgradient. The report concludes that soil contamination at Plant 42 does not pose a threat to the project site.

Several underground storage tanks lie north of the project site, but agency files indicate that they pose no environmental hazard.

The site was visually surveyed for evidence of dumped hazardous wastes or soil contamination. Several trash piles were found in the central and the southwest portions of the project site, apparently dumped illegally by unknown individuals. Empty oil cans, old oil filters, and empty bottles of transmission fluid, spray paint, lubricants and muriatic acid were found. But these were isolated and there was no indication of substantial soil contamination. The report concludes that there is minimal potential for contamination of soil at the site.

3.10.1.2 Management Framework for Hazardous Materials

The proper management of hazardous wastes that result from industrial and commercial activities in Palmdale is an important responsibility of businesses and industries in the city. The economic prosperity of the City and the quality of life of its residents depend on these businesses and industries, but at the same time, through mismanagement of hazardous materials of their wastes, the public and the environment may be at risk. Past practices of handling and storage of hazardous wastes throughout the nation have left a legacy of environmental and public health problems that are just now being addressed. In light of these problems and the public's increased awareness of the potential risks from hazardous wastes, federal, state, and local governments have enacted a variety of laws and established programs to identify and monitor the generation, handling, storage, and disposal of hazardous waste.

An important federal law in this respect is the Resources Conservation and Recovery Act (RCRA). In addition to specifying controls for solid and hazardous waste landfills, this act established a "cradle to grave" manifest system for tracking hazardous materials and wastes. RCRA was amended by the Hazardous and Solid Waste Amendments (HSWA) in 1984. HSWA required a phaseout of the disposal to landfills of all untreated liquid wastes by 1990. In addition, the

amendments extended the manifest tracking system for hazardous wastes to small quantity generators (i.e., less than 2,000 pounds per month). The Toxic Substances Control Act (TSCA) regulates the manufacture, distribution and disposal of chemical substances which may pose a health or safety risk to people. Finally, strong federal legislation exists to address cleanup of site contaminated with hazardous wastes. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by Superfund Amendments and Reauthorization Act (SARA), established a Superfund to clean up soils and groundwater at identified sites around the Country. There are over 1,000 superfund sites currently listed. The U.S. Air Force Plant 42 in Palmdale is identified as a potential contamination site. This site has already been listed as a hazardous waste site targeted for cleanup by the State of California.

State hazardous material regulations were strengthened by the passage of the Hazardous Waste Management Act in 1986. This act actively promotes hazardous waste control by encouraging or requiring practices which reduce hazardous materials use, and require recycling and/or proper treatment of hazardous wastes prior to disposal. The Hazardous Waste Management and Minimization Act of 1989 strengthened waste reduction provisions by requiring that facilities which generate more than 13 tons of hazardous waste per year complete a Waste Minimization Report by 1991 and then conduct a waste reduction evaluation every four years thereafter. AB 2185 requires that a "business plan" outlining chemical type, storage location, emergency equipment and an employee training program for facilities handling more than 55 gallons of a liquid, 200 cubic feet of compressed gas or 500 pounds of a substance identified as hazardous. AB 3777 identifies a list of extremely hazardous materials and requires that facilities utilizing such materials prepare a risk management and prevention program (RMPP). An RMPP includes a detailed analysis of potential accidents which may result in a release and analyzes the potential for exposure following such a release. The program must develop measures to prevent releases and implement a detailed training program for employees to avoid and control releases. AB 3205 requires special local review procedures for new facilities handling hazardous materials that are proposed to be located within 1,000 feet from a school. Special review by the local air pollution control district is mandated. Several pieces of legislation requiring special monitoring and removal procedures for underground storage tanks have also been enacted.

Several other state agencies and organizations are responsible for implementing and enforcing regulations for the management of hazardous wastes.

Air Resources Board (ARB). The ARB is charged with coordinating efforts to attain and maintain current air quality standards and to research causes and solutions to air pollution. The South Coast Air Quality Management District (SCAQMD) is responsible for enforcement of air quality laws and regulations in the project area.

Water Resources Control Board (WRCB). The WRCB is responsible for water rights and water pollution control. It has primary responsibility for the regulation of wastewater treatment facilities, underground storage tanks, and for land disposal of hazardous wastes. Through its regional boards, it issues waste discharge permits, monitors water quality, and takes enforcement action against violators.

Office of Emergency Services (OES). The State OES develops and maintains state plans and programs necessary to mitigate the effects of natural, manmade, or war-caused emergencies. OES

has primary responsibility for the administration of the hazardous materials disclosure and area plan provisions of AB 2185 and amending legislation. In addition, OES has primary responsibility for administration of the federal provisions of Title III of SARA.

California Department of Transportation (Caltrans). Caltrans has responsibility for the containment, identification, cleanup, and disposal of hazardous substance spills located within state highway rights-of-way.

California Highway Patrol (CHP). Principally a law enforcement agency, the CHP ensures the safe, convenient, and efficient transportation of people and goods over the California highway system. The CHP responds to highway emergencies involving hazardous materials, inspects and regulates commercial vehicles that carry hazardous materials, and coordinates with other agencies to enforce hazardous waste laws and regulations as they apply to transportation.

State Fire Marshall. The Office of the State Fire Marshall has the power to adopt regulations concerning the design and construction of cargo tanks, as well as standards regarding the sale, use, handling, possession, and storage of explosives. In addition, this office has the mandate to develop standards for the safe storage of hazardous materials.

The City of Palmdale has prepared a Hazardous Waste Management Plan in response to the requirements of AB 2948 and amending legislation. The plan provides an estimate of the amount of hazardous waste generated in the City of Palmdale. It also provides an assessment of the need for hazardous waste management facilities within the city and a framework for the evaluation and siting of necessary facilities.

The amount of hazardous wastes generated within the City of Palmdale has been estimated for the year 1990 (Brown, Vence and Associates 1993). A total of 14,000 tons of hazardous wastes are estimated to have been generated. Of this, 10,575 tons, or 75 percent, was generated by aerospace operations located at or adjacent to Plant 42. Small-quantity generators throughout the city were responsible for 2,800 tons while household hazardous wastes accounted for an estimated 560 tons.

3.10.2 Project Impacts

The commercial and golf course portions of the project site are not expected to involve substantial amounts of hazardous materials or wastes. The light industrial area would involve warehousing and distribution, assembly and manufacturing. The light industrial designation is intended for low-risk, non-nuisance type activities. Manufacturing activities would typically utilize only limited amounts of hazardous materials. An example would be organic solvents used for the manufacture of electronic parts.

The eastern portion of the project site is proposed for 87.92 acres of Airport-Related land uses. This could include aircraft manufacturing and maintenance. This type of industrial activity is prevalent at the Air Force Plant 42 facility, adjacent to the project site. A 1992 proposal to expand the Lockheed Plant 10 for similar uses contains information on proposed hazardous materials use which is relevant to the existing project (LSA 1992). In the EIR for that project, variety of hazardous materials related to the aerospace industry are proposed, as discussed below:

- Hazardous materials used in the production activity include the following:
 - Paints, dyes, and coatings - various colors and types
 - Thinners and strippers (organic solvents associated with painting operations)
 - Adhesives
 - Sealants
 - Materials used for fabrication - resins, fiberglass, composites, etc. (substances include organic solvents, isocyanates, epoxy and other resins, etc.)
 - Lubricants, oils, and fuels for planes, machinery, equipment, etc.
 - Hydraulic fluids
 - Cleaners for airplane maintenance, items to be painted, process equipment, etc.
 - Ammonia.
- Maintenance products such as cleaners for general maintenance, as well as lubricants and oils for equipment maintenance.

In addition such industries produce a wide variety of hazardous wastes:

- Acids (nitric, hydrochloric, phosphoric, sulfuric, hydrofluoric, chromic, etc.), alkaline solutions, sodium hydroxide, caustics, and other corrosive chemicals
- Cleaners such as trisodium phosphate and sodium silicate
- Metal and salt compounds such as hexavalent chromium, sodium dichromate, lead chromate, sodium dichromate, cadmium oxide, zinc tetroxochrome, asbestos, nickel, mercury, and metal chips (e.g., magnesium), beryllium
- Paint related wastes such as paint chips, sludge, etc.
- Aerosol containers for paints, lubricants, etc.
- Organic solvents, such as PCE and TCE, used as cleaners, paint strippers, and thinner for paints, coatings, and resins
- Hydraulic oils, oil soaked rags and absorbent materials
- Lubricating oils for machinery and other equipment
- Epoxy resins, fiberglass, silica, isocyanate, benzoyl peroxide, and oxidizers (e.g., hydrogen peroxide)
- Other organic compounds including ethyl ether and petroleum ether, 1,2,2-trichlorofluoroethane (a freon), kerosene, tetraethyl lead, phenolic chemicals, acrylonitrile, arsenic pentoxide, benzene, 1,3-butadiene, chloroform, epichloro-

hydrin, formaldehyde, methylene chloride, naphtha, 1-1-dichoroethane, dibutyl phthalate, methanol, vinyl chloride, chlorobenzene

- Flammable compounds, such as ethyl alcohol and isopropyl alcohol
- Photo chemicals
- Jet fuels

Source: LSA 1992, Appendix I - Hazardous Materials Impact Analysis

Additional industry in the area would result in the transport of additional hazardous materials and wastes through the city. Highways 14 and 138 are state routes which allow for the truck transport of hazardous materials. City arterials providing access to the site, such as Sierra Highway and Avenue M would also experience an increase in the number of trucks transporting hazardous materials. Increased hazardous materials/waste storage and transport would probably increase the chance for an environmental release. The Los Angeles County Fire Department is the local responder to hazardous materials incidents and operates a response unit for incident response and cleanup.

As stated in Section 3.10.1, AB 3205 requires special city review requirements, including consultation with the South Coast Air Quality Management District (SCAQMD), when a new facility handling hazardous materials proposes to locate within 1,000 feet from the outer boundary of a school. However no school is located within 1,000 feet of the project site and this requirement would not come into effect.

A myriad of federal, state and county laws and regulations have been passed over the past 10 years which tightly regulate the transport, storage use and disposal of hazardous materials. The City has developed a local Hazardous Waste Management Plan which further strengthens the control of hazardous materials use within Palmdale. Hazardous materials spills or other related incidents cannot be entirely eliminated. However stringent requirements for storage, handling and disposal of hazardous materials assure that the risk of accidental public exposure is minimized to an adequate degree. Significant impacts due to hazardous materials are not expected to result from the proposed project.

3.10.3 Mitigation Measures

The following mitigations assure that the hazardous materials impacts will be reduced to nonsignificant levels.

- #47 Review all proposed industrial projects with the Los Angeles County Fire Department to assure that proper storage and handling methods for hazardous wastes are implemented.
- #48 Require procedural compliance with Article 96, Hazardous Waste Facilities of the Palmdale Zoning Ordinance for the proposed facilities or prohibit amounts of

hazardous materials or wastes that meet the threshold standards contained in the California Health and Safety Code sections 25117 and 25141.

- #49 Restrict the routing of vehicles carrying potentially hazardous materials to the project site to State Routes 14 and 138, Sierra Highway, and to Avenue M.

3.10.4 Impacts After Mitigations

The hazardous waste impacts of the proposed project can be reduced to less than significant by the implementation of the recommended mitigation measures.

3.11 NOISE

3.11.1 Existing Conditions

3.11.1.1 Background

Noise is most often simply defined as unwanted sound. When sufficiently loud, noise may interfere with normal activities such as sleep, work and speech. It can also cause annoyance, hearing damage, and other physiological and even psychological problems. Generally, effects of noise are related to its perceived loudness which in turn is a function of the sound pressure level (SPL), the frequency content of the sound, and the duration of exposure.

The pressure fluctuations or SPL is measured in decibels (dB), a logarithmic scale referenced to the faintest sound pressure (20 micronewtons per square meter) detectable by the human ear. The logarithmic decibel scale is necessary due to the large spread in sound pressures and how it is perceived by the human ear.

The perceived loudness of sounds is also related to its frequency. Sound level meters have been designed to account for the dependence of perceived loudness upon frequency, and are constructed with weighting circuits, or filters. The A-weighting filter is most commonly used to measure environmental noise. Measurements are reported in units of A-weighted decibels, expressed as dBA (dB representing the absolute value of the sound and A the weighting or correlation factor).

Several community noise exposure rating methods, or noise metrics, have been established for assessing the potential impact of an intruding noise source. The day-night average sound level (Ldn), developed and adopted by the EPA, is the metric preferred by federal agencies, and is used by the Department of Defense in describing noise exposure in the vicinity of military air bases, and the Federal Aviation Authority in describing the noise environment around airports. The Ldn is the average 24-hour sound level (i.e. the average of hourly equivalent sound levels [Leq's] over a one day or 24-hour period) with a nighttime correction or penalty of 10 dB applied to noise measured between 2200 and 0700 hours (10:00 p.m. to 7:00 a.m.) to account for the increased nighttime sensitivity to noise.

A similar noise metric, the community noise equivalent level (CNEL), developed for California Airport Noise Standards, uses the same nighttime weighting as the Ldn but adds an additional penalty of 5 dB to noise measured during the time period from 1900 to 2200 hours (7:00 p.m. - 10:00 p.m.). CNEL is the metric used by the City of Palmdale to characterize and compare noise environments and to assess potential noise impacts. The CNEL and Ldn are not actual measurements but a computation of measured sound levels averaged over a 24-hour period. Consequently, periodic, or short-term, high noise level events may be obscured by these metrics. Numerically, the two metrics are equal for most community noise environments, often within 1 dB.

3.11.1.2 Regulatory Setting

Federal Statutes and Guidelines. The Noise Control Act of 1972 (P.L. 92-574) provides noise-level guidelines, developed by the EPA, to protect public health and welfare with a sufficient margin of

safety. The guidelines provide a basis for the states and other political subdivisions to establish and enforce noise regulations and land use policies.

Air Force Regulations and Guidelines. Air Force Air Installation Compatible Use Zone (AICUZ) Program. The program is designed to provide updated information on flight operations at Air Force bases and, by incorporating federal and state noise standards, develop compatible land use and zoning guidelines to assist local community planning efforts in dealing with the impacts of base operations.

State Statutes and Regulations. Noise Compatibility Guidelines of 1976. The State Department of Health Services' Office of Noise Control developed noise compatibility guidelines for various land uses (see Table 3.11-1). An Ldn, or CNEL, criterion of 65 dB for outdoor levels, has been adopted by federal and most state and local agencies as the upper limit of acceptable noise in residential communities. The Department of Housing and Urban Development (HUD) has adopted an Ldn level of 65 dB as the upper limit of acceptable aircraft and non-aircraft noise with regard to residential development and funding for community planning. Current Air Force guidelines, in their AICUZ programs, recommend a 65 dB Ldn as the upper limit for residential development unless special noise insulation features are incorporated in buildings. The California Airport Noise Standards prescribe a CNEL criterion of 65 dB in defining noise impact areas about airports. The most common criteria for determining acceptable indoor noise in residential communities is an Ldn or CNEL value of 45 dB. In addition, California Noise Insulation Standards (Title 25 California Code of Regulations, Chapter 1, Subchapter 1, Article 4) require that indoor noise levels in residential areas do not exceed a CNEL of 45 dB.

City of Palmdale General Plan: Draft Noise Element. The City's Noise Element, in accordance with section 65302(f) of the California Government Code, includes a discussion of noise and its impacts, identifies noise-sensitive land uses and noise sources, and provides guidelines such as the State Office of Noise Control's Recommended Acceptable Noise Guidelines for making land use decisions. The guidelines are included as Table 3.11-1. The Noise Element also provides policies and guidelines to: achieve noise compatibility among adjacent land uses, and protect and maintain areas having acceptable noise environments; develop a City noise ordinance; govern land use within the 65 CNEL contour line of USAF Plant 42; and ensure compliance with California's Noise Insulation Standards (e.g., acoustical analysis reports).

Noise Sensitive Land Uses. The City will coordinate with appropriate agencies and developers to reduce unnecessary noise in the vicinity of noise-sensitive locations, including maintaining liaison with: transportation agencies in the design, location and attenuation of noise levels from existing and planned facilities and roadways; and the Southern Pacific rail line to reduce noise levels generated by train movement within the City.

Acoustical Design. The City requires developments to implement noise control measures during construction. Acoustical design shall include measures to control noise at the source, along the transmission path or at the receptor.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L_{50} OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL - LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES						
RESIDENTIAL - MULTIFAMILY						
TRANSIENT LODGING - MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING UTILITIES, AGRICULTURE						

LEGEND



NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



CONDITIONALLY ACCEPTABLE

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



NORMALLY UNACCEPTABLE

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



CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L_{50} . Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or L_{50} .

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act,

residential uses located in Community Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L_{50} . This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

Source: California Department of Health, Guidelines for the Preparation and Content of Noise Elements of The General Plan, February, 1976

Table 3.11-1: STATE RECOMMENDED NOISE LEVEL GUIDELINES

Source: California Department of Health, 1976

URS
Consultants

3.11.1.3 Existing Noise Environment

The existing noise environment within the City of Palmdale is primarily a reflection of the effects of the major noise sources, including roadway traffic, railroad operations, aircraft operations and overflights, as well as stationary sources typically found in most urban communities.

In an effort to more clearly characterize and define the noise environment for representative land use categories (e.g., residential, commercial, public use, and undeveloped property) in the City Planning Area, the City conducted a community noise survey and developed noise contours (Palmdale 1992a; 1992b). The noise survey characterized and identified existing noise levels at specific locations within the City and surrounding the Project site. Based on the results of this noise survey, the following noise levels are expected to be representative of the noise environment for existing land uses within and surrounding the Project site.

- Residential Land Uses. The only residential areas surrounding the Project site or potentially affected by principal access routes are located within the City of Lancaster in an area west of Challenger Way (10th Street north of Avenue M). Land uses in this area include scattered commercial and industrial developments and rural single family residences. Based on the City's 1987 community noise survey (Palmdale 1992a) taken at 12 representative residential sites, median noise levels (L50, or noise levels exceeded 50% of the time) are expected to range between 55.5 and 63.0 dBA; background levels (L90, or levels exceeded 90% of the time) between 45.5 and 59.5 dBA; and peak noise levels (L10) between 64.5 and 69.0 dBA. The levels reflect noise generated by truck traffic along major roadways and aircraft fly-overs and landings at USAF Plant 42.
- Commercial Locations. As discussed above, commercial land uses near the Project site are limited to areas to the northwest in the City of Lancaster. The median noise levels (L50) are expected to be between 59.5 and 63.5 dBA, background levels (L90) of 55 dBA, and peak noise levels (L10) from 66 to 73 dBA.
- Undeveloped Locations. The area north and east of the site consists primarily of undeveloped land which the City's General Plan designates as industrial. The median noise levels (L50) measured at undeveloped property locations ranged between 60.5 and 68.5 dBA depending upon their proximity to major noise sources. Background levels (L90) were from 53.5 to 62 dBA, with peak levels (L10) between 64.5 and 85.5 dBA. The peak noise level of 85.5 dBA reflects noise generated by numerous aircraft approaches and landings which occurred during the measurement period at locations near the primary runway at USAF Plant 42. The existing noise levels would be considered normally acceptable for industrial and commercial land uses, but only conditionally acceptable for most noise sensitive land uses (see Table 3.11-1).

