

8 FINAL ENVIRONMENTAL IMPACT REPORT

PURPOSE OF EIR

Dominguez Technology Centre, an approximately 288-acre project in the City of Carson (see Exhibit 1), is generally bounded by Victoria Street, Wilmington Avenue, University Drive and California State University, Dominguez Hills. In December 1983, the Carson City Council adopted a resolution requiring the preparation of a specific plan for the property. Following this request, the applicant prepared a specific plan for a portion of the site (45 acres). In August 1986, the Carson City Council approved a specific plan for an industrial complex on a site located at the northwest corner of Wilmington Avenue and University Drive. The current project involves the preparation of a specific plan for the remainder of the site (288 acres) in order to develop a technology and industrial-based complex.

The City of Carson has determined through an Initial Study that an environmental impact report is required. A Notice of Preparation was prepared by the city and distributed to the State Clearinghouse, responsible agencies and other interested parties (see Appendix I, Addendum 2).

To the east, the applicant has developed the majority of eastern portion of Dominguez Technology Centre, a 120-acre business park located in an unincorporated portion of Los Angeles County.

AUTHORITY AND INTENDED USE OF THE EIR

This program environmental impact report (EIR) has been prepared in accordance with the California Environmental Quality Act of 1970 as amended, the State CEQA Guidelines as amended, and the procedural guidelines of the City of Carson. This EIR is an informational document designed to assist in the objective assessment of the potential environmental impacts associated with the implementation of the specific plan.

This EIR has been prepared pursuant to Section 15168 of the State Guidelines for the implementation of CEQA, which allows for the preparation of a Program EIR to address issues related to the ultimate development of the study area.

This document evaluates the potential environmental impacts associated with buildout of the 288-acre site. The discretionary action currently being requested, and specifically addressed in the EIR, is the adoption of a specific plan. At each of the subsequent levels of project review, the specific activity (Tentative Parcel Maps, Use Permits, etc.) will be examined in light of the Program EIR to determine whether additional environmental analysis is required.

If it is determined that the proposed subsequent activity is consistent with the provisions of the specific plan and that the Program EIR adequately addresses the associated environmental impacts, no new environmental document would be required. If a proposed future development could potentially have a significant impact on the environment which was not addressed in the Program EIR, but the potential impact will be effectively mitigated, a Negative Declaration may be prepared. Other types of documents, such as a supplement or addendum (CEQA Guidelines 15163, 15164) may be appropriate, depending upon the circumstances of the proposed activity or types and magnitude of potential environmental impacts anticipated.

The options described above are in accordance with the provisions of the California Environmental Quality Act and are encouraged by the state to address properly the subsequent activities and avoid duplicating evaluation of basic policy considerations.

Areas of Controversy

No substantial areas of controversy arose during the preparation of the Draft EIR, but some issues surfaced during the public hearing process. Many of the issues were also raised by Community Development and Public Works staff prior to review by the Planning Commission.

Areas of controversy concerning the project raised by some members of the public include:

- the width of Central Avenue
- limitation of industrial uses along Central Avenue
- location of bike paths and sidewalks along proposed Central Avenue
- child day care
- adequacy of traffic mitigation
- recycling
- site development standards (ie., number of parking spaces, special discretionary permitted uses, and truck loading and maneuvering)
- onsite recreation facilities
- a mandatory Transportation Demand Management Program (TDMP)
- the establishment of raised, landscaped medians

The alternatives section describes a range of reasonable alternatives to the project which can feasibly attain the basic objectives of the project. These alternatives include a variety of land use mixes.

The no project alternative assumes that no further development will occur. All impacts of the no project alternative are considered insignificant since no additional impacts would occur to services or the environment.

Alternative 1 assumes development of the project with an increase in office uses. Potential environmental effects are similar to the project impacts. A reduction in land use conflicts may occur between residential and University uses with this alternative.

Alternative 2 would require a reallocation of the project square footage. This alternative will reduce all environmental impacts over the proposed project including traffic, noise and the need for public services and utilities.

Of these alternatives, the "no project" alternative is considered to be the environmentally superior alternative because no environmental impacts are expected to occur if no development occurs. Other than no project, Alternative 2 is the most environmentally superior because of the decrease of total trips in comparison to the project.