The noise from aircraft operations appears to be the primary noise source affecting most parts of the City as well as the Project site. Aircraft noise was recorded at half of the 12 measurement locations during the noise survey. Railroad noise was characterized by its long duration with some pass-bys taking several minutes for trains carrying as many as 100 rail cars with noise levels

ranging from 64 dBA to 73 dBA for the cars. The effects of traffic noise were not nearly as pronounced. The noise levels recorded 150 feet from Sierra Highway ranged from 68 to 74 dBA. Truck traffic noise levels recorded along some arterials ranged from 68 to 72 dBA at 150 feet.

Noise Sensitive Land Uses. There are no existing noise sensitive land uses (i.e., land uses that involve long-term exposure to the noise environment and are particularly susceptible to noise intrusions) near, or potentially affected, by the Project site. The closest residential areas, as discussed above, are located within the City of Lancaster, north of Avenue M in an area west of Challenger Way (10th Street). Other single- and multi-family residential areas are located south of Avenue Q, bordering Avenue R, and near the intersection of Sierra Highway and Palmdale Boulevard.

Noise Sources. The noise sources affecting the Project site and surrounding areas are transportation-related, principally aircraft operations (i.e., Air Force Plant 42), Southern Pacific Railroad (Valley Mainline), Sierra Highway, and several other arterials and roadways that will ultimately comprise the Project site's primary access routes. Time-averaged, day-night (i.e., CNEL) noise contour lines for transportation noise sources are presented in Figure 3.11-1. The noise contours provide an estimate of existing sound levels, but may overestimate the exposure since the contours do not reflect potential noise reduction, or attenuation, due to barriers or other structures near the sources. The transportation sources in the vicinity of the Project site are discussed in the following paragraphs.

Southern Pacific Railroad. The noise levels of the Valley Mainline and Sierra Highway generate a combined CNEL of 60 dBA that extends approximately 1,800 feet from their center. Much of the western section of the Project site lies within this combined 60 dBA CNEL contour line (see Figure 3.11-1). Railroad noise levels were calculated using the U.S Department of Housing and Urban Development Noise Assessment guidelines. The assumptions used in the calculations are presented in the General Plan's Draft Noise Element (Palmdale 1992a) and the Draft Program DEIR for the General Plan (Palmdale 1992b).

Major Roadways. Table 3.11-2 provides a summary of traffic-related noise levels along the principal roadways near the Project site and/or potentially impacted by the Project. Traffic noise levels were computed using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA RD-77-108). The FHWA model input parameters include traffic volumes, vehicle mix, vehicle speed, and roadway geometry. Caltrans' vehicle reference energy levels for automobiles, medium and heavy trucks were used in the computations.

Traffic volumes were based on the weekday peak period (morning or evening) traffic counts collected October, 1992 by DKS (1994). The vehicle mix, considered typical of Southern California roadways, consisted of 97.4% automobiles, 1.84% medium trucks, and 0.8% heavy trucks. Vehicle speed and roadway geometry were based on existing geometrics (roadway speed limits and number of lanes).

Site-specific information on the nature and types of noise attenuating conditions/structures (e.g., flat and soft surfaces, buildings, walls, berms) was not available and these parameters were not included in the modeling. Consequently, the model results reflect a "worst-case" or hard-site condition.

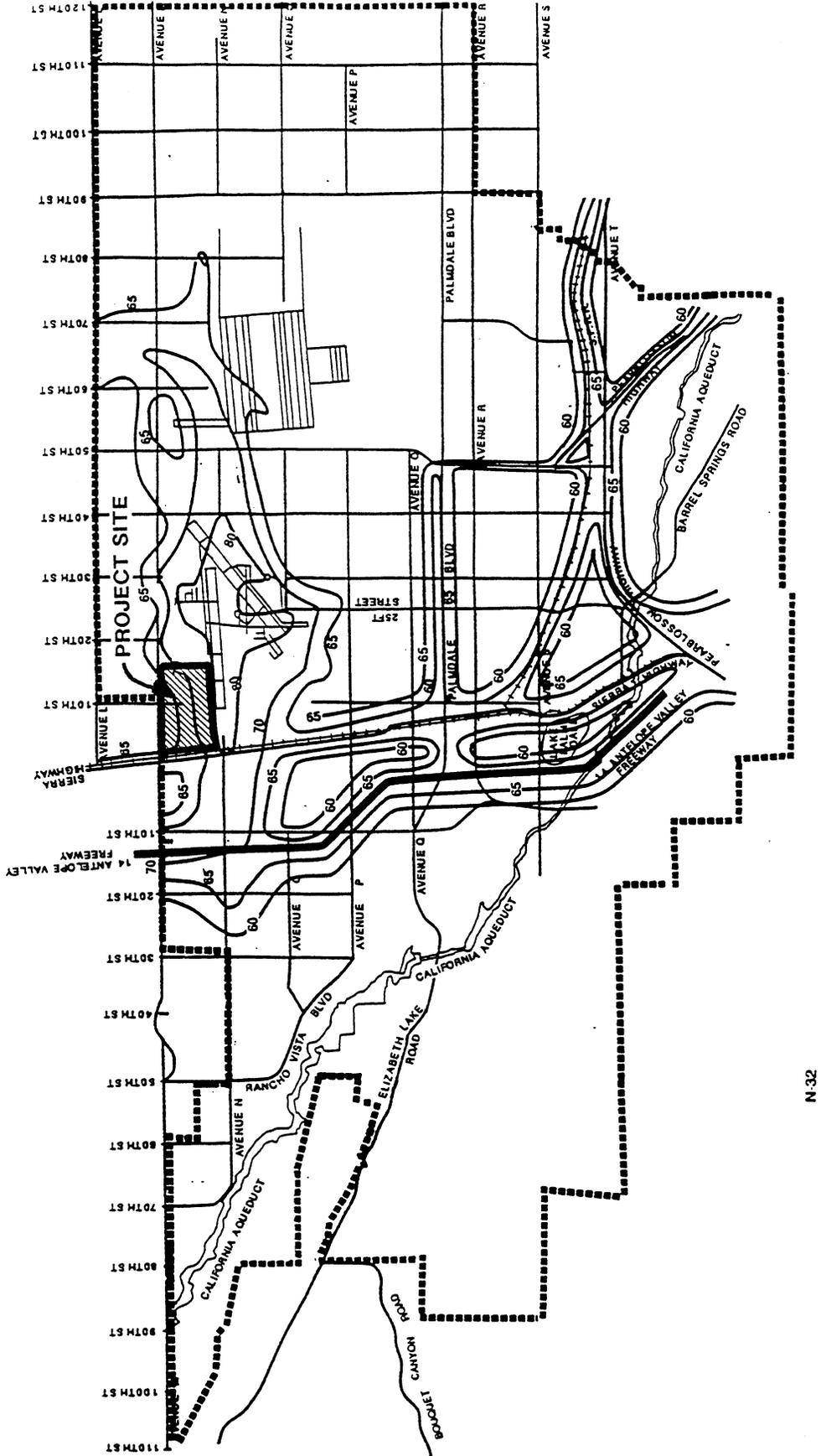


Figure 3.11-1: EXISTING TRANSPORTATION NOISE CONTOURS
PALMDALE GENERAL PLAN

Source: Michael Brandman, 1992

Table 3.11-2
ROADWAY TRAFFIC NOISE LEVELS EXISTING CONDITIONS¹

Roadway	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 feet) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60 dBA
North - South Roadways							
Sierra Highway							
North of Avenue L	4	50	1980	66	25	120	400
South of Avenue L	4	50	1636	65	20	90	330
North of Avenue M	4	50	1927	65	20	105	300
South of Avenue M	4	50	2402	66	30	150	480
North of Avenue N	4	50	2382	66	30	150	480
South of Avenue N	4	50	2525	66	40	160	500
4th Street East							
North of Avenue M	2	40	262	55	--	1	20
South of Avenue M	2	40	0	--	--	--	--
6th Street East							
North of Avenue M	2	35	100	49	--	--	1
South of Avenue M	2	35	0	--	--	--	--
10th Street East							
North of Avenue L	2	50	735	58	1	40	150
South of Avenue L	2	50	752	62	10	40	150
North of Avenue M	2	50	761	62	10	40	150
South of Avenue M	2	50	0	--	--	--	--

Table 3.11-2, Continued, Page 2 of 3

Roadway	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 feet) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60 dBA
15th Street East							
North of Avenue M	2	35	400	55	--	1	25
South of Avenue M	2	35	0	--	--	--	--
Avenue L							
West of Sierra Hwy	4	50	728	61	1	30	150
East of Sierra Hwy	4	50	0	--	--	--	--
Avenue M							
West of Antelope Valley Hwy	2	50	718	61	5	35	140
East of Antelope Valley Hwy	4	50	1138	64	14	70	220
West of 10th Street W	4	50	1275	64	11	70	280
East of 10th Street W	4	50	1161	63	7	55	250
West of Sierra Hwy	4	50	1140	63	5	60	230
East of Sierra Hwy	4	50	1415	64	10	80	290
West of 4th Street E	4	50	1546	64	15	80	300
East of 4th Street E	4	50	1394	64	10	70	270
West of 6th Street E	4	50	800	62	3	30	150
East of 6th Street E	4	50	800	62	3	30	150
West of 10th Street E	4	50	1090	63	5	50	230
East of 10th Street E	4	50	345	58	--	5	50

Table 3.11-2, Continued, Page 3 of 3

Roadway	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 feet) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60 dBA
West of 20th Street E	2	50	328	58	--	5	50
East of 20th Street E	2	50	104	53	--	--	3
Avenue N							
West of Sierra Hwy	2	50	419	59	1	20	80

Notes: ¹ Computed traffic noise levels using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108); and Caltrans' vehicle reference energy levels for automobiles, medium and heavy trucks.

² Weekday peak period (morning or evening) traffic counts collected October, 1992 (DKS 1994).

³ Contour lines measured 100 feet from near edge of the roadway.

⁴ Contour lines measured from near edge of roadway.

As shown in Table 3.11-2, the computed "worst-case" CNEL (average day-night noise levels) at 100 feet from the near edge of the roadway is generally below 65 dBA. There are no noise-sensitive land uses along these roadway segments, virtually all of the designated land uses are either commercial/manufacturing, industrial, or U.S. Air Force and related. Consequently, the computed traffic-related noise levels along the roadway segments are consistent with existing land uses.

Aircraft Noise (USAF Plant 42 and Palmdale Regional Airport). Figure 3.11-1 shows the noise contour lines for aircraft operations at Plant 42 and Palmdale Regional Airport. The contour lines, which reflect both aircraft operations and engine run-ups, were developed by the Department of the Air Force as part of the Air Installation Compatible Use Zone (AICUZ) program for military airfields and provided to the City of Palmdale as part of the Air Force Systems Command (AFSC) Master Plan AICUZ Map (USAF 1990).

The CNEL metric, as discussed above, represents the average equivalent A-weighted "adjusted" sound level during a 24-hour day, and may obscure periodic or short-term elevated noise levels. However, the CNEL metric provides a common measure for a variety of differing noise environments and is useful in comparing noise environments and indicating the potential degree of adverse noise impacts.

The noise contours presented in Figure 3.11-1 reflect existing aircraft operations (takeoffs and landings) and engine run-ups. The 80 dBA CNEL contour line does not currently extend beyond the Plant 42 boundary. The Project site is presently located outside of the 70 dBA CNEL, and only a small portion of the northern section of the site is exposed to noise levels exceeding 65 dBA.

3.11.2 Project Impacts

Potential impacts associated with the Project consist of (1) impacts on surrounding land uses, and community exposure to increased noise levels directly attributable to the activities of the businesses and industries within the Business Park Center; and (2) onsite impacts of the surrounding ambient noise environment on the Business Park Center patrons and businesses/industries.

Development of the Project will result in both short-term and long-term noise effects in the Project area. Short-term effects are principally associated with construction activities. Long-term effects will result from increased vehicular traffic volumes generated by the project as well as onsite noise generated by daily operational activities of the various industrial and commercial businesses.

The principal noise sources affecting the site consist of aircraft operations at Air Force Plant 42 and Palmdale Regional Airport, traffic generated noise from adjacent arterials and collector streets, and Southern Pacific railroad operations.

Significance Criteria. Noise impacts were considered significant if noise attributable to the Project results in any of the following:

- An increase of more than 5 dBA in sound levels at adjacent residences;
- A noise level of more than 65 dBA CNEL in neighboring residential areas;

- Exceedances of the maximum acceptable exterior or interior sound levels identified in Table N-3 of the City's Noise Element (Palmdale 1992a);
- Violation of applicable state or City of Palmdale noise regulations or ordinances.

The requirements of applicable state and city regulations or ordinances must be met by the Project. Mitigation would be required for any operation that would constitute a violation of these regulatory requirements or result in a significant impact based on the above criteria. Mitigation is recommended when the Project fails to meet noise levels established by the State Recommended Noise Level Guidelines (see Table 3.11-1).

3.11.2.1 Impacts on Surrounding Land Uses

Construction Noise. Noise generated by construction operations would be short-term and affect only limited portions of the surrounding Project area during the course of the various phases of site development. Construction activities and equipment typically generate noise levels of 80-90 dBA at distances of 50 feet. Noise levels during construction would vary considerably depending upon on the location and nature of the activities but can be expected to range between 60-80 dBA at the site perimeters. Given the absence of any sensitive noise receptors in the immediate project area, construction noise is not considered a significant temporary impact. However, restricting construction activities to weekdays during daytime hours would limit disturbances on adjacent land uses and residential areas along Project access routes.

Project-Generated Traffic. As discussed in the Transportation Section, the Business Park Center, at buildout or following completion of the final phase (Phase 8) around the year 2021, is projected to generate approximately 53,058 daily vehicle trips, and about 4,330 trips and 6,281 trips during peak morning and evening peak hours. Many of the principal access routes are expected to be expanded and improved to accommodate not only the additional Project-related traffic but future traffic conditions at buildout of the City's General Plan. Project area land uses assumed in the City's General Plan are expected to generate approximately 61,800 daily vehicle trips, including 6,600 peak morning and 6,000 peak evening trips.

Existing and projected traffic noise levels were predicted using the Federal Highway Administration (FHWA) Highway Noise Prediction Model discussed above. Traffic volumes used in the model include Project-related traffic volumes, and background traffic volumes based on the City's Traffic Model adjusted for 2021 conditions. As was the case for the existing conditions, input parameters used in the model reflect worst-case or "hard-site" conditions.

Model results are presented in Table 3.11-3. As shown in the table, the CNEL at 100 feet from the near edge of the roadways along the major arterials (Sierra Highway, Avenue M, Avenue L) and 10th Street East, the principal north-south access route, is generally 70 dBA. Average day-night noise levels (CNELs) within 100 feet of the near edge of other access routes and minor arterials in the vicinity of the Project site are projected to be well below a CNEL of 65 dBA. Since future noise-sensitive land uses are not anticipated along these roadways, and current designated land uses along these roadways are expected to remain unchanged. Consequently, noise impacts resulting from increased project-related traffic are not considered significant.

Table 3.11-3
ROADWAY TRAFFIC NOISE LEVELS FUTURE CONDITIONS -- PROJECT BUILDOUT (2021)¹

Roadways	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 ft.) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60dBA
North - South Roadways							
Sierra Highway							
North of Avenue L	6	55	3221	68	60	250	850
South of Avenue L	6	55	3358	69	75	280	850
North of Avenue M	6	55	4537	70	100	350	1300
South of Avenue M	6	55	4902	70	100	380	1300
North of Avenue N	6	55	4890	70	100	380	1300
South of Avenue N	6	55	5087	70	100	380	1300
4th Street East							
North of Avenue M	2	40	1456	62	10	50	190
South of Avenue M	2	40	1567	63	10	50	190
6th Street East							
North of Avenue M	2	40	1103	61	3	30	130
South of Avenue M	2	40	1579	63	10	50	200
10th Street East							
North of Avenue L	6	55	5837	71	130	510	1700
South of Avenue L	6	55	6002	71	120	500	1600
North of Avenue M	6	55	1379	65	5	70	350
South of Avenue M	6	55	1117	64	1	20	300

Table 3.11-3, Continued, Page 2 of 3

Roadways	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 ft.) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60dBA
15th Street East							
North of Avenue M	4	35	371	55	--	--	1
South of Avenue M	4	35	189	51	--	--	1
East - West Roadways							
Avenue L							
West of Sierra Hwy	8	55	2927	68	45	200	200
East of Sierra Hwy	8	55	2718	67	45	200	800
Avenue M							
West of Antelope Valley Hwy	8	55	3880	69	80	320	1100
East of Antelope Valley Hwy	8	55	3982	69	80	320	1100
West of 10th Street W	8	55	2548	67	40	190	750
East of 10th Street W	8	55	2889	68	50	220	850
West of Sierra Hwy	8	55	2621	67	40	190	760
East of Sierra Hwy	8	55	4082	69	80	320	1050
West of 4th Street E	8	55	5802	71	130	500	1700
East of 4th Street E	8	55	4971	70	100	400	1400
West of 6th Street E	8	55	4552	70	100	370	1250
East of 6th Street E	8	55	3686	69	70	280	1100
West of 10th Street E	8	55	3454	68	60	250	890
East of 10th Street E	8	55	2552	67	40	180	720

Table 3.11-3, Continued, Page 3 of 3

Roadways	Existing Traffic Geometrics		Peak Hour Volume ²	CNEL Contour Line ³ (@ 100 ft.) (dBA)	CNEL Contour Line ⁴ (feet)		
	Lanes	Speed Limit			70 dBA	65 dBA	60dBA
West of 20th Street E	8	55	3189	68	60	250	860
East of 20th Street E	8	55	1562	65	15	100	390
Avenue N							
West of Sierra Hwy	6	50	692	61	1	20	120

- Notes:
- 1 Computed traffic noise levels using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108). The FHWA model uses traffic volumes at buildout (Phase 8) of the Project site (circa 2021), vehicle mix, vehicle speed, and future roadway geometry. Caltrans' vehicle reference energy levels for automobiles, medium and heavy trucks were used in the computations. In the absence of information on the nature and types of site-specific noise attenuating conditions or structures (e.g., flat and soft surfaces, buildings, walls, berms), ultimately used at the site, these parameters were not included in the modeling. Consequently, the input parameters used in the modeling reflect worst-case or "hard-site" conditions.
 - 2 Estimated peak period (morning or evening) traffic volumes including Project-related traffic and background volumes estimated using the Palmdale Traffic Model for the year 2010 that were adjusted for 2021 conditions (DKS 1994).
 - 3 Contour lines located 100 feet from near edge of the roadway.
 - 4 Contour lines located from near edge of roadway.

Project-Generated Commercial Air Traffic. It is anticipated that the Business Park will generate a reasonable number of passenger trips but is not expected to significantly affect the number of daily flights within the a 15-year planning period.

Operational Noise. Potential onsite Business Park noise-generating activities are expected to include various pieces of mechanical equipment, trash pickup, truck deliveries, and varied activities associated with the proposed manufacturing, storage, and commercial enterprises.

Mechanical equipment such as air conditioning, refrigeration units, and automotive repair and car wash equipment not enclosed in buildings, can produce noise levels which would be perceptible and potentially annoying to individuals within areas of the Business Park Center but would not be of sufficient intensity to impact areas outside its boundaries.

Noise generated by trash pickup and compacting vehicles can reach levels of 80 to 85 dBA at 50 feet for short durations. Since these activities are expected to be limited to screened (e.g., walls, berms, fences) rear areas, significant impacts to areas outside of the confines of the site are not anticipated.

Delivery trucks are expected to be a common noise source within the Business Park. Noise produced by idling delivery trucks commonly exceed noise levels of 75 to 80 dBA within 50 feet. Loading docks or staging areas are permitted only in rear and side lot areas of buildings, and are required to be set back and recessed, and screened from neighboring properties or streets.

The types of industrial and commercial uses planned for the Business Park that constitute potential noise sources include: automotive/light truck repair, manufacturing and assembly, and storage and distribution. Any or all of these uses could result in noise levels that would be perceivable in areas outside of the Park boundaries. However, since these uses would only be permitted within enclosed buildings and limited primarily to areas along the northern and western boundaries of the Park, significant impacts on surrounding land uses are not anticipated.

3.11.2.2 Onsite Impacts

The impacts of unacceptable onsite noise levels resulting from surrounding sources may (1) have adverse effects on the public who frequent the site; (2) reduce the productivity of workers and create an unpleasant workplace; and (3) cause financial hardships on tenants and property owners unable to attract customers or workers. The major surrounding noise sources affecting the site are discussed in the following paragraphs.

Southern Pacific Railroad. The noise levels of the Valley Mainline and Sierra Highway are projected to generate a combined CNEL of 65 dBA extending approximately 800 feet from their center. The western section of the Project site, mostly designated as golf course land use, is expected to be exposed to railroad/roadway noise levels exceeding 65 dBA (Palmdale 1992a; Palmdale 1992b). In addition, the anticipated 15 - 20 daily operations, consisting of 4 locomotives and 120 rail cars per train, could result in single noise events resulting in onsite exposures exceeding 75 dBA. Nevertheless, the anticipated average day-night (CNEL) noise levels generated by railroad operations are expected to be consistent with the proposed land uses identified in the Business Park Specific Plan (D.A Price 1994) for the western quadrant of the site.

Roadway Traffic. Results of the traffic noise model presented in Table 3.11-3, indicate that the future CNEL at 100 feet from the near edge of major arterials (Sierra Highway, Avenue M, Avenue L) and the principal north-south access route (10th Street East) adjacent to the Project site are projected to be approximately 70 dBA. Although the CNEL along Sierra Highway is projected to increase, the increase will be overshadowed by the effect of railroad noise discussed above.

The CNELs within 100 feet of the near edge of other access routes and minor arterials near or surrounding the Project site are projected to be well below 65 dBA CNEL. Future noise levels along these roadways are projected to increase as much as 10 dBA and will expose larger areas of the Project site to increased noise levels. However, noise levels are not expected to result in onsite noise levels exceeding 65 dBA CNEL due to intervening attenuation (e.g., barriers, buildings, landscaping, distance). Consequently, based on land uses in the Specific Plan Land Use Plan, the traffic-related noise levels are expected to be consistent with the proposed Business Park Center land uses, and traffic-related noise levels are not considered significant onsite impacts.

Aircraft Noise (USAF Plant 42 and Palmdale Regional Airport). The Airport Commission of the Los Angeles County Division of Airports and the USAF reached a joint-use agreement allowing phased incremental increases with USAF approval up to a maximum of 400 commercial aircraft operations (takeoffs and landings) per day. However, the agreement is subject to environmental review and preparation of an EIR, as well as certification by the South Coast Air Quality Management District which may delay the expanded use. Currently 50 commercial flights/day are allowed to use Plant 42 landing facilities under a Division of Airports agreement with USAF Plant 42.

The noise contours presented in Figure 3.11-2 reflect noise exposure resulting from 400 commercial operations, the maximum allowable number of operations. The contour lines are based on the AICUZ noise contours developed by the USAF for the AFSC Master Plan, as part of USAF participation in the local land use planning process (USAF 1990). As shown in the figure, except for a small segment in the northeast quadrant, all of the Project site is within the 75 dBA CNEL contour line. All of the southern margin and most of the western quadrant of the site is within the 80 dBA CNEL contour.

Consequently, the projected exterior noise exposure at the site, particularly the southern and western areas of the site, would normally be considered unacceptable or incompatible with certain land uses, including: motels, hotels, schools, hospitals, nursing homes, playgrounds, parks, and golf courses; but not necessarily with land uses such as industrial, manufacturing, commercial, or office buildings (see Table 3.11-1).

However, the Noise Element of the City's General Plan makes allowances for certain land uses where: (1) the public is present only for limited periods of time and have a choice as to whether to frequent the area/establishment, such as commercial operations; (2) interior noise levels are high enough that exterior noise levels are not intrusive, such as industrial or manufacturing operations; or (3) recreational uses that are less "noise sensitive" due to the relative infrequency of use and voluntary nature of public use, such as golf courses. Furthermore, the General Plan indicates that "(E)ncouraging development of these types of land uses in areas affected by significant and continuing noise sources, such as major arterial roadways, Air Force Plant 42, and railyards, therefore offers the City significant planning opportunities and advantages."

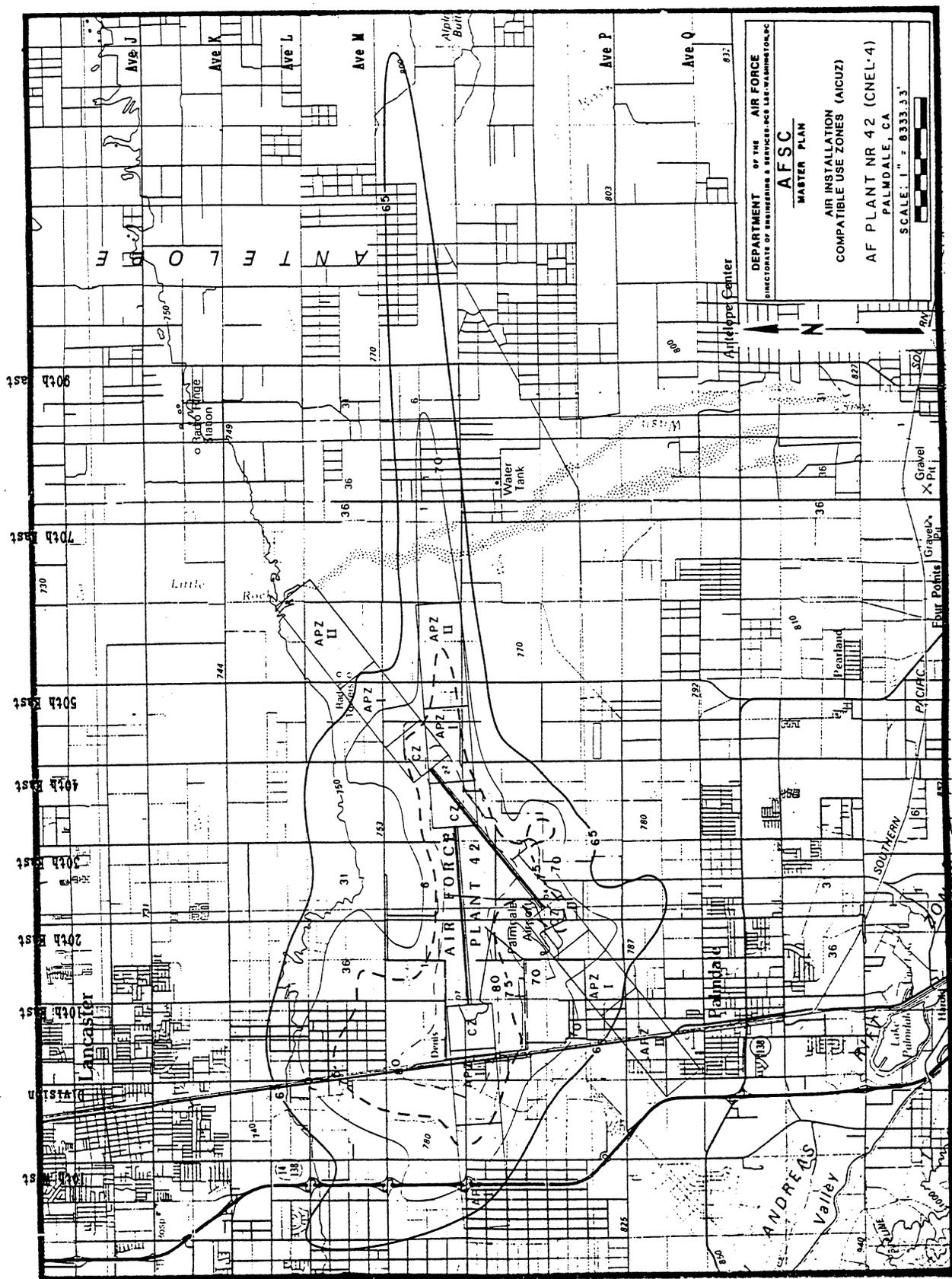


Figure 3.11-2: AIR INSTALLATION COMPATIBLE USE ZONES

Source: AICUZ Report, Volume 1

3.11.3 Mitigation Measures

Although the proposed Project is not expected to result in significant noise impacts on the commercial and industrial land uses proposed for the site or surrounding land uses, the following measures are to be implemented to reduce potential adverse effects of onsite construction and operational activities.

- #50 Limit trash pickup to areas screened from public view and outside of yard setback areas. Screen all such areas with a combination of walls, berming and landscaping per City standards.
- #51 Limit the location of loading docks or staging areas to rear and sidelot areas. These areas should be set back and recessed, and screened by a combination of walls, berms and landscaping from neighboring properties or streets. No loading or staging areas shall be located in any required setback areas.
- #52 Construct a landscaped berm or wall along edges of commercial parking lots facing public streets and adjacent property.
- #53 Construct berms whenever possible within landscaped setback areas adjacent to buildings and within parking areas in order to contain onsite noise.
- #54 Light industrial and manufacturing land uses (PLI) that would result in onsite noise levels exceeding ambient levels or create a potential nuisance to adjacent facilities or businesses should only be permitted within enclosed buildings and limited to the designated PLI areas as proposed in the Specific Plan. These uses would include, but are not limited to manufacturing and assembly, wholesale/retail distribution and storage facilities, and automotive/light truck repair.

The commercial and industrial uses proposed for the site are consistent with the City's Land Use Compatibility Guidelines and, therefore, impacts of unacceptable onsite noise levels resulting from surrounding sources are not considered significant. However, to improve the ambient onsite noise environment:

- #55 To ensure that the design and construction of all structures will comply with the interior noise standards of the State and City of Palmdale, construction plans are to be certified by a registered acoustical engineer as meeting all applicable standards. The certification shall consist of an acoustical analysis report submitted with the application for a building permit. The standards, as defined in the State Building Code (Part 2, Title 24, of the California Code of Regulations) and the City's General Plan Noise Element Table N-3 (Maximum Acceptable Levels). For the Project's proposed land uses the maximum acceptable interior noise levels are:

- Not to exceed an Leq(h) of 65 dBA averaged over the period, or hours ("h"), of operation within manufacturing, warehousing and wholesale facilities; and

-- Not to exceed an Leq(h) of 55 dBA averaged over the hours ("h") of operation within commercial, retail, or business office facilities.

#56 Project proponent shall grant an avigation easement over the project site. This easement would be forwarded to the USAF and the Los Angeles Department of Airports for review and comment and to the City for approval. A copy of the easements would be extended and made available to any owners, lessors, and renters of property within the specific plan area.

3.11.4 Impacts After Mitigations

The noise impacts of the proposed project can be mitigated to less than significant levels with the application of the recommended mitigation measures.

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3.12

CULTURAL AND PALEONTOLOGICAL RESOURCES

The analysis contained in this section is based on the report entitled "*Archaeological, Historical and Paleontological Investigations of the Proposed Palmdale Business Park Center Specific Plan Project Area, City of Palmdale, County of Los Angeles, California*" prepared by McKenna et al. The full report is included as Appendix C of the EIR.

3.12.1 Existing Conditions

The Antelope Valley area is generally associated with the Vanyume Indians, Native Americans wedged between the Desert Serrano (east) and the Kitanemak (west). The Serrano and Vanyume are differentiated by linguists but their material cultures suggests that they are very similar. Most of the Vanyume sites tend to be located within the foothills. There are very few sites that are known to be located directly on the desert floor. The Vanyume were primarily hunters and gatherers, with the females responsible for the majority of the foraging and the males providing red meats from hunting. Most of the resources that were gathered were from foothill areas, which suggests that the majority of the sites are likely to be located above the desert floor.

Materials associated with the Vanyume include the bow and arrow, sticks, traps, snares and dead falls. Foodstuffs (meats) were prepared in earthen ovens by boiling, or through the use of heated stones. Some meats and vegetal resources were dried in the sun for storage and future consumption. Other materials include the metate, mano, mortar and pestle, lithic knives, scrapers, and other small lithic tools. The Vanyume were a patrilocal society, meaning residency is determined through the male lineage. Residences included wickiup structures, ramadas, ceremonial structures, storage structures, granaries, sweathouses, and outdoor activity areas (Bean and Smith 1978: 570-574; McKenna 1992:4).

The association of the Vanyume with the presence of bows and arrows indicate a direct association with the Saratoga Springs Period (1500 to 800 years ago). This suggest that the Vanyume were a relatively late population in the area. The earlier years were more likely to be associated with Serrano populations. This indicates a possible split in alliances during this period.

The historic period for California is considered to have started in 1769, although European contact occurred much earlier along the coast. During the Mission Period, the Antelope Valley was visited by representatives of the Mission San Gabriel de Archangel of the San Gabriel Valley and the Mission San Fernando of the San Fernando Valley (Bean and Smith 1978:573; History of Antelope Valley, on file, Palmdale Public Library, 1991). In the early years of the 19th Century, the majority of the Vanyume were relocated to the Asistencia at Redlands, leaving the Antelope Valley virtually unpopulated. By 1900, the Vanyume were considered extinct.

The historic period of the Antelope Valley has been associated with six main themes:

1. Exploration (1772 to Railroad Surveys);
2. Railroad Surveys / Railroad Developments;
3. Cattle Ranching (pre-homesteading);
4. Mines and Race Cars;

5. Muroc and the Homesteaders; and
6. Military History (post 1913).

The majority of the historic activity in the Antelope Valley took place after the Mexican period (post-1846). The floor of the Antelope Valley was not considered suitable for occupation until the 1870s, when homesteading opened the area to settlement. The settlement increased with the 1876 completion of the Southern Pacific Railroad. Three railroad stations were opened in the Antelope Valley: Lancaster, Acton and the general Palmdale area. Palmdale was founded by a group of Swiss and German settlers in 1886 as "Palmenthal". The name was officially changed to "Palmdale" in 1899. By 1899, the original community of Palmdale consisted of a single family. The new community of Palmdale was founded along the railroad right-of-way, near the site of the railroad station.

Palmdale remained a small cluster of commercial buildings along the railroad right-of-way until 1914 when the Los Angeles Aqueduct was completed. This water source enabled the Antelope Valley to expand its agricultural base and by 1919 the population had grown to 11,900. Between 1914 and World War II agriculture was the dominant economic activity in the Antelope Valley. After World War II, the Valley became one of the major centers for the aerospace and defense industries especially with the establishment of Edwards Air Force Base and Air Force Plant 42.

A number of homestead entries were encountered for various portions of the project site. There was not information at the city, county or federal level to indicate that there was not any formal occupation of Section 2 during the historic period — either through homestead, mining claim or minerals rights.

The following archaeological investigations were conducted for the project site: (1) standard archaeological records check; (2) review of McKenna et al. in-house records; and (3) survey of project area not surveyed earlier. Historic investigations were also conducted through research at the Bureau of Land Management and the Palmdale Public Library. A paleontological investigation of the project site was also conducted by a certified vertebrate paleontologist per City of Palmdale requirements. As a result of these investigations, McKenna et al. identified two prehistoric isolates, no significant historic remains and no evidence of paleontological resources.

The prehistoric isolated finds were identified during the course of the survey within Section 2. Isolate No. 1 was located approximately 80 meters west of 10th Street East and 220 meters south of Avenue M. The article was identified as a projectile point measuring 8.5 cm x 2.5 cm x .5 cm that was manufactured from a grey cryptocrystalline material. The point yielded evidence of flaking and the base appeared to be broken and reworked. The size of the flake indicates a shaft larger than a typical bow and arrow projectile but not large enough for a spear or knife blade. The size and shape of the flake suggests that is from the Vanyume occupation of the late Gypsum or early Saratoga Springs period. However, because the base has been reworked, no true diagnostic assignment can be determined. The point was found at the surface level and since no archaeological context is therefore available, it has no archaeological significance. It is therefore not eligible for nomination to the National Register of Historic Places. The article was not collected and no additional mitigation measures are necessary.

The second isolate was also identified southwest of the intersection of Avenue M and 10th Street East. The item was a small scraper that was manufactured from a brown cryptocrystalline. It measured 4.0 cm x 3.0 cm x .75 cm. Two utilized edges were noted on this artifact. The location of the find and the lack of archaeological context made it impossible to assign this artifact to any particular time period. It was determined to be ineligible for nomination to the National Register of Historic Places and no mitigation measures are necessary. No other significant historic or paleontological resources were identified at the project site.