The "no project" alternative reduces impacts to traffic, noise, air quality, potential aesthetics, natural resources and facilities. Since no impacts to the environment would result from no development, no mitigation measures would be required. However, the no project alternative would not implement the General Plan, provide industrial park facilities and associated employment and, therefore, would not provide the City with additional sales tax and other revenues. While Alternative 2 is considered slightly environmentally superior to the proposed project, implementation would result in under utilization of the land, decreased sales tax and other revenues to the City, decrease in projected employment and failure to meet the goals and objectives of the specific plan.

Agencies that may use the Dominguez Technology Centre EIR in their decision making process for project approvals are listed below, along with their probable area of interest:

<u>Agency</u>	<u>Required Discretionary Approvals</u>
City of Carson	Street improvement permits Landscape plan Tentative tract maps Development agreement (optional, not required) Grading permits Site plans Precise plans and erosion, siltation, dust control plan Specific Plan approval
Los Angeles County Flood Control District	Drainage improvement plan
California Department of Fish and Game	1601-1603 permit (alteration of streambed)
Southern California Air Quality Management District	Rule XV and SCAQMD policies
California Department of Business and Transportation, Department of Transportation	Freeway encroachment permits
California State University, Dominguez Hills	University Master Plan
Los Angeles County Solid Waste Management Plan	Recycling programs
Los Angeles County Fire Department	Fire and building codes for construction, water mains, hydrants, etc.

<u>Agency</u>	<u>Required Discretionary Approvals</u>
Los Angeles County Sanitation Districts	Sewer permits, wastewater discharge permits
Los Angeles County Sheriff Department	Safety and protection approvals
Department of Conservation- Division of Oil and Gas	Oil well operations and abandonment procedures
City of Compton	Eminent domain approval for circulation improvements
Los Angeles County Department of Public Works	Street improvement permits, underground tank permits, industrial waste discharge permits
Southern California Gas Company	Possible relocation of major gas line
California Regional Water Quality Control Board	Waste discharge requirements

SUMMARY OF IMPACTS

IMPACTS

LAND USE

The change of onsite use will result in a change in the existing use onsite from agricultural and oil-related facilities to industry, office and technology uses.

Increased traffic, air pollution and noise will result from project implementation.

The project may result in land use compatibility conflicts between the proposed uses and the residential uses south of University Drive.

MITIGATION MEASURES

None are required.

See traffic, air quality and acoustic environment mitigation measures.

A registered landscape architect shall certify, prior to approval of final landscape plans, that each final map is in compliance with the landscape concepts of the specific plan and certify that installation complies with the approved landscape plan. Zoning as well as development standards will be allied to the project site.

Prior to approval of final landscape plans, a registered landscape architect shall certify that the landscape plans for buffer areas conform with the setback requirements, as identified within the specific plan, for the project areas adjacent to offsite residential uses. He shall also certify that installation conforms with the approved buffer plan.

If any structure is to be located over or in the proximity of a previously abandoned well, there is the possibility that the well may need to be abandoned to current Division of Oil and Gas specifications. Section 3208.1 of the Public Resources Code (PRC) authorizes the State Oil and Gas Supervisor to order the abandonment of any previously abandoned well, when construction of any structure over or in the proximity of the well could result in a hazard. The cost or abandonment operations are the responsibility of the owner of the property upon which the structure will be located.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Mitigated to a level of insignificance.

Mitigated to an acceptable level of service or to a level of insignificance.

Mitigated to a level of insignificance.

IMPACTS

MITIGATION MEASURES

Under Section 3208.1 of the PRC, the reabandonment responsibilities of the owner/developer of a property upon which a structure will be located need extend no further than the property boundaries. However, if a well requiring reabandonment is on an adjacent property and near the common property line, the Division recommends that the structure be set back sufficiently to allow future access to the well.

Furthermore, if any abandoned or unrecorded wells are uncovered or damaged during excavation or grading, remedial plugging operations may be required. If such damage occurs, the Division's district office must be contacted to obtain information on the requirements for an approval to perform remedial operations.

No building intended for human occupancy should be located near any active well, unless suitable safety and fire protection measures and setback are approved by the local fire department.

Future production and drill sites will be enclosed with an eight-foot-high gated block wall around the entire site with barbed wire on the inside face. All oil well sites with pumping units will be surrounded by a six-foot chain link fence with three strands of barbed wire.