3.12.2 Project Impacts

Significant impacts to cultural resources are those that have adverse impacts on qualities and characteristics that make a prehistoric or historic resource eligible for inclusion in the National Register or that makes a site important to contemporary Native American groups. No significant paleontological, prehistoric or historic resources were identified at the project site. There is always the potential for buried or, as yet, unidentified resources. As a result the recommendations contained in the following section should be followed.

3.12.3 Mitigation Measures

The following measures are recommended to be followed during project development:

- #57 No archaeological monitoring is recommended at this time. The proponent of the proposed project should, however, be prepared to permit a certified and qualified archaeologist to evaluate any prehistoric or historic resource which may be uncovered or otherwise identified as a result of any project within the current study area.
- #58 The evaluation process must conform to the requirements and guidelines for Phase II evaluations of prehistoric and/or historic resources, as presented in CEQA.
- #59 Upon completion of any evaluation (Phase II) the proponent must be prepared to forward the data through the Office of Historic Preservation for review and, if necessary, commit to a Phase III mitigation of impact study, should any resource be identified as significant or potentially eligible for nomination to the National Register of Historic Places.
- #60 No paleontological monitoring is necessary at this time. The proponent should, however, be prepared to permit recovery and evaluation of any paleontological resources identified during future activities within the project area.
- #61 The paleontologist must have the authority to halt any activities which are adversely impacting potentially significant or eligible resources.
- #62 Any paleontological specimens recovered from the property must be professionally handled, cleaned, analyzed, and curated.

- #63 All studies subsequent to this Phase I investigation must be professionally presented in a technical report, which in turn, will be made available for review at the appropriate repository (e.g., UCLA or the Los Angeles County Museum).
- #64 If resources are uncovered during any ground alteration activities, an archaeological and/or paleontological monitoring program should be established to prevent adverse impacts to additional resources.

3.12.4 Impacts After Mitigations

The cultural resource impacts of the proposed project are not considered significant.

3.13 AESTHETICS AND VISUAL QUALITY

3.13.1 Existing Conditions

3.13.1.1 General Visual Setting

The proposed Project is located on a 632-acre parcel located immediately east of the Sierra Highway and the Southern Pacific Railroad, bounded by Avenue M to the north, Avenue M-12 to the south and 15th Street East to the east. The Project is located in the northeastern part of the City of Palmdale. The City of Lancaster is immediately to the northwest of the Project. The site is flat to slightly rolling with a gentle slope to the northeast. The site is covered with low-lying desert scrub-brush, with irregular stands of Joshua trees (Figure 3.13-1). The site is crossed with several dirt access roads. Refuse has been dispersed in various areas throughout the project site (Figure 3.13-2).

The site is currently undeveloped. Three water storage tanks are located immediately south of Avenue M, half-way between Sierra Highway and Challenger Way. These are owned by the Los Angeles County Waterworks Department, and are not part of the project. No significant aesthetic resources are located on the site.

3.13.1.2 Adjacent Development Patterns

Directly to the south, and to the east of the project is the US Air Force Plant 42 facility. Immediately to the west of the project, abutting Avenue M and Sierra Highway are several developed light industrial/commercial land uses (Figure 3.13-3). The area south of these land uses, and west of Sierra Highway are currently zoned for industrial land uses but are currently undeveloped. To the north of the project, east of Challenger Way, the area is zoned for industrial land uses and is undeveloped. To the north of the project, west of Challenger Way, there are several sparsely developed parcels, including a mini-storage facility. It appears that surrounding vacant land will be developed as light industrial and manufacturing uses.

3.13.1.3 Views and Scenic Quality

Distant views of the north slopes of the San Gabriel Mountains are discernable to the south of the project (Figure 3.13-4). The USAF Plant 42 and the Lockheed facility is situated in the line-of-sight between the project site and the San Gabriel Mountains. No other significant aesthetic resource is within visual proximity of the project site.

3.13.1.4 Sensitive Receptors/Key Observation Points

The aviation operations of the USAF Plant 42 and the Lockheed facility have been identified as visual receptors of possible light and glare impacts. No other key observation points or sensitive receptors have been identified.

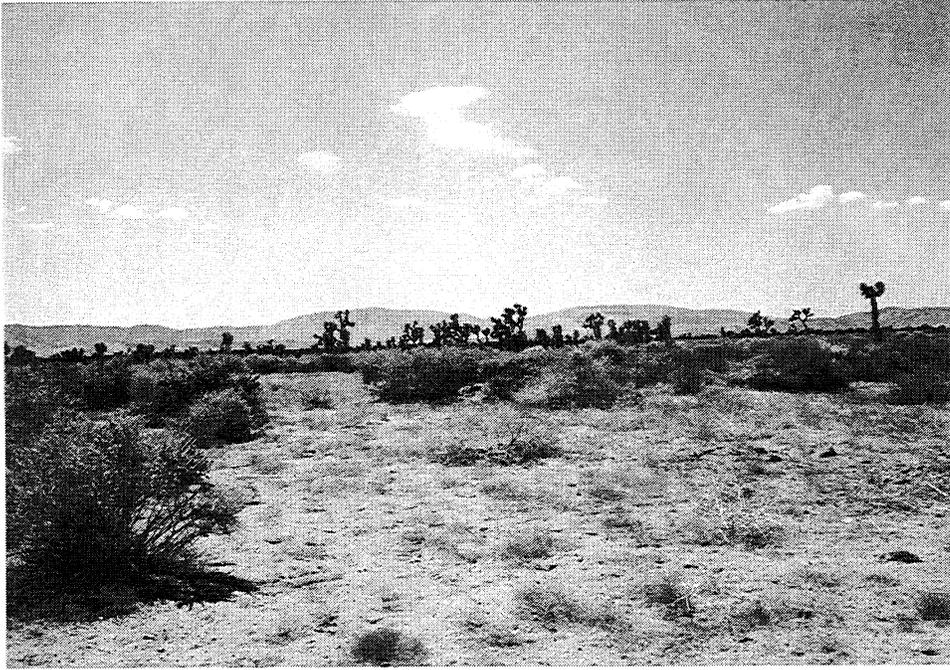


Figure 3.13-1: PROJECT SITE

URS
Consultants



Figure 3.13-2: REFUSE DISPOSED AT PROJECT SITE

URS
Consultants

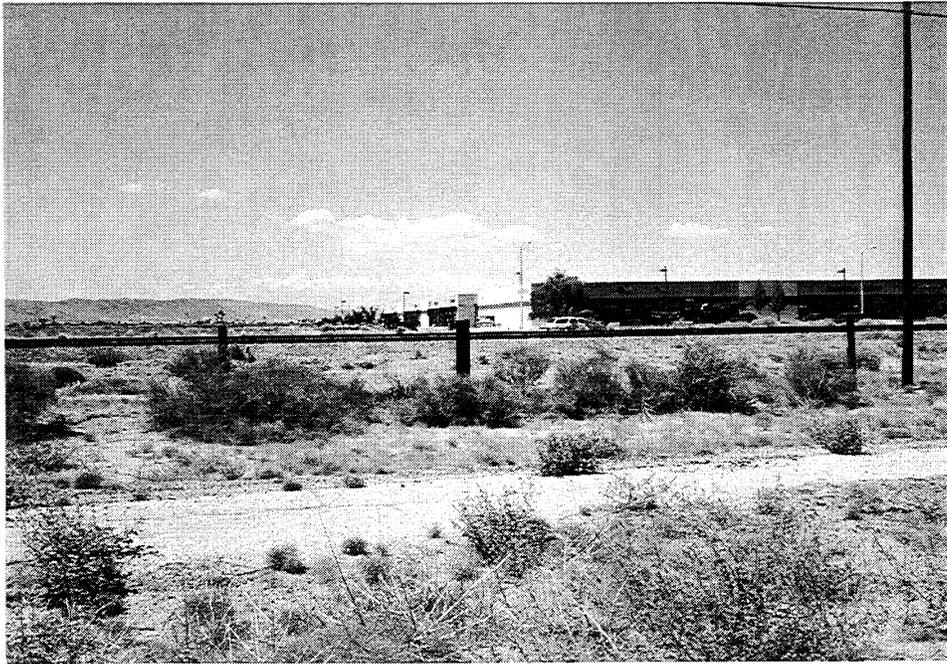


Figure 3.13-3: ADJACENT LAND USES AT AVENUE M AND SIERRA HIGHWAY

URS
Consultants



Figure 3.13-4: SAN GABRIEL MOUNTAINS TO THE SOUTH
(USAF Plant 42 Facilities in the Foreground)

URS
Consultants

3.13.1.5 Applicable Goals and Policies

The Palmdale Business Park Center Specific Plan outlines the development standards which will be implemented throughout the project. These standards include standards for building height, setbacks, landscaping, building materials, signage, and lighting. These standards are subject to the approval and revision by city officials.

3.13.2 Project Impacts

3.13.2.1 Methodology

Impacts of the Project on visual quality were determined by assessing the Project's compliance with design standards established by the City of Palmdale, and by analyzing the relationship between the adjacent land uses and three key design features for each site. These key design features include the following:

- Building height, massing and materials
- Landscape transition and planting
- Lighting and glare

In accordance with CEQA guidelines and for the purposes of this EIR, impacts are considered significant if one or more of the following conditions would result from implementation of the proposed Project.

- Conflict with any of the City of Palmdale design guidelines related to building height, massing, materials, and landscaping.
- Alter the existing character of the site.
- Compromise the preservation of views.
- Produce light or glare which may impact adjacent uses.
- Result in substantial, demonstrable negative aesthetic effect.

3.13.2.2 Impacts

The proposed Palmdale Business Park Center could potentially conflict with the design guidelines set forth by the City of Palmdale.

The Palmdale Business Park Center will be developed in accordance with the design guidelines established in the specific plan. These specific plan guidelines are not in conflict with City of Palmdale design regulations. This is a less-than-significant impact.

The proposed project would alter the existing character of the land.

The proposed project involves the transition of undeveloped land into developed light industrial, manufacturing, office and open space. This transition will significantly and permanently alter the existing character of the site. This is a significant impact, although not necessarily adverse.

The proposed project could compromise the preservation of significant visual resources, depending on the number of Joshua Trees that would be removed. However, no structure within the specific plan area will exceed the height of current Lockheed B-2 Assembly Building.

The proposed project will be massed in a manner which will not screen land uses to the north from long-range views of the San Gabriel Mountains. This is less-than-significant impact. No other significant viewsheds are near the site.

The proposed project could produce light and glare which impacts surrounding land uses.

As stated in the specific plan, all exterior and interior lighting will be designed and located to confine direct illumination to the premises. In addition, a photometric plan will be produced in accordance with Section IV, G-9 of the specific plan. This is a less-than-significant impact.

The proposed project could result in a demonstrable negative aesthetic effect.

With implementation of the development standards outlined in the Palmdale Business Park Center Specific Plan, there will not be significant and demonstrable negative aesthetic impact.

There has also been concern that the proposed project will impact the aviation operations at the USAF Plant 42 facility. The specific plan states that the buildings will not exceed Federal Aviation Administration Part 77 guidelines.

3.13.3 Mitigation Measures

As long as the project is developed in accordance with the development standards outlined in the specific plan, this will continue to be a less-than-significant impact. No mitigation measures are required.

Although development of the project will permanently alter the visual setting of the land, building massing, colors and design characteristics will minimize the impact to the extent possible. Surrounding development patterns will continue to create similar land uses on adjacent properties. This impact will continue to be significant.

No significant visual resources are compromised. No mitigation measures are required.

As long as the development standards outlined in the specific plan are implemented in regard with light and glare, and that FAA regulations regarding development specifications are maintained, this will be a less-than-significant impact. No mitigation measures are required.

No demonstrable negative impact will result from the development of this project. No other mitigation measures are required.

The following mitigation measure is recommended:

- #65 Future development within the specific plan area should provide view corridors to the golf course.

3.13.4 Impacts After Mitigations

The aesthetics impacts of the proposed project are not expected to be significant after the recommended mitigation measures are implemented.

4. ALTERNATIVES

The California Environmental Quality Act (CEQA) requires discussion of reasonable project alternatives that could feasibly obtain the project's basic objectives. In addition, the No-Project Alternative must be addressed. Legal precedents (County of Inyo vs. City of Los Angeles)(3d Dist. 1977) 71 Cal. App. 3d 185, 201 [139 CalRptr. 396,407] indicate that the No-Project Alternative is best described as a continuation of the condition or program that preceded the project. CEQA requires that the EIR describe a range of reasonable alternatives to the proposed project, or to the location of the project. The comparative merits of each alternative must be evaluated. A range of alternatives is required to the extent that a reasonable choice is possible and informed decision making and public participation is fostered.

The following alternatives are evaluated in this section:

- Alternative 1 -- No-Project Alternative;
- Alternative 2 -- Project Site: Elimination of Golf Course;
- Alternative 3 -- Offsite Alternative; and
- Alternative 4 -- No-Development Alternative.

Each of the following sections begins with a brief discussion of the alternative. This is followed by an analysis of the substantial changes in impacts that would occur under the alternative as compared with the proposed project. The final subsection discusses the project impacts which would change little due to any of the alternatives. Table 4-1 shows a comparison of impacts among all the alternatives.

4.1 ALTERNATIVE NO. 1 -- NO-PROJECT ALTERNATIVE

Under Alternative 1, the proposed Specific Plan would not be adopted, and development on the project site would be regulated by the City's General Plan and Zoning Ordinance. Development could occur under Alternative 1 similarly to that proposed under the Specific Plan project, but development of the area would proceed without the coherence and comprehensive planning that are implicit under the Specific Plan project. The area would lack a master plan for infrastructure, including new roadways and utility services. Additionally, short-term land use interface problems such as parcelization, shared uses, aesthetic and usage compatibility among developments would need to be addressed on a project by project basis. This could result in a lessened overall attractiveness to the site by potential developers and operators. Consequently, the timeframe for full development of the site could be extended beyond both the General Plan buildout timeframe and the buildout period proposed by the Specific Plan project.

Alternative 1 would allow development based on an even distribution of the industrial and airport-related land use designations found on adjacent and nearby properties. Golf courses would continue to be an allowable land use for industrial areas that have limited development opportunities due to excessive aircraft noise levels. As such, Alternative 1 is analyzed with the golf course as proposed for the Specific Plan project. Alternative 1 would exclude commercial and business park

Table 4-1
COMPARATIVE SUMMARY OF IMPACTS

Issue/Resource	Proposed Project	Alt. 1 No-Project	Alt. 2	Alt. 3	No-Development
Geology and Soils	2	2	2	2	1
Air Quality	3	3	2	2	1
Water Resources	3	3	3	3	1
Biological Resources	3	3	2	3	1
Land Use	3	3	3	3	1
Socioeconomics	B	B	B	B	
Buildout Population	16,176	17,918	16,346	17,822	0
Housing	4,475	4,977	4,522	4,930	0
Employment	10,110	11,199	10,216	11,139	0
Transportation	2	2	2	2	1
Public Services					
Fire Protection	2	2	2	2	1
Law Enforcement	2	2	2	2	1
Education	2	2	2	2	1
Public Utilities					
Water Distribution	2	2	2	2	1
Wastewater	1	1	1	1	1
Solid Waste	2	2	2	2	1
Electricity	1	1	1	1	1
Natural Gas	1	1	1	1	1
Telephone	1	1	1	1	1
Cable Television	1	1	1	1	1
Hazardous Materials	2	2	2	2	1
Noise	2	2	2	2	1
Cultural and Paleontological Resources	1	1	1	1	1
Aesthetics*	2	2	2	2	1

Note: * Impacts in this category are not necessarily adverse.

Beneficial Impacts: B

Types of Impacts:

- 1=Insignificant
- 2=Significant, Avoidable
- 3=Significant, Unavoidable

development as inconsistent with the General Plan land use designations (Industrial and Airport-Related) that would be applied to the area.

Under Alternative 1, 344 acres of the project area would be developed with industrial and airport-related uses (see Table 4-2). Assuming a 35 percent building coverage for industrial uses and a 45 percent building coverage for airport-related uses, a total of 5,991,013 square feet of building space would be developed. A total of 75 percent of this space (4,493,260 ft²) would be used for industrial purposes while 25 percent of the space (1,497,753 ft²) would be devoted to office uses. This alternative would support a total of 11,199 (including 43 persons for the golf course). It would result in approximately 1,089 more jobs than the Specific Plan project at the point that area buildout is achieved.

Table 4-2
DEVELOPABLE BUILDING AREA AND EMPLOYMENT ANALYSIS
ALTERNATIVE 1

Land Use	Acres	Building Cover (%)	Gross Building Area (ft ²)	Employment
Industrial	171.92	35	2,621,068	4,881
Airport-Related	171.92	45	3,369,945	6,275
Golf Course Employment				43
TOTAL				11,199

Geology and soils, biological resources, cultural and paleontological resources, and aesthetic impacts of Alternative 1 are anticipated to be similar to those of the Specific Plan project as the land use designations would permit similar land uses (except commercial and business park developments) as the Specific Plan project. However, buildout of the site may be slower and/or more costly with this alternative as adequate parcel assemblage would have to be accomplished, and more individual plans and associated environmental documents would need to be prepared.

Both short-term and long-term significant emissions are expected to result from the development of Alternative 1, similar to that anticipated for the Specific Plan project. Significant emissions for ROC and NOx are expected to be generated under this alternative. The primary long-term operational impacts that will result from mobile source emissions for travel to and from work sites that develop in the area are slightly greater than for the Specific Plan project, owing to the increase in workforce and the lack of nearby commercial opportunities.

Both direct and indirect water resources impacts of Alternative 1 will be similar to the Specific Plan project because the development patterns and indirect impacts such as population growth are anticipated to be similar at buildout of the site. Alternative 1 would still have a significant water resources impact.

4.2**ALTERNATIVE NO. 2 -- ELIMINATION OF GOLF COURSE**

Under Alternative 2, all of the proposed land uses would be the same as under the proposed project with one exception. Alternative 2 would replace the golf course with open space uses. This alternative would result in the same square footage of building coverage as under the proposed project (see Table 4-3). The total employment would be 10,067 (43 lower than the proposed project) since the golf course would not be constructed.

Table 4-3
DEVELOPABLE BUILDING AREA AND EMPLOYMENT ANALYSIS
ALTERNATIVE 2

Land Use	Acres	Building Cover (%)	Gross Building Area (SF)	Employment
Community Commercial	61.42	24	642,109	2,335
Airport Related	87.92	45	1,723,408	1,981
Business Park	26.15	30	341,728	1,123
Light Industrial	165.61	35	2,524,890	4,628
Total (w/o Golf Course)	341.10		5,232,135	10,067
TOTAL				10,067

Alternative 2 would have the same development intensity as the proposed projects and most of the impacts would be similar. The replacement of the golf course with open space uses would reduce impacts in three areas: water resources, biological resources, and cultural and paleontological resources. Since the golf course would not be developed, water demand under this alternative would be reduced by a minimum of 611 acres-ft/year. Biological impacts would be lower since there would be less disturbance to the Joshua Tree and desert scrub habitat. However, this alternative results in the loss of recreational benefits associated with the proposed golf courses.

4.3**ALTERNATIVE NO. 3 -- OFFSITE ALTERNATIVE**

Alternative 3 is the offsite alternative which would involve the development of a project with a land use mix similar to the proposed project at an alternative location. The site selected for this alternative includes 442 acres of land in the unincorporated portion of Los Angeles County that is owned by the City of Los Angeles Department of Airports. The land is located (see Figure 4-1) between 15th Street East and 25th Street East and between Avenue P and Avenue P-12. The City of Los Angeles Department of Airports issued a Request for Proposal (in March 1991) for a developer to develop the property under a 50-year lease arrangement. The Department of Airports wanted a development that would consist of commercial and industrial activities compatible with Air Force Plant 42, Los Angeles County, and the proposed Palmdale Regional Airport. The three main objectives of the project were to: (1) generate the maximum amount of revenue for the City of Los Angeles; (2) create the maximum amount of new jobs in the Antelope Valley; and (3) create

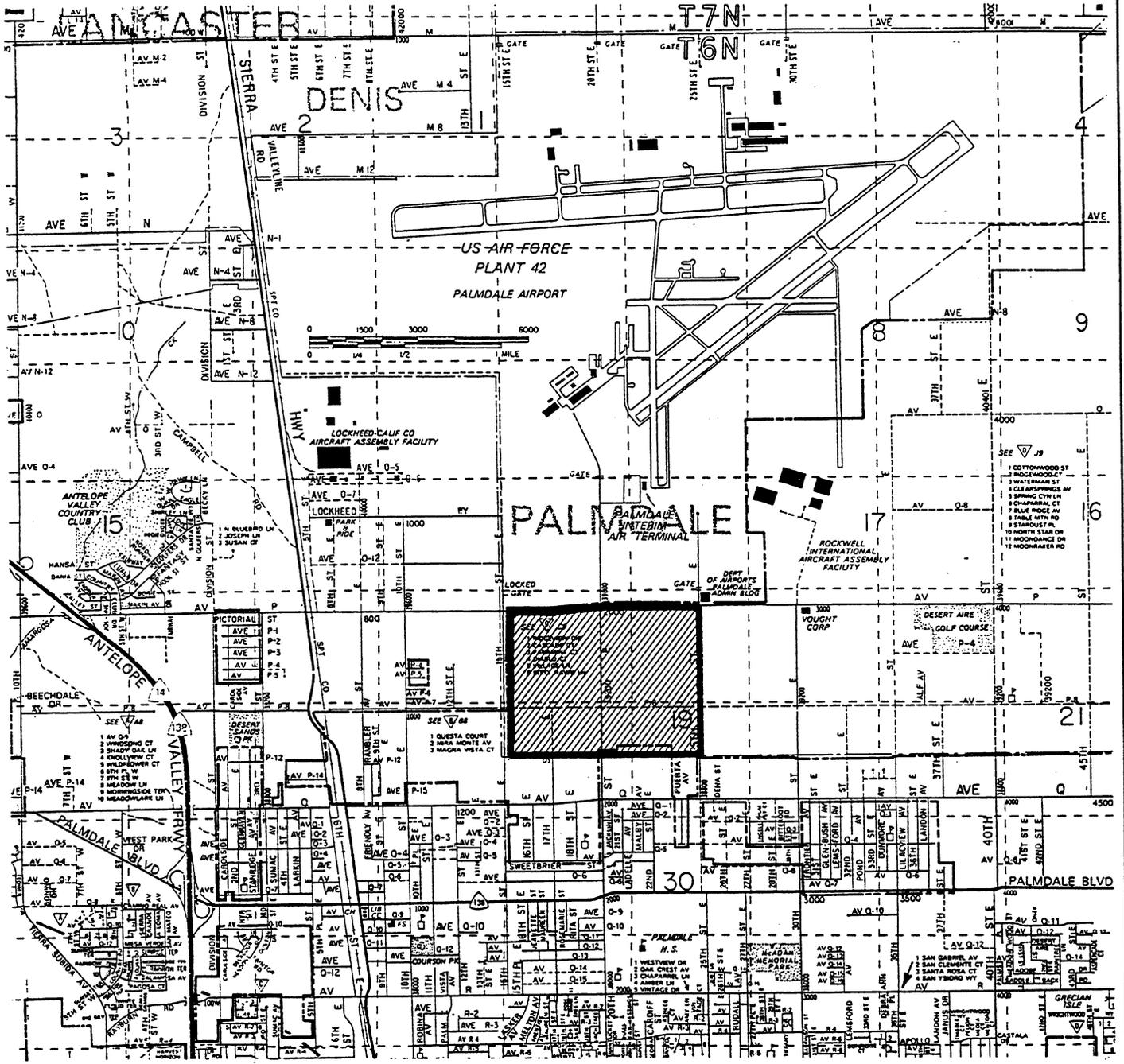


Figure 4-1: ALTERNATIVE 3 LOCATION



the most attractive development possible. The Department of Airports did not receive any responses to their RFP and the property has not yet been developed.

It was assumed for analytical purposes that Alternative 3 would have the same mixture of land use as the proposed project with one exception. Since the available land area is considerably smaller it was assumed that this alternative would not include a golf course. As a result, Alternative 3 (see Table 4-4) would include 67.18 acres of community commercial development, 96.80 acres of airport-related development, 28.73 acres of business park, and 182.11 acres of light industrial uses. There would also be 6.63 acres of open space and a total of 60.55 acres that would be devoted to street right-of-way. This scenario would result in the development of 5,751,694 square feet of building space and the creation of 11,139 jobs. This is 1,029 more jobs than would be created under the proposed project.

There would be a substantial difference in the impacts that would be expected between Alternative 3 and the proposed project. This is due to the different site characteristics of this particular location as well as the higher intensity of development with its associated direct and indirect impacts.

Table 4-4
DEVELOPABLE BUILDING AREA AND EMPLOYMENT ANALYSIS
ALTERNATIVE 3

Land Use	Acres	Building Cover (%)	Gross Building Area (SF)	Employment
Community Commercial	67.18	24	702,327	2,554
Airport Related	96.80	45	1,897,474	2,181
Business Park	28.73	30	375,444	1,2345
Light Industrial	182.11	35	2,776,449	5,170
Total (w/o Golf Course)	374.82		5,751,694	11,139
TOTAL				11,139

Tables 4-5 and 4-6 indicate that construction and operation emission under Alternative 3 would be higher than under the proposed project. Significant ROC and NOx impacts would occur during construction and significant mobile source emission could be generated for ROC, NOx, and CO. The mobile source emission are not directly comparable due to the lack of specific trip generation information for Alternative 3.

Impact to geology and soils would differ from the proposed project due to variations in slope that are encountered in the alternative location. Seismic impacts should be similar to what would be experienced with the proposed project. Water resources impacts would be lower due to the lack of a golf course at the alternative site. There would also be differences in the water distribution systems serving the site. There would also be differences in drainage pattern between the sites. The impacts to the regional groundwater supply would remain significant.

Table 4-5
AIR QUALITY IMPACTS FROM CONSTRUCTION OF ALTERNATIVE 3 (pounds per day)

Land Use	1,000 SF	ROC	NOx	CO	PM10
Community Commercial	702.3	8.6	125.7	27.3	8.9
Airport Related	1,897.5	23.8	350.3	76.2	24.9
Business Park	375.4	8.0	117.2	25.5	8.3
Light Industrial	2,776.5	40.9	601.2	130.7	42.7
Total Daily Emissions*		124.0	1,194.4	259.7	84.8
Significance Threshold		75.0	100.0	550.0	150.0
Significant ?		Yes	Yes	No	No

Note: * Assumes 2 years with 261 days per year to construct = 522 days.

Table 4-6
SUMMARY OF MOBILE SOURCE EMISSIONS FROM ALTERNATIVE 3

2021	Pollutant (lbs/day)			
	ROC	NOx	CO	PM10
Community Commercial	1,397.6	287.9	10,941.8	133.4
Airport Related	379.5	227.7	3,738.1	38.0
Business Park	150.2	86.3	1,479.1	11.3
Light Industrial	555.3	333.2	5,469.7	55.5
Total Daily Emissions	2,482.6	935.1	21,628.7	238.2
Significance Threshold	75.0	100.0	550.0	150.0
Significant?	Yes	Yes	Yes	No

The types of vegetation and wildlife at the site of Alternative 3 are likely to differ from what is encountered at the project site. There is likely to be different densities of Joshua trees and other biological sources. Since there appears to be more existing disturbance (including a number of existing buildings), impacts on biological resources are likely to be lower. In addition, since the alternative location only contains 442 acres, the total amount of disturbed area will be lower. The smaller size of disturbed area will also have a corresponding impact on cultural and paleontological resources. The significance of the impact will depend on the existence of significant cultural resources at this alternative location.

The proposed land use under Alternative 3 is consistent with development trends in the area. It is also adjacent to USAF Plant 42 which will facilitate the development of airport-related industries. The socioeconomic impact of this alternative will be greater since more employment would be generated and indirect population and housing impacts would be higher. This alternative would be likely to generate more trips than the proposed project. The significance of the impact would depend on existing level of service at intersections in the vicinity of this alternative location. Primary east-west access to Sierra Highway and Highway 14 would be through Avenue P. Primary access to Route 138 would be through 20th Street East. The higher levels of employment, population and housing under Alternative 3 would result in a higher demand placed on public services and utilities compared to the proposed project. The hazardous materials impacts would be higher than the proposed project since a larger acreage would be devoted to airport-related industries. Noise impacts would be closely related to landing patterns at USAF Plant 42 as well as development of the Palmdale Regional Airport. The higher level of traffic generated under Alternative 3 would result in slightly higher noise levels than under the proposed project. Aesthetics impacts would be similar to the proposed project.

4.4 ALTERNATIVE NO. 4 -- NO-DEVELOPMENT ALTERNATIVE

The No-Development Alternative is the continuation of the vacant and relatively undisturbed nature of the project area. This assumes that indeterminable actions by either private or governmental parties would effectively preclude future development of the site.

A number of significant environmental impacts of the proposed project would be avoided by the implementation of Alternative 4.

Alternative 4 would avoid significant impacts to the geology and soils of the project site. No structures would be built and therefore seismic impacts would be avoided. Since the project site will not be graded, no fugitive dust or PM10 emissions would be generated.

The selection of the No-Development Alternative would also avoid impacts to the water resources of the area. Concerns regarding drainage of the project site and increased water use will be avoided.

A major impact that will be avoided by Alternative 4 is increased traffic. Additionally, the significant air quality and noise impacts related to the increased traffic would also be avoided.

Although the No-Development Alternative would require occasional response from fire and police agencies, it is anticipated that these occurrences would have an insignificant impact upon public services and utilities.

Since the No-Development Alternative would leave the site as is, there would be no significant development-related impacts on native plant and wildlife species that may occur on the site. Likewise, this alternative would minimize any aesthetic impacts to the area.

No additional energy would be consumed at the project site. Consequently, any impact on energy uses would be avoided.

Conversely, the beneficial socioeconomic impacts associated with job creation, such as trip reduction and vehicle miles travelled (VMT) for commuters, positive job/housing balance ratio, and new economic development opportunities would be lost under this alternative. Furthermore, the No-Development Alternative would conflict with those portions of the General Plan that encourage the City to capitalize on the development potential provided by the airport and by the advanced technology activities proximate to the site.

4.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an environmentally superior alternative be identified. If the environmentally superior alternative is the No-Development Alternative, the EIR shall identify an environmentally superior alternative among the other alternatives. In this case, Alternative 2, which would eliminate the golf course and replace it with open space uses, would be environmentally superior. This alternative would have the same development intensity as the proposed project and most of the impacts would be similar. The direct employment impacts and the indirect population and housing impacts under Alternative 2 would be slightly lower than under the proposed project. Since there would be no golf course, 43 fewer jobs would be generated. Population and housing impacts would be reduced accordingly.

The environmental impacts of Alternative 2 would be considerably lower than the other alternatives in two main areas: water resources and biological resources. Since the golf course would not be developed, water demand under this alternative would be reduced by 611 acre-ft/year. As a result water resources impacts would still be considered significant, unavoidable but less severe than under the other alternatives.

The other impact category in which Alternative 2 is environmentally superior to the other alternatives is biological resources. Since the area proposed for golf course uses would not be developed, impacts to biological resources would be considerably lower. A total of 227 fewer acres would be disturbed. As a result there would be less disturbance to the Joshua tree and desert scrub habitat. Impacts to biological resources would be significant, avoidable. By contrast the impacts to biological resources under Alternatives 1 and 3 would be significant, unavoidable.

The reduced level of disturbance under Alternative 2 would also result in fewer potential adverse impacts to cultural and paleontological resources.

The environmental impacts of Alternative 2 would be similar to the other alternatives in the following categories: geology and soils, air quality, land use, transportation, public services, public utilities, hazardous materials, noise and aesthetics.

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5. LONG-TERM IMPACTS

5.1 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

The proposed Palmdale Business Park Center Specific Plan will result in a number of minor short-term impacts. Short-term in this instance refers to the period in which the project is under construction. Some of the short-term impacts include:

- Increased generation of dust and local emissions of air pollutants;
- Increased noise from construction equipment;
- Change of traffic flow from road improvements and utility construction; and
- Temporary degradation of visual quality occluded by dust.

The long-term effects of the proposed project include environmental changes as well as increased productivity of the existing land use. Some of these environmental impacts include increased traffic, increased stationary and mobile source emissions, increased noise, and increased demand for public services and utilities.

These environmental impacts may be offset by various long-term benefit to the City of Palmdale. Some of these benefits include increased local employment and increased local revenue. The project will provide a land use which is consistent with the development pattern in the surrounding area, and will result in over 10,000 jobs at buildout.

5.2 UNAVOIDABLE ADVERSE IMPACTS

The Palmdale Business Park Center Specific Plan would result in unavoidable significant impacts in two resource areas: water resources and biological resources.

The direct and indirect water demands resulting from the project would place additional demands on the limited groundwater resources of the area. Overall direct and indirect water demands of the project would be 5,700 acre-feet per year. On the order of one-half or 2,850 acre-ft/year could be withdrawn from the groundwater basin. Given the long history of overdrafting and large groundwater declines historically experienced in the Basin, the project is judged to have a significant groundwater impact. Until a regional groundwater management plan is implemented, substantial additional water demands, such as that represented by the proposed project, will continue to have significant groundwater impacts.

Construction activities associated with the proposed project would significantly impact biological resources causing the loss of high quality desert scrub vegetation, approximately 3,000 Joshua trees and potential sensitive species habitat. Removal of these native plant communities would also displace wildlife at the project site (particularly the loggerhead shrike and horned lark). Biological resources would be minimized but not avoided by the implementation of a variety of mitigation measures.

5.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed project would require the irreversible and irretrievable commitment of various finite resources. These include energy, land and biological habitat. The development of the Palmdale Business Park Specific Plan will result in the commitment of 632 acres of land to urban uses. The materials and fossil fuels necessary for construction of new development and roadway improvements associated with the project represent additional resource commitments.

Nonrenewable resources would be committed during the initial and continued phases of plan implementation. The commitment of these resources to the development of the Palmdale Business Park Center Specific Plan is irreversible, and will lead to the incremental reduction of these finite resources.

5.4 CUMULATIVE IMPACTS

CEQA requires that the cumulative impacts of the proposed project be addressed in an EIR when they are expected to be significant. Cumulative impacts are defined in Section 15355 of the CEQA Guidelines as the *"changes in the environment which result from the incremental impacts of the project when added to other closely related past, present and reasonably foreseeable probable future impacts ..."* A primary purpose of this section is to identify impacts that may be declared insignificant when analyzed by themselves, but are significant when viewed in conjunction with impacts generated by similar projects.

The Palmdale Business Park Center Specific Plan would result in a 632-acre development with over 5,000,000 square feet of building space. The project would result in a direct employment increase of 10,110 employees and an indirect population increase of 16,176 new residents. In the vicinity of the proposed project area are a number of major specific plans that will result in a substantial amount of commercial and industrial development. Adopted or proposed specific plan areas in the vicinity of the proposed project include: (1) Palmdale Trade and Commerce Center Specific Plan; (2) Lockheed Specific Plan; (3) Antelope Valley Business Park Specific Plan; and (4) Auto Center Specific Plan. Expansion of operations at USAF Plant 42 and Palmdale Regional Airport will also contribute to growth in the area. These four projects contain over 1,000 acres of land that are intended for commercial and industrial purposes. They could generate an additional 30,000 jobs (based on similar land use patterns to the Palmdale Business Park Center Specific Plan). These projects when combined with the employment generated by the Palmdale Business Park Center Specific Plan would result in over 40,000 new jobs.

The growth will have a significant cumulative effect in the areas: air quality, water resources, biological resources, transportation, and noise. Development of the Palmdale Business Park Center Specific Plan and related projects will result in increased air emissions in the region. The proposed commercial and industrial development will result in an increase in emissions that cannot be reduced to a level of insignificance. The increase in emission sources will contribute to the production of ozone in the desert area which is currently a receptor of emissions from Southern Los Angeles County. Implementation of the Air Quality Management Plan is expected to reduce the levels of ozone transported to Palmdale. However, cumulative air quality impacts cannot be mitigated to a level of insignificance.

The Palmdale Business Park Center Specific Plan and related projects are expected to significantly increase the demand for water. Direct water demands from these projects could total up to 4,000 acre-ft/year at buildout depending on their land use mix and intensity of development. There would also be indirect demands on the water supply from population moving into the area to take advantage of employment opportunities.

Two golf courses currently exist within the City. One is a private 18-hole course, the other is a public 9-hole course. Two other proposed golf courses have been conceptually approved by the City within adopted Specific Plans (City Ranch and Ritter Ranch). An additional golf course development holds discretionary entitlements, but has not been built (Rancho Vista). A sixth course is proposed as part of the College Park Specific Plan, currently under review by the City. Therefore, the proposed golf course within this project represents the seventh potential golf course in the City of Palmdale.

Assuming that each of these golf courses would consume an average of 780 acre-feet (225 acres to 3.5 acre-ft water use per year), up to 5,460 acre-feet of water would be committed annually to the seven golf course operations. This would represent almost 55 percent of the projected 10,000 acre-feet of Palmdale commercial water demand, and 5.4 percent of projected total water demand for all Palmdale urban water users by the year 2020 (Kennedy/Jenks, Antelope Valley Water Group, Antelope Valley Water Resources Study, Draft, August 1994).