Prior to construction, the developer must provide, to the wells, adequate clearance and access for well workover equipment; any safety shutdown devices, an eight (8) foot block wall with barbed wire on the inside at the seven (7) foot level; suitable gates for workover equipment; appropriate grading to contain potential spillage to the fine enclosures; and appropriate landscaping or as otherwise approved by the Director.

Prior to project construction, the property owner shall contact the Division regarding supervision of drilling, operation, maintenance and abandonment of wells.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

IMPACTS

MITIGATION MEASURES

LEVEL OF SIGNIFICANCE AFTER MITIGATION

GEOLOGY

Groundshaking, ground subsidence, ground rupture and liquefaction may occur since the project is located within a fault zone.

Prior to issuance of building permits, the Building Department shall review and approve all building plans to assure compliance with the latest Los Angeles County Building Code as adopted by the City of Carson.

Mitigated to a level of insignificance.

All recommendations of the certified geologist's report and requirements of the city's grading ordinances shall be incorporated into the final grading plan. The City Engineer shall review and approve the final grading plans.

A structural engineer, experienced with earthquake-resistant design, shall sign off on all building plans to determine the adequacy of seismic criteria for project structures, and to recommend appropriate design changes, if needed, prior to issuance of building permits.

None are required.

Mitigated to a level of insignificance.

HYDROLOGY

Conversion of existing uses to urban uses will increase the amount of impervious surfaces and reduce rainfall infiltration.

The site is not a major recharge zone. Thus, this is considered to be an insignificant impact.

The project will generate 513 cubic feet of runoff per second, based on a 50-year design storm event.

All required drainage improvements as shown in the Infrastructure Facilities Plan in Exhibit 13 in the Specific Plan shall be designed and constructed in accordance with the City of Carson and Los Angeles County Flood Control District standards and shall be reviewed and approved by both the City of Carson and Los Angeles County Flood Control District. All tentative parcel maps, site plans and other precise plans within the specific plan area shall be accompanied by adequate plans for drainage improvements prepared by a registered professional engineer.

Mitigated to a level of insignificance.

IMPACTS

Implementation of the project will result in further disruption of a disrupted U.S.G.S. "blue-line" stream.

MITIGATION MEASURES

The applicant shall consult with the Department of Fish and Game to determine if a 1601-1603 permit will be required for project implementation.

The City Engineer shall review and approve an erosion, siltation and dust control plan prior to the issuance of grading permits to minimize soil transport offsite and to minimize air quality impacts.

All stormdrains shall conform to the standards set on the Storm Drainage Concept as shown in Exhibit 13.

BIOLOGY

Grading will result in the removal of existing vegetation, as it has been concluded that no significant adverse impacts to native flora and fauna will result from project implementation.

Grading activity will result in the alteration of a U.S.G.S. "blue-line" stream.

AIR QUALITY

The project may result in significant short-term fugitive dust impacts due to earthwork activity during construction.

Project traffic volumes will contribute to localized emissions. Currently, the California standard for CO emissions is exceeded.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Mitigated to a level of insignificance.

Insignificant impact.

Unavoidable impact, if the project is implemented.

Mitigated to a level of insignificance.

Mitigated to a level of insignificance.

IMPACTS

MITIGATION MEASURES

- Construction and grading will be carried out with periodic sprinkling of the site with water as needed and by paving the areas proposed for parking as soon as possible.
- Restrict construction during second-stage smog alerts.

Development of the project shall comply with all existing SCAQMD rules and regulations. In addition, development should apply, to the extent feasible, to all AQMP recommendations for commercial and office land uses.

The Director of Planning shall approve the AMMP recommendations incorporated into the project and the Building Department shall ensure their completion.

- Employers shall comply with all provisions of Rule XV: Trip Reduction/Indirect Source - Increases in Average Vehicle Ridership.
- Developer-provided bus turnouts, bus shelters as specified by SCRID and bicycle racks in the commercial area.
- Provide for convenient pedestrian access to transit stops by construction of sidewalks, etc. Construction shall be verified by the Engineering Department prior to occupancy.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

LEVEL OF SIGNIFICANCE AFTER MITIGATION

MITIGATION MEASURES

IMPACTS

TRAFFIC/CIRCULATION

The project will generate an increase of 43,700 vehicle trips daily. This project, combined with cumulative projects, is anticipated to affect the following intersections:

- Central Avenue/Victoria Street
- Wilmington Avenue/SR-91 westbound ramps
- Wilmington Avenue/SR-91 eastbound ramps
- Wilmington Avenue/University Drive
- Wilmington Avenue/Victoria Street
- Wilmington Avenue/Del Amo Boulevard
- Avalon Boulevard/University Drive
- Central Avenue/University Drive
- Central Avenue/SR-91 westbound ramps
- Central Avenue/SR-91 eastbound ramps

A number of mitigation measures have been recommended by the traffic consultant for all surrounding intersections evaluated in the traffic study. See the Transportation Section for review of the mitigation measures.

All intersection and roadway segment improvements are designed to provide the level of service designated in the DKS Traffic Study (Appendix 2), following implementation of proposed mitigation measures.

ACOUSTIC ENVIRONMENT

Project construction activity may result in short-term acoustical impacts to adjacent land uses.

Construction activities should be limited to weekdays during daylight hours (eg., 7 a.m. to 8 p.m.) and Saturdays from 10 a.m. to 6 p.m.

Noise attenuation measures should be employed during construction hours to reduce noise impacts to surrounding uses. Such measures shall include compliance with state measures for muffling and shielding intake and exhaust from equipment and vehicles.

The siting of all future buildings shall comply with City of Carson regulations for interior and exterior noise levels, as specified by Title 25 of the California Administrative Code and the Uniform Building Code.

Loading facilities, mechanical equipment and communication equipment shall be designed to minimize exposure to public view and shall be screened by landscaping, buildings or walls.

Mitigated to a level of insignificance.

Mitigated to a level of insignificance.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

MITIGATION MEASURES

Permanent outdoor storage shall be allowed onsite if screened appropriately according to city standards.

Parking areas shall be screened from public streets by landscaping berms or walls.

The landscaping shall conform to the standards set on the landscape concept (Exhibit 17 in the Specific Plan).

POPULATION/HOUSING/EMPLOYMENT

The project will result in an increase of 13,836 jobs. The city's jobs/housing ratio will be regarded as reasonably balanced.

Increased employment opportunities are viewed as beneficial impacts. No mitigation measures are required.

AESTHETICS

The visual character of the site will be altered from existing nursery and oil-related uses to urbanized industrial/office uses with implementation of the project. The visual change may be apparent to the residents along the southern edge of the project.

Individual development projects shall be reviewed by each developer to ensure that specific plan standards for design and visual aesthetic quality are met.

No building shall be located closer than 100 feet to University Drive to provide adequate visual screening and a buffer between the residential uses to the south and the project site.

Loading facilities, mechanical equipment and communication equipment shall be designed to minimize exposure to public view and shall be screened by landscaping, buildings or walls.

Permanent outdoor storage shall be allowed onsite if screened appropriately according to city standards.

Mitigated to a level of insignificance.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

MITIGATION MEASURES

Parking areas shall be screened from public streets by landscaping berms or walls.

The landscaping shall conform to the standards set on the landscape concept (Exhibit 17 in the Specific Plan).

Mitigated to a level of insignifi-
cance.

CULTURAL RESOURCES

The records search and field survey indicates no presence of significant archaeological or historical material onsite. However, since the general area has included resources, resources may be contained onsite.

If significant cultural deposits are unearthed during earthmoving, a qualified archaeologist and paleontologist shall be retained to assess the significance of the findings. Based on the results of this testing, appropriate mitigation measures specific to each site can be developed.

PUBLIC SERVICES AND UTILITIES

The project will result in an increased demand on services and utilities.

Mitigated to a level of insignifi-
cance.

The building and planning divisions shall review all building permits to ensure that the project will be constructed in conformance with all applicable building codes in order to ensure maximum fire protection. Fire sprinkler systems shall be installed with local alarm and central station supervision.

The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residual 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 lines, and the type of construction used.

Fencing should be provided which limits access but allows visibility from the street. Fencing which screens visibility of oil production uses and vehicular storage areas should be encouraged.

MITIGATION MEASURES

Landscaping and berms should be such that they do not block street visibility adjacent to intersections or when landscaping is determined to be a traffic hazard as determined by the City of Carson traffic engineer.

Adequate lighting should be provided for nighttime security.

Fences should provide a physical barrier to entry but allow for a view of the interior of the fenced area. Roofs should be free of any man-made or natural ladders such as trees. Visibility into and around doorways, porches and windows shall be maintained.