The water supply for these users would logically be provided from either or both of the current sources for local urban water consumption. These water sources are from groundwater withdrawal through the Lancaster or Pearland Subbasins of the Antelope Valley Groundwater Basin, and from imported water supplied from the State Water Project and purchased through the Antelope Valley East Kern Water Agency (AVEK) as part of its variable annual delivery entitlement. Treated wastewater is not considered to be a feasible water supply source at this time because the system development costs for bringing treated wastewater to these individual users are prohibitive. Therefore, the cumulative impact on the total available water supply to the Antelope Valley that would be devoted for this relatively limited purpose is significant.

The proposed and related projects represent a substantial urbanization of the Antelope Valley. As a result of this urbanization, the conservation of ecological communities will become more difficult and ecological systems could be destroyed. These cumulative impacts can be reduced by mitigation (such as the City of Palmdale native desert vegetation ordinance), but not to a level of insignificance. Strong mitigation measures will be required to keep development away from sensitive desert species habitat.

The cumulative impacts of the Palmdale Business Park Center Specific Plan and related projects will increase traffic volumes throughout the Antelope Valley. Development will result in significant traffic impacts at several street segments and intersections. This is because they will operate at unsatisfactory levels of service even after the adoption of all available mitigation measures. Developers will be required to pay their fair share toward transportation improvements and to implement Transportation Demand Management (TDM) programs.

Cumulative development of the proposed and related projects will increase ambient noise levels in the City of Palmdale and the Antelope Valley. The impacts are likely to be greatest along

transportation corridors and in airport noise areas. This is especially true with development of the new Palmdale Regional Airport. Quieter generations of future aircraft coupled with designation of non-sensitive land uses such as rural open space or industrial underneath the runway approaches will avoid serious noise impacts.

6. GROWTH INDUCEMENT

Growth inducement can be broadly defined as any action or circumstances producing growth in excess of projections made by local jurisdictions or regional association of governments which substantially accelerate projected growth in the area. CEQA requires that an EIR discuss whether a proposed project will induce direct or indirect growth in population, economic development or housing construction (Public Resource Code Section 21100; CEQA Guidelines Section 15126[g]).

The Palmdale Business Park Center Specific Plan is expected to result in over 5,000,000 square feet of industrial and commercial building space and over 10,110 additional jobs by project buildout in the year 2021. It would result in an indirect population increase of 16,176. These employment and population increases are consistent with the current and planned development pattern of the area. The Southern California Association of Governments (SCAG) recently adopted a new Regional Comprehensive Plan (RCP) forecast. In this forecast the Antelope Valley is included in the North Los Angeles subregion. Population, housing and employment projections for this subregion are presented in Table 6-1.

Table 6-1
REGIONAL COMPREHENSIVE PLAN FORECAST FOR
NORTH LOS ANGELES COUNTY SUBREGION

1990			2000			2010		
Population	Housing	Employ	Population	Housing	Employ	Population	Housing	Employ
283,000	99,000	88,000	612,000	191,000	183,000	961,000	306,000	262,000

Source: SCAG Draft Regional Comprehensive Plan Base Forecast, December 1993.

The Regional Comprehensive Plan projects an increase of 174,000 jobs during the 1990-2010 period. The Palmdale Business Park Center Specific Plan would add 6,150 jobs by the year 2010 (based on a straight-line projection). This represents 3.5 percent of the total employment growth expected in the subregion during the period. The proposed project by 2010 is also expected to result in a population increase of 9,855 and a housing increase of 2,730 units. This represents 1.5 percent of the population growth and 1 to 3 percent of the housing growth during the period.

Overall the employment and population generated by the Palmdale Business Center Specific Plan is consistent with regional growth projections. The proposed project is consistent with proposed land uses in the City of Palmdale General Plan. As a result, the Palmdale Business Park Center Specific Plan by itself cannot be considered growth inducing.

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**PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
MITIGATION MONITORING AND REPORTING CHECKLIST**

Mit/Cond No.	Mitigation Measures/Condition of Approval	Monitoring and Reporting Process	Monitoring Milestone	Responsible Party	Verification of Compliance	
					Initials	Date Remarks
1.	<p>GEOLOGY/SOILS</p> <p>Site development shall proceed incrementally to minimize the amount of disturbed land at any given time. No more than one planning area shall be graded at one time unless approved by the City of Palmdale.</p>	Grading Plan review and site inspection.	Prior to grading permit issuance.	City Engineer		
2.	<p>Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 mph.</p>	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City Engineer		
3.	<p>The following dust control mitigations shall be applied during construction in order to reduce wind erosion. Some of these mitigations include:</p> <ul style="list-style-type: none"> • twice daily watering of active construction sites by sprinklers or water trucks to inhibit wind erosion; • addition in mixtures of compounds to aid in binding soil particles; and • mulching of soil for stabilization. 	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City Engineer		
4.	<p>All disturbed areas shall be revegetated for erosion control in accordance with City standards.</p>	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City Engineer		
5.	<p>Seismic studies shall be required for approval prior to construction of critical use facilities such as emergency services or communications centers or auditoriums. Appropriate seismic safety design must be implemented.</p> <p>AIR QUALITY</p>	Review and approval of the Geotechnical Investigation.	Prior to approval of any development applications.	City Engineer and Planning Department		
6.	<p>Groundcover in disturbed areas shall be replaced in accordance with City standards.</p>	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City of Palmdale		

PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
MITIGATION MONITORING AND REPORTING CHECKLIST

Mit/Cond No.	Mitigation Measures/Condition of Approval	Monitoring and Reporting Process	Monitoring Milestone	Responsible Party	Verification of Compliance	
					Initials	Date Remarks
7.	Enclose, cover, water twice daily, or apply non-toxic soil binders according to manufacturer specifications, to exposed piles (i.e., gravel, sand, dirt) with 5 percent or greater silt content.	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City of Palmdale		
8.	Non-toxic soil stabilizers shall be applied (according to manufacturer's specification) to all inactive construction areas (previously graded areas inactive for 10 days or more).	Review and approval of an Erosion and Sedimentation Control Plan.	Prior to grading permit issuance.	Antelope Valley Resource Conservation District (reviewing body only) and the City of Palmdale		
9.	Electricity from power poles shall be utilized rather than from temporary diesel power generators.	Grading Plan review.	Prior to grading permit issuance.	City Engineer and Building Safety Department		
10.	Walls and attic insulation shall exceed Title 24 requirements.	Building Plan review.	Prior to issuance of building permit.	Building Safety Department		
11.	Light-colored roofing materials shall be utilized in order to reflect light.	Discretionary Development Plan review.	Prior to issuance of building permit.	Planning Department and Building Safety Department		
12.	Building orientation and design shall be so as to minimize solar exposure.	Discretionary Development Plan review.	Prior to issuance of building permit.	Planning Department and Building Safety Department		
13.	The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.	Prior to approval of any individual development project. Improvements are subject to the approval of the City Traffic Engineer based on potential LOS degradation.	Prior to certification of occupancy of any site within the project area and periodically thereafter.	City Traffic Engineer and SCAQMD.		

**PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
MITIGATION MONITORING AND REPORTING CHECKLIST**

Mit/ Cond No.	Mitigation Measures/Condition of Approval	Monitoring and Reporting Process	Monitoring Milestone	Responsible Party	Verification of Compliance	
					Initials	Date Remarks
	WATER RESOURCES					
14.	Drought-tolerant landscape plant material shall be utilized in all landscaping. All development shall be in conformance with City of Palmdale Water Conservation in landscaping ordinance.	Landscape Plan check.	Prior to issuance of building permit.	Planning Department and City Landscape Architect (CLA)		
15.	Native vegetation shall be retained to the extent feasible within the landscape areas.	Landscape Plan check.	Prior to issuance of grading permit.	Planning Department and City Landscape Architect		
16.	Within the golf course area, retain the maximum amount of native vegetation practical.	Golf Course Discretionary Development Application.	Landscape Plan check.	Planning Department and City Landscape Architect		
17.	Controlled use of pesticides and fertilizers within common areas including the golf course shall be enforced through provisions in the landscape plan for that development, including frequency and type of fertilizers/pesticides to be used, and application by qualified persons. For golf course area (that would drain into the proposed open drainage channel), special considerations should be given to use of slow release fertilizers and contact herbicides, prohibition of fungicides and broad spectrum insecticides, and the suppression of mosquito populations using bacterial insecticides or light oils instead of chemical agents.	Landscape Plan check.	Prior to issuance of grading permit and ongoing thereafter.	Planning Department and City Landscape Architect		
18.	Water-conserving appliances and plumbing fixtures shall be utilized in all new construction, as recommended by the California Department of Water Resources.	Building Plan check.	Prior to issuance of building permit.	Building Safety Department		
19.	Where feasible, permeable paving materials shall be used in hardscape areas to maximize infiltration. The project shall be designed to retain and percolate site runoff to the extent practical.	Discretionary Development Plan review.	Prior to issuance of grading and drainage plan.	City Engineer		
20.	Parking lots and gutters of the project site shall be swept at least once per month for industrial sites and once per week for commercial and office sites to prevent the accumulation of pollutants which would be washed into area drainage channels during storms.	Periodic inspections.	Ongoing	Code Enforcement		

**PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
MITIGATION MONITORING AND REPORTING CHECKLIST**

Mit/Cond No.	Mitigation Measures/Condition of Approval	Monitoring and Reporting Process	Monitoring Milestone	Responsible Party	Verification of Compliance	
					Initials	Date Remarks
21.	For individual projects, the City shall require evidence that the Applicant has obtained a storm water discharge permit from the Lahontan RWQCB. All industrial proposals must demonstrate compliance with the Lahontan RWQCB requirements for industrial site NPDES review. An oil/water separator or other appropriate means of runoff water quality control shall be implemented for the aircraft apron constructed in the airport-related industrial area located at the eastern side of the project site.	Stormwater Pollution Prevention Plan check.	Prior to approval of grading and drainage plan.	City Engineer, Building Safety Department and Lahontan RWQCB		
22.	The Project Proponent will pay the required drainage fees for regional flood control facilities identified in the City of Palmdale's Master Plan of Drainage. Drainage facilities constructed by the Palmdale Business Park Center will be credited against the drainage fee for the project.	Submittal of Drainage Plan and Development Agreement.	Approval of drainage plan and execution of development agreement.	City Engineer		
23.	Measures to minimize the amount of groundwater consumption by large turf users (3 acres and over) shall be incorporated in the design and maintenance of such uses. Measures shall include, but are not limited to, the following: a. Golf course fairways shall not exceed an average width greater than 40 yards (120 feet). b. Non-turfed rough areas shall not be included in fairway and rough area calculations. c. Lawn turfed areas, excluding tee boxes and greens, shall consist of drought tolerant species, warm season grasses, hybrid fescue or lawn substitutes. d. All turfed area irrigation systems shall consist of a Confinement/Desert system, controlled by an automatic control system, both employing industry standard Reasonably Available Technology (RAT).	Golf course (or other large turf users) discretionary development application.	Landscape plan check and ongoing.	City Landscape Architect and Planning Department		

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24.	<p>BIOLOGICAL RESOURCES</p> <p>Modified development activities should occur within the dense stands of Joshua trees which occur in the southwestern and northeastern portions of the project site. This can be accomplished by creating special Joshua Tree Preservation and/or Restoration Zones and by modifying the proposed building locations and development activities within these areas so that many of the Joshua trees could remain in present locations. Figure 3.4-2 identified two Joshua Tree Preservation Areas (Zones A and B) in the southwest portion of the project site and Figure 3.4-3 identifies an additional Joshua Tree Restoration Area at the proposed mine hole, Executive Golf Course (Zone C). Modified development activities are proposed in Zones A, B and C as noted below:</p> <p><u>Zone "A"</u> Joshua Tree Preservation Area. Existing trees to be preserved in place. Only exception shall be possible removal and/or relocation of Joshua Trees for future Challenger Way extension through the golf course. Approximately 72 Joshua trees are located in Zone A.</p> <p><u>Zone "B"</u> Joshua Tree Preservation Area. Existing trees to be preserved in place. Approximately 358 Joshua trees are located in Zone B.</p> <p><u>Zone "C"</u> Joshua Tree Preservation Area. The proposed 9-hole Executive Golf Course within Planning Areas CG-1 through CG-4 (see Figure 2-3, Land Use Plan and Project Summary) will occupy approximately 55 acres. Within the zone, 4 Joshua trees per acre shall be preserved in place and/or relocated within the boundaries of this area. Of this amount, 25 percent shall be preserved in place. Total number of Joshua trees to</p>	<p>Submittal of Concept Plans.</p>	<p>Prior to approval of grading plans.</p>	<p>Planning Department and CLA</p>			

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25.	<p>be preserved in place and/or relocated in Zone C is 220. Total number of Joshua trees to be preserved in place is 55.</p> <p>Overall, the project will maintain a minimum average of two healthy Joshua trees per acre (1,254 trees total).</p> <p>Large areas of existing desert scrub shall be retained wherever possible as part of onsite landscaping.</p> <p>Encourage the planting of drought resistant native shrubs and trees around the proposed buildings and golf course in order to minimize water usage and to provide quality wildlife habitat.</p>	<p>Submittal of Concept Plans.</p> <p>Discretionary Development Plan review.</p>	<p>Prior to approval of grading plans.</p> <p>Prior to issuance of grading permit.</p>	<p>Planning Department and CLA</p> <p>Planning Department and CLA</p>		
26.	<p>Project proponent shall ascertain and comply with any applicable requirement of the USFWS and CDFG.</p>	<p>Submittal of Applicable Habitat Encroachment permits.</p>	<p>Prior to issuance of grading permit.</p>	<p>Planning, USFWS and CDFG</p>		
27.	<p>TRAFFIC</p> <p>The project proponent shall be responsible for mitigating the traffic impacts of the project. Such mitigation shall be by construction of or contribution to traffic-related improvements or programs in a timely manner. Design and phasing of improvements shall be subject to the approval of the City Traffic/Transportation Engineer in order to provide safe and efficient traffic operations. In order to assist in determining and updating the extent and phasing of improvements and programs, traffic studies may be required by the City Traffic/Transportation Engineer. The project proponent shall bear all costs for such studies.</p>	<p>Prior to approval of any individual development project. Improvements subject to the approval of the City Traffic Engineer based on potential LOS degradation.</p>	<p>Prior to certification of occupancy of any site within the project area and periodically thereafter.</p>	<p>City Traffic Engineer and SCAQMD</p>		

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29.	<p>PUBLIC SERVICES</p> <p><u>Fire Protection</u> Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residential pressure for a five-hour duration will be required. Final fire flow will be based on the size of the building, its relationship to other structures, and property line and the type of construction used. Additional fire safety requirements will be addressed at Building Plan Check.</p>	Building Plan check.	Prior to building permit issuance.	Building Safety Department and Los Angeles County Fire Department (LACFD)		
30.	<p><u>Police/Law Enforcement</u> Ensure that landscaping and other barriers around buildings do not obstruct views required to provide security surveillance.</p>	Landscape Plan check.	Prior to issuance of building permit and ongoing.	Los Angeles County Sheriff's Department (LACSD), Planning Department and CLA		
31.	Require adequate lighting of buildings and parking facilities during time of darkness in order to facilitate security surveillance.	Photometric Lighting Plan.	Prior to building permit issuance.	Planning Department and LACSD		
32.	Require the use of physical security measures, i.e., CCTV, card access, burglar alarms, as well as other electronic security measures as necessary to provide adequate security of the site and security for persons and property at the site.	Review of proposed security measures.	Prior to certificate of occupancy issuance.	LACSD		
33.	<p><u>Schools</u> The project proponent shall mitigate school impacts to the extent and as authorized by State law as applicable to commercial and industrial projects, as required by the involved school districts.</p>	Building Plan check.	Prior to building permit issuance.	Building Safety Department, Lancaster School District and Antelope Valley Union High School District		
34.	<p>PUBLIC UTILITIES</p> <p><u>Water Production and Distribution</u> Water and facilities must be in accordance with LACWWD #40 and City of Palmdale standards.</p>	Review of Building Construction and Street Engineering drawings.	Prior to building permit issuance.	City Engineer and LACWWD #40		

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35.	The project proponent will work with the LACWWD #40 and the City of Palmdale during detailed design, to integrate the water system serving the project into the City's water distribution plan and adjacent project water distribution plans.	Review of Building Construction and Street Engineering drawings.	Prior to building permit issuance.	City Engineer and LACWWD #40		
36.	Any water production, transmission or distribution improvements which directly serve the project will be financed and constructed by the project.	Building Plan check.	Prior to building permit issuance.	City Engineer		
37.	Building uses, heights, construction types, etc. must be evaluated and modified as necessary to assure that flows available from the distribution system meet or exceed the required flows set by the fire marshal.	Building Plan check.	Prior to building permit issuance.	Building Safety Department and LACFD		
38.	Low flow plumbing fixtures, which at a minimum meet State Appliance Efficiency Standards in Title 20 shall be implemented in the project. This includes low-flow showerheads and toilets operating with less than 2 gallons per flush and the maintenance of waterline pressure at 50 psi or less.	Building Plan check and ongoing.	Ongoing	City Engineer		
39.	Utilize landscaping standards which conserve water and incorporate the use of native desert vegetation and drought-tolerant plants.	Landscape Plan check.	Prior to building permit issuance.	Building Safety Department		
40.	<u>Wastewater Collection and Treatment</u> The Palmdale Business Park Center shall be annexed to LACSD No. 14.	Submission of plans for wastewater.	Prior to building permit issuance.	City Engineer, LACSD No. 14, and LAFCO		
41.	Sewage collection lines and facilities which will serve the project must be developed in accordance with the standards of the LACSD No. 14 and the City of Palmdale.	Review of Building Construction and Street Engineering drawings.	Prior to building permit issuance.	City Engineer and LACSD No. 14		
42.	During detailed design, the project proponent will work with the City of Palmdale to integrate the sewer system serving the project into the City's and LACSD No. 14's sewage collection system and adjacent development sewage discharge plans.	Review of Building Construction and Street Engineering drawings.	Prior to building permit issuance.	City Engineer and LACSD No. 14		
43.	Any waste water collection or treatment system improvements which directly serve the project will be financed by the project proponent to the satisfaction of the appropriate jurisdictional agency.	Building Plan check.	Prior to building permit issuance.	City Engineer and Building Safety Department		

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44.	<p>Solid Waste Generation and Management The design and location of all solid waste collection areas shall conform to all applicable City standards including adequate vehicular access, site-specific collection areas, and City standards regarding solid waste generation. Compaction and recycling shall be required. Storage and collection of recyclable materials (including compostable waste) shall be undertaken in coordination with the Palmdale Public Works Department and in compliance with Assembly Bill 939.</p>	Discretionary Development Plan review.	Prior to building permit issuance and ongoing.	Planning Department and Public Works Department		
45.	<p><u>Electricity</u> The design, location, construction phasing and installation of the electrical lines and facilities necessary to serve this project shall be developed in coordination with SCE. In addition, City requirements for underground utility placement shall be complied with.</p>	Submittal of plans for electrical lines.	Prior to building permit issuance.	Building Safety Department		
46.	<p><u>Natural Gas</u> Construction plans for the installation of the natural gas service necessary for the buildout of this Specific Plan shall be developed in coordination with the Gas Company.</p>	Submittal of plans for natural gas lines.	Prior to building permit issuance.	Building Safety Department		
47.	<p>HAZARDOUS MATERIALS Review all proposed industrial projects with the Los Angeles County Fire Department to assure that proper storage and handling methods for hazardous wastes are implemented.</p>	Submittal of Business Plan.	Ongoing.	LACFD		
48.	<p>Require procedural compliance with Article 96, Hazardous Waste Facilities of the Palmdale Zoning Ordinance for the proposed facilities or prohibit amounts of hazardous materials or wastes that meet the threshold standards contained in the California Health and Safety Code sections 25117 and 25141.</p>	Submittal of Facility Agreement.	Prior to Discretionary Development Plan review.	LACFD		
49.	<p>Restrict the routing of vehicles carrying potentially hazardous materials to the project site to State Route 14 and 138 and to Avenue M.</p>	Submittal of Business Plan.	Ongoing.	LACFD		

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50.	NOISE Limit trash pickup to areas screened from public view and outside of yard setback areas. Screen all such areas with a combination of walls, berming and landscaping per City standards.	Discretionary Development Plan review.	Prior to building permit issuance.	Planning Department		
51.	Limit the location of loading docks or staging areas to rear and side lot areas. These areas should be set back and recessed, and screened by a combination of walls, berms and landscaping from neighboring properties or streets. No loading or staging areas shall be located in any required setback area.	Discretionary Development Plan review.	Prior to building permit issuance.	Building Safety Department and Planning		
52.	Construct a landscaped berm or wall along edges of commercial parking lots facing public streets and adjacent property.	Discretionary Development Plan review.	Prior to building permit issuance.	Planning Department and CLA		
53.	Construct berms whenever possible within landscaped setback areas adjacent to buildings and within parking areas.	Discretionary Development Plan review.	Prior to building permit issuance.	Planning Department and CLA		
54.	Light industrial and manufacturing land uses (PLI) that would result in onsite noise levels exceeding ambient levels or create a potential nuisance to adjacent facilities or businesses should only be permitted within enclosed buildings and limited to the designated PLI areas as proposed in the Specific Plan. These uses would include, but are not limited to manufacturing and assembly, wholesale/retail distribution and storage facilities, and automotive/light truck repair.	Discretionary Development Plan review.	Prior to building permit issuance.	Planning Department		
55.	To ensure that the design and construction of all structures will comply with the interior noise standards of the State and City of Palmdale, construction plans are to be certified by a registered acoustical engineer as meeting all applicable standards. The certification shall consist of an acoustical analysis report submitted with the application for a building permit. The standards, as defined in the State Building Code (Part 2, Title 24, of the California Code of Regulations) and the City's General Plan Noise Element Table N-3 (Maximum Acceptable Levels). For the Project's proposed land uses the maximum acceptable interior noise levels are:	Submittal of acoustical analysis report at time of Building Plan check.	Prior to building permit issuance.	Building Safety Department and Planning		

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56.	<ul style="list-style-type: none"> Not to exceed an Leq(h) of 65 dBA averaged over the period, or hours ("h"), of operation within manufacturing, warehousing and wholesale facilities; and Not to exceed an Leq(h) of 55 dBA averaged over the hours ("h") of operation within commercial, retail, or business office facilities. <p>Project proponent shall grant an avigation easement over the project site. This easement would be forwarded to the USAF and the Los Angeles Department of Airports for review and comment and to the City for approval. A copy of the easements would be extended and made available to any owners, lessors, and renters of property within the specific plan area.</p>	Provision of statement of prospective owner/tenant.	Prior to purchasing or leasing property in specific plan area.	Planning		
57.	<p>CULTURAL RESOURCES</p> <p>No archaeological monitoring is recommended at this time. The proponent of the proposed project should, however, be prepared to permit a certified and qualified archaeologist to evaluate any prehistoric or historic resource which may be uncovered or otherwise identified as a result of any project within the current study area.</p>	Review of report from archaeologist retained by project proponent.	At time of discovery of prehistoric or historic resource.	Planning		
58.	<p>The evaluation process must conform to the requirements and guidelines for Phase II evaluations of prehistoric and/or historic resources, as presented in CEQA.</p>	Review of report from archaeologist retained by project proponent.	At time of discovery of prehistoric or historic resource.	Planning		
59.	<p>Upon completion of any evaluation (Phase II) the proponent must be prepared to forward the data through the Office of Historic Preservation for review and, if necessary, commit to a Phase III mitigation of impact study, should any resource be identified as significant or potentially eligible for nomination to the National Register of Historic Places.</p>	Submittal of Phase II report to SHPO.	Upon completion of Phase II study.	Planning and SHPO		

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60.	No paleontological monitoring is necessary at this time. The proponent should, however, be prepared to permit recovery and evaluation of any paleontological resources identified during future activities within the project area.	Review of report from paleontologist retained by project proponent.	At time of discovery of paleontologic resource.	Planning		
61.	The paleontologist must have the authority to halt any activities which are adversely impacting potentially significant or eligible resources.	Submittal of monitoring report.	Upon potential impact to paleontologic resources.	Planning		
62.	Any paleontological specimens recovered from the property must be professionally handled, cleaned, analyzed, and curated.	Review of report from paleontologist retained by project proponent.	At time of discovery of paleontologic resources.	Planning		
63.	All studies subsequent to this Phase I investigation must be professionally presented in a technical report, which in turn, will be made available for review at the appropriate repository (e.g., UCLA or the Los Angeles County Museum).	Submittal of technical report.	At completion of Phase II and Phase III studies.	Planning and Los Angeles County Museum		
64.	If resources are uncovered during any ground alteration activities, an archaeological and/or paleontological monitoring program should be established to prevent adverse impacts to additional resources. AESTHETICS	Submittal of monitoring program after discovery of resources.	Ongoing during project.	Planning		
65.	Future development within the specific plan area should provide view corridors to the golf course.	Concept Plan review.	Prior to issuance of building permit.	Planning		

10. FISCAL IMPACT REPORT

This fiscal impact analysis (January 1995) has been prepared for the Palmdale Business Park Center Specific Plan located at the southeast corner of Avenue M and Sierra Highway, north of Air Force Plant 42 in the City of Palmdale. The specific plan envisions a mixed-use development consisting of commercial, industrial, airport-related, and golf course land uses on a 632-acre site. Development of the project site will occur in 8 phases over a 25-year period.

This report assesses the fiscal consequences of development of the Palmdale Business Park Specific Plan area as detailed in the December 1994 version of the Specific Plan. The analysis calculates recurring costs and revenues to the City generated by the specific plan. The recurring revenues to the City of Palmdale that are examined in this report include:

- Property tax revenues
- Property transfer tax revenues
- Sales tax revenues
- Franchise tax revenues
- Business license revenues

The recurring costs that are examined in the report include:

- Police protection expenditures
- Public works maintenance expenditures

The analysis examines a 25-year period of development between 1996 and 2021. The acreages of the various land uses would be as follows:

Community Commercial	61.42
Business Park	26.15
Airport-Related	87.92
Light Industrial	165.61
Golf Course	225.76
Open Space	5.90
Street Right of Way	<u>59.45</u>
Total	632.21

As discussed above the project will be developed in 8 phases over a 25-year period. Table 10-1 illustrates the timing for each of the phases, the expected land uses and the number of acres of commercial and industrial land that will be absorbed each year. Phase 1 will include the development of the golf course on a total of 225.76 acres of land. Commercial and industrial land uses would be developed during Phases 2 through 8. It is assumed that commercial and industrial land would be absorbed evenly during each year of the 4-year phase. The number of acres for each land use that is expected to be absorbed each year is presented in the table. The absorption rates are annual averages and absorption in any given year could diverge from the average.

Table 10-1
ANNUAL ABSORPTION OF LAND FOR
PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN

Phase	Year(s)	Land Use	Acre/Year
1	1996	Golf Course	226.92
2	1997	Community Commercial Light Industrial	23.94 13.51
3	1998-2001	Community Commercial Light Industrial	2.35 10.83
4	2002-2005	Community Commercial Light Industrial	7.11 4.20
5	2006-2009	Business Park	6.55
6	2010-2013	Light Industrial	13.66
7	2014-2017	Light Industrial	9.71
8	2018-2021	Airport Related	22.30

Assessed Valuation and Property Transfer Taxes

The calculations of property tax and property transfer tax revenues (see Table 10-2) are dependent on estimated changes in assessed valuation. Phase 1, expected to be completed in 1996, would involve the construction of the 27-hole golf course as well as a 8,000 to 10,000 square foot clubhouse. It was estimated that this would increase the assessed valuation of the property by \$10,000,000 based on information from the project proponent. The increases in assessed valuation due to commercial and industrial development are based on increased valuation per square foot of new building space constructed. It was estimated (based on other fiscal impact reports in Palmdale) that commercial building space would be valued at \$54 per square foot and industrial building space would be valued at \$42 per square foot. The assessed valuation is in 1996 dollars with a 2 percent annual increase in the tax base allowed under Proposition 13. The total assessed valuation of property within the specific plan area is expected to reach \$308,057,035 in the year 2021.

The City of Palmdale receives half of the transfer taxes collected upon the transfer of ownership of real property within the Palmdale Business Park Center Specific Plan. The transfer tax is currently \$1.10 per \$1,000 transferred, thus the City receives \$.55 per \$1,000. It is assumed that the inventory of developed properties is transferred at a 10 percent annual rate of turnover. It also assumed that no mortgages are transferred. Property transfer tax revenues are expected to be relatively minor, peaking at approximately \$16,158 in the year 2021.

Table 10-2
 ASSESSED VALUATION AND PROPERTY TRANSFER TAX

Year	New	Existing	Resold	Total	Property Transfer Tax
1996	\$10,000,000.00	\$0.00	\$0.00	\$10,000,000.00	\$0.00
1997	\$22,729,086.00	\$9,180,000.00	\$1,060,800.00	\$32,969,886.00	\$583.44
1998	\$8,316,756.00	\$30,266,355.35	\$3,497,445.51	\$42,080,556.86	\$1,923.60
1999	\$8,316,756.00	\$38,629,951.19	\$4,463,905.47	\$51,410,612.66	\$2,455.15
2000	\$8,316,756.00	\$47,194,942.43	\$5,453,637.79	\$60,965,336.22	\$2,999.50
2001	\$8,316,756.00	\$55,966,178.65	\$6,467,202.87	\$70,750,137.52	\$3,556.96
2002	\$6,870,498.00	\$64,948,626.24	\$7,505,174.59	\$79,324,298.83	\$4,127.85
2003	\$6,870,498.00	\$72,819,706.32	\$8,414,721.62	\$88,104,925.94	\$4,628.10
2004	\$6,870,498.00	\$80,880,322.01	\$9,346,170.54	\$97,096,990.55	\$5,140.39
2005	\$6,870,498.00	\$89,135,037.33	\$10,300,048.76	\$106,305,584.09	\$5,665.03
2006	\$3,851,820.00	\$97,588,526.19	\$11,276,896.36	\$112,717,242.55	\$6,202.29
2007	\$3,851,820.00	\$103,474,428.66	\$11,957,045.09	\$119,283,293.75	\$6,576.37
2008	\$3,851,820.00	\$109,502,063.67	\$12,653,571.80	\$126,007,455.47	\$6,959.46
2009	\$3,851,820.00	\$115,674,844.12	\$13,366,870.88	\$132,893,535.00	\$7,351.78
2010	\$8,746,935.00	\$121,996,265.13	\$14,097,346.19	\$144,840,546.32	\$7,753.54
2011	\$8,746,935.00	\$133,485,047.49	\$14,831,671.94	\$157,063,654.43	\$8,157.42
2012	\$8,746,935.00	\$144,749,863.93	\$16,083,318.21	\$169,580,117.14	\$8,845.83
2013	\$8,746,935.00	\$156,285,035.95	\$17,365,004.00	\$182,396,974.95	\$9,550.75
2014	\$6,217,624.00	\$168,097,052.11	\$18,677,450.24	\$192,992,126.35	\$10,272.60
2015	\$6,217,624.00	\$177,861,543.64	\$19,762,393.74	\$203,841,561.38	\$10,869.32
2016	\$6,217,624.00	\$187,860,382.96	\$20,873,375.89	\$214,951,382.85	\$11,480.36
2017	\$6,217,624.00	\$198,099,194.44	\$22,011,021.60	\$226,327,840.04	\$12,106.06
2018	\$14,279,403.00	\$208,583,787.38	\$23,175,970.82	\$246,039,161.20	\$12,746.78
2019	\$14,279,403.00	\$226,749,644.88	\$25,194,404.99	\$266,223,452.87	\$13,856.92
2020	\$14,279,403.00	\$245,351,534.17	\$27,261,281.57	\$286,892,218.74	\$14,993.71
2021	\$14,279,403.00	\$264,399,868.79	\$29,377,763.20	\$308,057,034.99	\$16,157.77

Property Tax Revenues

Anticipated property tax revenues from the Palmdale Business Park Center Specific Plan are shown in Table 10-3. Under the terms of AB 1197, the City of Palmdale is to begin receiving 7 percent of the 1 percent tax rate on assessed valuation beginning in 1996. The total assessed valuation in each year is multiplied by .01 and then by .07 to calculate anticipated property tax revenues for the City of Palmdale. Total annual property tax revenues are projected to reach \$215,640 by the year 2021.

Sales Tax Revenue

The Palmdale Business Park Specific Plan is expected to generate sales tax revenues from the planned community commercial development as well as from sales associated with retail activity at the golf course. The anticipated sales tax revenues to the City of Palmdale are shown in Table 10-4. The retail sales are calculated based on a ratio of \$100 per square foot at \$65,487,400 in year 2005. A 8.25 percent sales tax is collected on these sales tax revenues. The City of Palmdale receives one cent of every 8.25 cents collected on every dollar of retail sales. This would yield total annual sales tax revenue of \$653,728 in the year 2025.

Franchise Tax Revenues

The City of Palmdale taxes utility and other franchises at a rate of 2 percent of gross sales. Based upon sales figures from Southern California Edison and Southern California Gas Company, it is estimated that Palmdale Business Park Center Specific Plan energy usage will result in annual electricity sales of \$1.80 per square foot of industrial space and \$1.50 per square foot of commercial space.

Natural gas annual sales are estimated at \$.55 per square foot of industrial space and \$.30 per square foot of commercial space. Anticipated franchise tax revenues from the Palmdale Business Park Center Specific Plan are shown in Table 10-5.

Business License Tax

The City of Palmdale collects a business license tax of \$10.00/employee. This is multiplied by the number of employees, by year for the specific plan area in order to determine the annual business license tax revenues. The anticipated business license tax revenues are shown in Table 10-6.

Total annual revenues from the various sources for the Palmdale Business Park Center Specific Plan are shown in Table 10-7. Revenues are expected to increase steadily peaking at a total of \$1,186,417 in the year 2021.

The infrastructure capital improvements required to support development in Palmdale Business Park Specific Plan area will involve three major elements: a road system, a water system and sewer system. Electric and gas lines will also be necessary but are the responsibility of private sector utilities. Water and sewer costs are the responsibility of other governmental entities and not considered as costs to the City of Palmdale. The road system is assumed a City cost which would be funded through a public bond issue.