Security shrubbery should be incorporated, when appropriate, into all landscape plans for the site plan and design review. Low shrubbery or trees, trimmed to at least six feet from ground level should maintain visibility into parking lots. Trees should not be placed where they interface with any lighting.

Landscape plans shall include automatic irrigation systems which ensure watering during early morning or evening hours to reduce evaporation losses.

The Building Department and Planning Division shall review building plans for plumbing fixtures to ensure that water reducing measures are utilized (ie., low-volume toilet tanks, flow control devices for faucets, etc.) as required by Title 24 of the California Administrative Code.

The use of drip irrigation systems should be considered in order to reduce water usage.

IMPACTS

LEVEL OF SIGNIFICANCE
AFTER MITIGATION

MITIGATION MEASURES

All required sewer improvements shall be designed and constructed to city and county standards. Determination of the requirement to upsize existing facilities shall be made by the City of Carson Department of Public Works.

Fee payment is required prior to issuance of a permit to connect to district sewer facilities.

Each individual employer will be provided a copy of the Los Angeles County Solid Waste Management Plan which addresses recycling programs.

The Building Department shall review all building plans to assure that Title 24 California Administrative Code requirements are met.

The Building Department shall review all building plans to assure California Administrative Code requirements are met.

Although the project is not expected to impact bus service, the following measures are recommended to mitigate possible impacts that the project may generate upon traffic, air quality and energy:

- Placement of bus route information in conveniently located areas.
- Encouragement of an employer-subsidized bus pass program.
- Direct access onto arterials shall be limited to those driveways required to serve individual lots, as determined by the Director or Public Works.

Mitigated to a level of insignificance.

IMPACTS

LAND USE

Existing Conditions

ONSITE LAND USE

The 288-acre site is currently utilized for production of nursery stock and oil. The site and surrounding area has been a major oil producing region of the Los Angeles Basin since the early 1920s.

Oil-related facilities onsite include an old office building, above ground storage tanks, pumping units and ancillary facilities for oil production.

Two nurseries also are located onsite. A wholesale flower nursery is located northwest of the TRW site while a plant nursery is located at the future Central Avenue alignment with Victoria Street.

SURROUNDING LAND USE

The area surrounding the project site consists primarily of industrial-related, residential, and institutional uses (see Exhibit 4). Surrounding uses include an industrial park along Victoria Street to the north, single family residential uses to the south along University Drive, an industrial park and oil production to the east along Wilmington Avenue and California State University, Dominguez Hills to the west. Property currently owned by the state west of the site is vacant or contains student housing. The area in the immediate vicinity of the site is urbanized and substantially developed.

Compton Airport

Most counties already have an airport land use commission, with powers to review land use decisions which may impact their operations. However, Los Angeles County did not create airport land use commissions and is now required by recent legislation to do so. The two primary concerns for land uses adjacent to airports are structure height and type of land uses. Land uses, such as industrial, are generally compatible, while residential

and school uses are not. The approach/takeoff flight path, at lower altitudes, is protected by imaginary surfaces indicating height restrictions near their facilities and protection of their radar/approach guidance systems. Generally, since the Compton Airport runways are oriented east-west, flights ascending and descending will be coming from those directions, not to or from the south. Those portions of the project site north of Glenn Curtis Street are approximately two miles from the Compton Airport. A copy of the Draft EIR was distributed to the County of Los Angeles and we have apprised the Aviation Division of the specific plan's availability.

The legislation forwarded for review requires the county to develop land use plans for airports, proposes amendments which alter the membership of the governing bodies to include persons qualified in aviation, permit the committee/agency to charge fees for review of land use plans and to adopt rules and regulations pertaining to its duties and powers.

Relevant Plans

CITY OF CARSON GENERAL PLAN/LAND USE ELEMENT

The main objective of the industrial designation is to provide for manufacturing, warehousing, processing and distribution facilities within the community. The industrial designation also provides for the establishment, expansion or preservation of small to medium-size industrial uses which will not likely have an effect upon neighboring commercial or residential uses.

Specific goals contained within the Land Use Element which pertain to the project include the following:

- . Industrial areas and controlled industrial parks should be screened or buffered from adjacent residential, commercial or other heavier industrial areas.
- . All industrial areas should be served with adequate accessibility to transportation, utilities, public streets or highways and with adequate internal circulation, off-street parking and loading and service facilities.