Table 10-3
PROPERTY TAX REVENUE

Year	Total Assessed Valuation	Property Tax Rate	City Share	Total Property Tax Revenue
1996	\$10,000,000.00	0.01	0.07	\$7,000.00
1997	\$32,969,886.00	0.01	0.07	\$23,078.92
1998	\$42,080,556.85	0.01	0.07	\$29,456.39
1999	\$51,410,612.66	0.01	0.07	\$35,987.43
2000	\$60,965,336.22	0.01	0.07	\$42,675.74
2001	\$70,750,137.51	0.01	0.07	\$49,525.10
2002	\$79,324,298.82	0.01	0.07	\$55,527.01
2003	\$88,104,924.94	0.01	0.07	\$61,673.45
2004	\$97,096,990.56	0.01	0.07	\$67,967.89
2005	\$106,305,584.09	0.01	0.07	\$74,413.91
2006	\$112,717,242.55	0.01	0.07	\$78,902.07
2007	\$119,283,293.75	0.01	0.07	\$83,498.31
2008	\$126,007,455.47	0.01	0.07	\$88,205.22
2009	\$132,893,535.00	0.01	0.07	\$93,025.47
2010	\$144,840,546.32	0.01	0.07	\$101,388.38
2011	\$157,063,654.43	0.01	0.07	\$109,944.56
2012	\$169,580,117.14	0.01	0.07	\$118,706.08
2013	\$182,396,974.95	0.01	0.07	\$127,677.88
2014	\$192,992,126.36	0.01	0.07	\$135,094.49
2015	\$203,841,561.38	0.01	0.07	\$142,689.09
2016	\$214,951,382.85	0.01	0.07	\$150,465.97
2017	\$226,327,840.04	0.01	0.07	\$158,429.49
2018	\$246,039,111.20	0.01	0.07	\$172,227.38
2019	\$266,223,452.87	0.01	0.07	\$186,356.42
2020	\$286,892,218.74	0.01	0.07	\$200,824.55
2021	\$308,057,034.99	0.01	0.07	\$215,639.92

Table 10-4
SALES TAX REVENUE

Year	Square Feet	Retail Sales	Sales Tax Revenue
1996	9,000	\$900,000.00	\$8,984.25
1997	259,278	\$25,927,800.00	\$258,824.26
1998	283,846	\$28,384,600.00	\$283,349.27
1999	308,414	\$30,841,400.00	\$307,874.28
2000	332,982	\$33,298,200.00	\$332,399.28
2001	357,550	\$35,755,000.00	\$356,924.29
2002	431,881	\$43,188,100.00	\$431,125.21
2003	506,212	\$50,621,200.00	\$505,326.13
2004	580,543	\$58,054,300.00	\$579,527.05
2005	654,874	\$65,487,400.00	\$653,727.97
2006	654,874	\$65,487,400.00	\$653,727.97
2007	654,874	\$65,487,400.00	\$653,727.97
2008	654,874	\$65,487,400.00	\$653,727.97
2009	654,874	\$65,487,400.00	\$653,727.97
2010	654,874	\$65,487,400.00	\$653,727.97
2011	654,874	\$65,487,400.00	\$653,727.97
2012	654,874	\$65,487,400.00	\$653,727.97
2013	654,874	\$65,487,400.00	\$653,727.97
2014	654,874	\$65,487,400.00	\$653,727.97
2015	654,874	\$65,487,400.00	\$653,727.97
2016	654,874	\$65,487,400.00	\$653,727.97
2017	654,874	\$65,487,400.00	\$653,727.97
2018	654,874	\$65,487,400.00	\$653,727.97
2019	654,874	\$65,487,400.00	\$653,727.97
2020	654,874	\$65,487,400.00	\$653,727.97
2021	654,874	\$65,487,400.00	\$653,727.97

Table 10-5
FRANCHISE TAX REVENUE

Year	Commercial S.F.	Industrial S.F.	Commercial Franchise Tax Revenue	Industrial Franchise Tax Revenue	Total Franchise Tax Revenue
1996	9,000	0	\$324.00	\$0.00	\$324.00
1997	259,278	205,973	\$9,334.01	\$9,680.73	\$19,014.74
1998	283,846	371,087	\$10,218.46	\$17,441.09	\$27,659.55
1999	308,414	536,201	\$11,102.90	\$25,201.45	\$36,304.35
2000	332,982	701,315	\$11,987.35	\$32,961.81	\$44,949.16
2001	357,550	866,429	\$12,871.80	\$40,722.16	\$53,593.96
2002	431,881	930,462	\$15,547.72	\$43,731.71	\$59,279.43
2003	506,212	994,495	\$18,223.63	\$46,741.27	\$64,964.90
2004	580,543	1,058,528	\$20,899.55	\$49,750.82	\$70,650.36
2005	654,874	1,122,661	\$23,575.46	\$52,765.07	\$76,340.53
2006	719,038	1,122,661	\$25,885.37	\$52,765.07	\$78,650.44
2007	783,202	1,122,661	\$28,195.27	\$52,765.07	\$80,960.34
2008	847,366	1,122,661	\$30,505.18	\$52,765.07	\$83,270.24
2009	911,530	1,122,661	\$32,815.08	\$52,765.07	\$85,580.15
2010	911,530	1,330,921	\$32,815.08	\$62,553.30	\$95,365.38
2011	911,530	1,539,181	\$32,815.08	\$72,341.52	\$105,156.60
2012	911,530	1,747,441	\$32,815.08	\$82,129.73	\$114,944.81
2013	911,530	1,955,701	\$32,815.08	\$91,917.95	\$124,733.03
2014	911,530	2,103,740	\$32,815.08	\$98,875.78	\$131,690.86
2015	911,530	2,251,779	\$32,815.08	\$105,833.61	\$138,648.69
2016	911,530	2,399,818	\$32,815.08	\$112,791.44	\$145,606.52
2017	911,530	2,547,857	\$32,815.08	\$119,749.27	\$152,564.35
2018	911,530	2,887,843	\$32,815.08	\$135,728.62	\$168,543.70
2019	911,530	3,227,829	\$32,815.08	\$151,707.96	\$184,522.84
2020	911,530	3,567,815	\$32,815.08	\$167,687.30	\$200,502.38
2021	911,530	3,907,801	\$32,815.08	\$183,666.64	\$216,481.72

Table 10-6
BUSINESS LICENSE TAX

Year	Employees	Business License Tax
1996	43	\$430.00
1997	1,337	\$13,370.00
1998	1,643	\$16,430.00
1999	1,949	\$19,490.00
2000	2,255	\$22,550.00
2001	2,561	\$25,610.00
2002	2,950	\$29,500.00
2003	3,339	\$33,390.00
2004	3,728	\$37,280.00
2005	4,117	\$41,170.00
2006	4,398	\$43,980.00
2007	4,679	\$46,790.00
2008	4,960	\$49,600.00
2009	5,241	\$52,410.00
2010	5,480	\$54,800.00
2011	5,719	\$57,190.00
2012	5,958	\$59,580.00
2013	6,197	\$61,970.00
2014	6,367	\$63,670.00
2015	6,537	\$65,370.00
2016	6,707	\$67,070.00
2017	6,877	\$68,770.00
2018	7,268	\$72,680.00
2019	7,659	\$76,590.00
2020	8,050	\$80,500.00
2021	8,441	\$84,410.00

Table 10-7
ANNUAL REVENUE BY SOURCE

Year	Property Tax	Transfer Tax	Sales Tax	Franchise Tax	Business License Tax	Total Revenue
1996	\$7,000.00	\$0.00	\$8,984.25	\$324.00	\$430.00	\$16,738.25
1997	\$23,078.92	\$583.44	\$258,824.26	\$19,014.74	\$13,370.00	\$314,871.36
1998	\$29,456.39	\$1,923.60	\$283,349.27	\$27,659.55	\$16,470.00	\$358,858.81
1999	\$35,987.43	\$2,455.15	\$307,874.28	\$36,304.35	\$19,490.00	\$402,111.21
2000	\$42,675.74	\$2,999.50	\$332,399.28	\$44,949.16	\$22,550.00	\$445,573.68
2001	\$49,525.10	\$3,556.96	\$356,924.29	\$53,593.96	\$25,610.00	\$489,210.31
2002	\$55,527.01	\$4,127.85	\$431,125.21	\$59,279.43	\$29,500.00	\$579,559.50
2003	\$61,673.45	\$4,628.10	\$505,326.13	\$64,964.90	\$33,390.00	\$669,982.58
2004	\$67,967.89	\$5,140.39	\$579,527.05	\$70,650.36	\$37,280.00	\$760,565.69
2005	\$74,413.91	\$5,665.03	\$653,727.97	\$76,340.53	\$41,170.00	\$851,317.44
2006	\$78,902.07	\$6,202.29	\$653,727.97	\$78,650.44	\$43,980.00	\$861,462.77
2007	\$83,498.31	\$6,576.37	\$653,727.97	\$80,960.34	\$46,790.00	\$871,552.99
2008	\$88,205.22	\$6,959.46	\$653,727.97	\$83,270.24	\$49,600.00	\$881,762.89
2009	\$93,025.47	\$7,351.78	\$653,727.97	\$85,580.15	\$52,410.00	\$892,095.37
2010	\$101,388.38	\$7,753.54	\$653,727.97	\$95,368.38	\$54,800.00	\$913,038.27
2011	\$109,944.56	\$8,157.42	\$653,727.97	\$105,156.60	\$57,190.00	\$934,176.55
2012	\$118,706.08	\$8,845.63	\$653,727.97	\$114,944.81	\$59,580.00	\$955,804.69
2013	\$127,677.88	\$9,550.75	\$653,727.97	\$124,733.03	\$61,970.00	\$977,659.63
2014	\$135,094.49	\$10,272.60	\$653,727.97	\$131,690.86	\$63,670.00	\$994,455.92
2015	\$142,689.04	\$10,869.32	\$653,727.97	\$138,648.69	\$65,370.00	\$1,011,305.07
2016	\$150,465.97	\$11,480.36	\$653,727.97	\$145,606.52	\$67,070.00	\$1,028,350.82
2017	\$158,429.49	\$12,106.06	\$653,727.97	\$152,564.35	\$68,720.00	\$1,045,597.87
2018	\$172,227.38	\$12,746.78	\$653,727.97	\$168,543.70	\$72,680.00	\$1,079,925.83
2019	\$186,352.42	\$13,856.92	\$653,727.97	\$184,522.84	\$76,590.00	\$1,115,050.15
2020	\$200,824.55	\$14,993.71	\$653,727.97	\$200,502.38	\$80,500.00	\$1,150,548.61
2021	\$215,639.92	\$16,157.77	\$653,727.97	\$216,481.72	\$84,410.00	\$1,186,417.38

The two main recurring costs to the City include police protection and municipal road maintenance. It is assumed that landscape maintenance costs will be borne by the master developer through a special assessment district or some other funding mechanism.

Police Costs

The City of Palmdale is currently provides law enforcement services under a contract with the Los Angeles County Sheriff's Department. Recent fiscal impact studies for residential projects within the City of Palmdale estimate police costs at \$82.50 per resident. Since the Palmdale Business Park Center Specific Plan has not residential land uses, the anticipated employment within the specific plan area was utilized instead. Estimated police costs for the Palmdale Business Park Center Specific Plan are shown in Table 10-8. These costs are based on projected employment and are expected to total almost \$700,000 by the year 2021.

Street and Traffic Signal Maintenance Costs

Annual street maintenance costs for internal roadways within the Palmdale Business Park Specific Plan area are estimated at \$5,000 per lane mile. This cost per lane mile is approximate based on a figure of \$10,000 per street mile provided by the City of Palmdale Public Works Department. It also includes maintenance of parking areas on the side of the streets. Street maintenance costs were calculated by multiplying this cost per lane mile by the number of lane miles within the specific plan area each year. Information was provided by the project proponent on the number of lane miles that would be constructed during each phase of the proposed project. It was assumed that the same number of lane miles would be constructed during each year of the phase. A summary of annual street and traffic signal maintenance costs by year is presented in Table 10-9.

In addition to street maintenance costs there will be annual maintenance costs for traffic signals. The City of Palmdale estimates that the annual maintenance costs are \$3,000 per traffic signal. The information on installation of traffic signals by phase were obtained from the Palmdale Business Park Center Specific Plan.

Table 10-10 presents total costs per year to the City of Palmdale resulting from the development of the Palmdale Business Park Center Specific Plan. The main costs to the City of Palmdale will result from the need to provide police services to the project area.

Summary of Revenues Versus Expenditures

A comparison of revenues and expenditures for the Palmdale Business Park Center Specific Plan is presented in Table 10-11. This table compares revenues and expenditures by fiscal year for the implementation of the Palmdale Business Park Center Specific Plan. It was assumed that the City of Palmdale would not experience either revenues or expenditures from the proposed project until the 1996-1997 fiscal year. Since the revenue and expenditure estimates were developed on a calendar year basis, it was necessary to convert those totals into fiscal year estimates. This was done by assuming that revenues and expenditures would occur uniformly throughout the year and evenly splitting the calendar year estimates.

Table 10-8
ESTIMATED POLICE COSTS

Year	Employees	Police Cost
1996	43	\$3,547.50
1997	1,337	\$110,302.50
1998	1,643	\$135,547.50
1999	1,949	\$160,792.50
2000	2,255	\$186,037.50
2001	2,561	\$211,282.50
2002	2,950	\$243,375.00
2003	3,339	\$275,467.50
2004	3,728	\$307,560.00
2005	4,117	\$339,652.50
2006	4,398	\$362,835.00
2007	4,679	\$386,017.50
2008	4,960	\$409,200.00
2009	5,241	\$432,382.50
2010	5,480	\$452,100.00
2011	5,719	\$471,818.50
2012	5,958	\$491,535.00
2013	6,197	\$511,252.50
2014	6,367	\$525,277.50
2015	6,537	\$539,302.50
2016	6,707	\$553,327.50
2017	6,877	\$567,352.50
2018	7,268	\$599,610.00
2019	7,659	\$631,867.50
2020	8,050	\$664,125.00
2021	8,441	\$696,382.50

Table 10-9
ESTIMATED STREET AND TRAFFIC SIGNAL MAINTENANCE COSTS

Year	Lane Miles	Street Maintenance Cost	Traffic Signals	Signal Maintenance Cost	Total Maintenance Cost
1996	1.18	\$5,900.00	0	\$0	\$5,900.00
1997	1.18	\$5,900.00	0	\$0	\$5,900.00
1998	2.13	\$10,650.00	1	\$3,000	\$13,650.00
1999	3.08	\$15,400.00	1	\$3,000	\$18,400.00
2000	4.03	\$20,150.00	1	\$3,000	\$23,150.00
2001	4.98	\$24,900.00	1	\$3,000	\$27,900.00
2002	5.87	\$29,350.00	3	\$9,000	\$38,350.00
2003	6.76	\$33,800.00	3	\$9,000	\$42,800.00
2004	7.65	\$38,250.00	3	\$9,000	\$47,250.00
2005	8.54	\$42,700.00	3	\$9,000	\$51,700.00
2006	8.98	\$44,900.00	3	\$9,000	\$53,900.00
2007	9.42	\$47,100.00	3	\$9,000	\$56,100.00
2008	9.86	\$49,300.00	3	\$9,000	\$58,300.00
2009	10.30	\$51,500.00	3	\$9,000	\$60,500.00
2010	10.94	\$54,700.00	4	\$12,000	\$66,700.00
2011	11.58	\$57,900.00	4	\$12,000	\$69,900.00
2012	12.22	\$61,100.00	4	\$12,000	\$73,100.00
2013	12.86	\$64,300.00	4	\$12,000	\$76,300.00
2014	13.49	\$67,450.00	5	\$15,000	\$82,450.00
2015	14.12	\$70,600.00	5	\$15,000	\$85,600.00
2016	14.75	\$73,750.00	5	\$15,000	\$88,750.00
2017	15.38	\$76,900.00	5	\$15,000	\$91,900.00
2018	16.06	\$80,300.00	5	\$15,000	\$95,300.00
2019	16.74	\$83,700.00	5	\$15,000	\$98,700.00
2020	17.42	\$87,100.00	5	\$15,000	\$102,100.00
2021	18.10	\$90,500.00	5	\$15,000	\$105,500.00

Table 10-10
ANNUAL COST BY SOURCE

Year	Police Costs	Street and Signal Maintenance	Total
1996	\$3,547.50	\$5,900.00	\$9,447.50
1997	\$110,302.50	\$5,900.00	\$116,202.50
1998	\$135,547.50	\$13,650.00	\$149,197.50
1999	\$160,792.50	\$18,400.00	\$179,192.50
2000	\$186,037.50	\$23,150.00	\$209,187.50
2001	\$211,282.50	\$27,900.00	\$239,182.50
2002	\$243,375.00	\$38,350.00	\$281,725.00
2003	\$275,467.50	\$42,800.00	\$318,267.50
2004	\$307,560.00	\$47,251.00	\$354,811.00
2005	\$339,652.50	\$51,700.00	\$391,352.50
2006	\$362,835.00	\$53,900.00	\$416,735.00
2007	\$386,017.50	\$56,100.00	\$442,117.50
2008	\$409,200.00	\$58,300.00	\$467,500.00
2009	\$432,382.50	\$60,500.00	\$492,882.50
2010	\$452,100.00	\$66,700.00	\$518,800.00
2011	\$471,818.50	\$69,900.00	\$541,718.50
2012	\$491,535.00	\$73,100.00	\$564,635.00
2013	\$511,252.50	\$76,300.00	\$587,552.50
2014	\$525,277.50	\$82,450.00	\$607,727.50
2015	\$539,302.50	\$85,600.00	\$624,902.50
2016	\$553,327.50	\$88,750.00	\$642,077.50
2017	\$567,352.50	\$91,900.00	\$659,252.50
2018	\$599,610.00	\$95,300.00	\$694,910.00
2019	\$631,867.50	\$98,700.00	\$730,567.50
2020	\$664,125.00	\$102,100.00	\$766,225.00
2021	\$696,382.50	\$105,500.00	\$801,882.50

Table 10-11 indicates that revenues would exceed expenditures for each fiscal year during the 25-year implementation period for the Palmdale Business Park Center Specific Plan. The largest difference (\$452,346) between revenues and expenditures would occur during Fiscal Year 2005-2006. The table also shows that at the end of the 25-year specific plan implementation period the proposed project would result in a cumulative surplus of revenues over expenditures to the City of Palmdale of \$9,173,208.

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Table 10-11
 COMPARISON OF REVENUES AND EXPENDITURES
 PALMDALE BUSINESS PARK CENTER SPECIFIC PLAN
 (FY 1996-1997 THROUGH FY 2021-2022)

Fiscal Year	Revenues	Expenditures	Excess Revenue Over Expenditures	Beginning Fund Balance	Ending Fund Balance
95-96	\$0	\$0	\$0	\$0	\$0
96-97	\$174,174	\$67,549	\$106,625	\$0	\$106,625
97-98	\$336,865	\$132,700	\$204,165	\$106,625	\$310,790
98-99	\$380,485	\$164,195	\$216,290	\$310,790	\$527,080
99-00	\$423,843	\$194,190	\$229,653	\$527,080	\$756,733
00-01	\$467,392	\$224,185	\$243,207	\$756,733	\$999,940
01-02	\$534,385	\$260,454	\$273,931	\$999,940	\$1,273,871
02-03	\$624,771	\$299,996	\$324,775	\$1,273,871	\$1,598,646
03-04	\$715,274	\$336,539	\$378,735	\$1,598,646	\$1,977,381
04-05	\$805,942	\$373,082	\$432,860	\$1,977,381	\$2,410,241
05-06	\$856,390	\$404,044	\$452,346	\$2,410,241	\$2,862,587
06-07	\$866,507	\$429,426	\$437,081	\$2,862,587	\$3,299,668
07-08	\$876,658	\$454,809	\$421,849	\$3,299,668	\$3,721,517
08-09	\$886,929	\$480,191	\$406,738	\$3,721,517	\$4,128,255
09-10	\$902,567	\$505,841	\$396,726	\$4,128,255	\$4,524,981
10-11	\$923,607	\$530,259	\$393,348	\$4,524,981	\$4,918,329
11-12	\$944,991	\$553,177	\$391,814	\$4,918,329	\$5,310,143
12-13	\$966,732	\$576,094	\$390,638	\$5,310,143	\$5,700,781
13-14	\$986,058	\$597,640	\$388,418	\$5,700,781	\$6,089,199
14-15	\$1,002,881	\$616,315	\$386,566	\$6,089,199	\$6,475,765
15-16	\$1,019,828	\$633,490	\$386,338	\$6,475,765	\$6,862,103
16-17	\$1,036,974	\$650,665	\$386,309	\$6,862,103	\$7,248,412
17-18	\$1,062,762	\$677,081	\$385,681	\$7,248,412	\$7,634,093
18-19	\$1,097,488	\$712,739	\$384,749	\$7,634,093	\$8,018,842
19-20	\$1,132,799	\$748,396	\$384,403	\$8,018,842	\$8,403,245
20-21	\$1,168,483	\$783,054	\$385,429	\$8,403,245	\$8,788,674
21-22	\$1,186,417	\$801,883	\$384,534	\$8,788,674	\$9,173,208

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