- . Appropriate pollution and environmental standards should be enforced.
- . Industrial businesses should be encouraged to provide broader based industries and provide greater diversity for economic stability.
- . The City should attempt to maintain the industrial areas mainly in the sections of the City presently designated for industrial land uses.

ZONING ORDINANCE

The City's zoning ordinance designates the project site as being in the ML zone (manufacturing-light). The purpose of the ML zoning is to protect the existing uses within the immediate vicinity while providing for the establishment of industrial uses.

Impacts

Onsite Land Use

Implementation of the project will result in a change of use and the demolition of existing structures onsite. Uses will change from nursery and oil production to office, technology and business park. Oil production will continue on existing well sites and designated future production/-drilling site facilities in three specific locations. The project contemplates the incremental removal of the Dominguez Energy building, non-producing oil wells and nursery structures. The existing uses except for the oil operation will be replaced by approximately 4.7 million square feet of buildings for office, technology and industrial uses.

A clean-up operation of the oil field began four years ago and will continue. Environmental clean-up remediation work will continue until the oil operation is phased out. These operations are independent of the project and are not accelerated by the project. In addition, all idle non-producing wells are being systematically abandoned. A copy of the work plan for the subject clean-up operation is included in the Technical Appendices.

The area having the potential for the greatest risk for upset is the crude oil storage facility at tank farm number 5. This facility has been designed according to the Los Angeles County Fire Department code. The containment area is approximately fifty percent larger than the total capacity of the tanks.

The issue of public health and safety is addressed in a safety manual published by Tower Petroleum, and used in the day to day operation of the oil leases. Monthly safety meetings are held with an outside safety director at which time all safety aspects of the operation are reviewed. In addition, frequent inspections of the oil facilities and operation are made and formally reported on by an outside safety consultant.

The development of the site should have no significant impact on oil production from the field. Public safety is assured by real estate disclosure laws which require a "clean site" be transmitted in any real estate exchange and by consolidating the major ongoing oil operations apart from areas of the project which are being developed for the planned uses.

However, oil and gas production will be conducted in a more consolidated area with new gathering lines and updated facilities and equipment.

The project is also being phased so development occurs first in areas where little oil operation remains. Areas in which more extensive oil operations exist will be developed in later phases. The environmental cleanup and remediation work must be completed whether this project is developed or not. An abandoned oil well exhibit is included in the Final EIR. All wells were abandoned in accordance with the Department of Conservation, Division of Oil and Gas requirements in effect at the time of abandonment. Comments provided by the Department of Conservation on the Draft EIR relate to the operations within the production and drill sites (described as Special Treatment Areas in the specific plan) and individual well sites. Manual safety shutdown devices for all individual pumping units are in operation. All oil well pumping units will be surrounded by chain link fence in accordance with the Department of Conservation regulations. All non-producing oil wells will be properly abandoned in accordance with state regulations. The production and drill sites will include

suitable gates for vehicular access, protective grades to retain any potential spillage and landscaping which cannot be scaled to enter the site over the fencing. The future operational production/drill sites will be enclosed with an eight-foot-high gated block wall with barbed wire.

If buildings are sited over abandoned wells, an adequate gas venting system will be provided. The siting of all future buildings also will comply with city regulations for interior and exterior noise levels.

The applicant acknowledges the Department of Conservation's jurisdiction and authority to regulate oil operations, as stated in Section 3106 of the Public Resources Code and shall conform with oil and gas division requirements.

Grading Concept

The grading plan, depicted in Exhibit 11 illustrates the grading necessary to achieve the design concept for Dominguez Technology Centre. The overall grading operation for the project with shrinkage and compaction is substantially balanced onsite.

Surrounding Land Use

Project impacts upon surrounding land uses relate primarily to the general intensification of urban land uses and their compatibility with adjacent uses. Some increased traffic, air pollution and noise can be expected because of jobs provided by the project. Analysis and recommended mitigation measures are provided in other sections of this report.

The surrounding area of the community consists of a mix of industrial, support commercial, office, and residential land uses. The areas to the north and east primarily contain industrial park uses or vacant property with some support commercial and office uses. Several other industrial uses exist within the project vicinity which are compatible with the project. No significant adverse effects of the project are anticipated on surrounding uses.

Primary areas of concern related to land use compatibility for the project are the single-family residential uses south of the site and the residential student housing uses to the west. However, the grade differential between the project site and the offsite residential areas and the separation created by the major roadway help minimize any direct land use conflict. The project site is at a higher elevation than the offsite residential uses along the south edge of the site. The differential between these sites varies. In addition, the applicant proposes a special edge treatment of enhanced landscaping and a 100-foot setback along University Drive which will substantially mitigate potential noise impacts. Therefore, adequate buffering is proposed in the specific plan to minimize land use conflicts.

According to Jim Abing of the Aviation Division, Department of Public Works, Los Angeles County, the project site is not located within the approach path of Compton Airport and planned uses in the project vicinity should be compatible with airport operations. A draft airport plan prepared by the Department is scheduled for completion within one year from the date of this report. The airport plan will not be adopted until the adjacent cities review the draft plan. Planes at higher altitudes may overfly the site but most aircraft hazards are associated with areas near the runways. In other areas of the County, there usually have not been height restrictions for buildings below two-hundred feet for areas removed from the airport.

Structures within the project site will not likely exceed this height and the distance of the project site from the runway, its location perpendicular to the runways, and the general compatibility of non-residential uses with airports, since both zoning and specific plans will allow these uses suggest that subsequent airport plans for Compton Airport will not adversely impact the project.

Relevant Plans

The Carson General Plan Land Use Element designates development within the area as industrial oriented. The project is consistent with this designation.

The development standards proposed in the specific plan are generally consistent with existing zoning standards for the uses proposed. Zoning as well as development standards will be allied to the project site.

Mitigation Measures

The following mitigation measures are recommended to reduce the potential for land use interface conflicts around the project site.

1. A registered landscape architect shall certify prior to approval of final landscape plans for each final map are in compliance with the landscape concepts of the specific plan and certify that installation complies with the approved landscape plan. Permanent automatic irrigation systems shall be installed on all landscape areas requiring irrigation with timers set for late evening or early morning watering. Landscaping and irrigation plans shall be prepared and certified by a licensed landscape architect and submitted for Director approval.
2. Prior to approval of final landscape plans, a registered landscape architect shall certify that the landscape plans for buffer areas conform with the setback requirements, as identified within the specific plan, for the project areas adjacent to offsite residential uses. He shall also certify that installation conforms with the approved buffer plan.
3. If any structure is to be located over or in the proximity of a previously abandoned well, there is the possibility that the well may need to be reabandoned to current Division of Oil and Gas specifications. Section 3208.1 of the Public Resources Code (PRC) authorizes the State Oil and Gas Supervisor to order the reabandonment of any previously abandoned well, when construction of any structure over or in the proximity of the well could result in a hazard. The cost of reabandonment operations is the responsibility of the owner of the property upon which the structure will be located.

Under Section 3208.1 of the PRC, the reabandonment responsibilities of the owner/developer of a property upon which a structure will be loca-

ted need extend no further than the property boundaries. However, if a well requiring reabandonment is on an adjacent property and near the common property line, the Division recommends that the structure be set back sufficiently to allow future access to the well.

Furthermore, if any abandoned or unrecorded wells are uncovered or damaged during excavation or grading, remedial plugging operations may be required. If such damage occurs, the Division's district office must be contacted to obtain information on the requirements for and approval to perform remedial operations.

4. No building intended for human occupancy should be located near any active well, unless suitable safety and fire protection measures and setbacks are approved by the local fire department.
5. Future production and drill sites will be enclosed with an eight-foot-high gated block wall around the entire site with barbed wire on the inside face. All oil well sites with pumping units will be surrounded by a six-foot chain link fence with three strands of barbed wire.
6. Prior to construction, the developer must provide, to the wells, adequate clearance and access for well workover equipment; any safety shutdown devices, an eight (8) foot block wall with barbed wire on the inside at the seven (7) foot level; suitable gates for workover equipment; appropriate grading to confine potential spillage to the enclosures; and appropriate landscaping or as otherwise approved by the Director.
7. Prior to project construction, the property owner shall contact the Division regarding supervision of drilling, operation, maintenance and abandonment of wells.

GEOLOGY

A site reconnaissance and literature study of the project site were conducted by Converse Consultants in May 1989. The consultants completed a detailed review of previously prepared technical reports and aerial photos. This section summarizes the March 1989 report and the complete geotechnical report is included in Appendix I, Addendum 3.

Existing Conditions

Geologic Setting

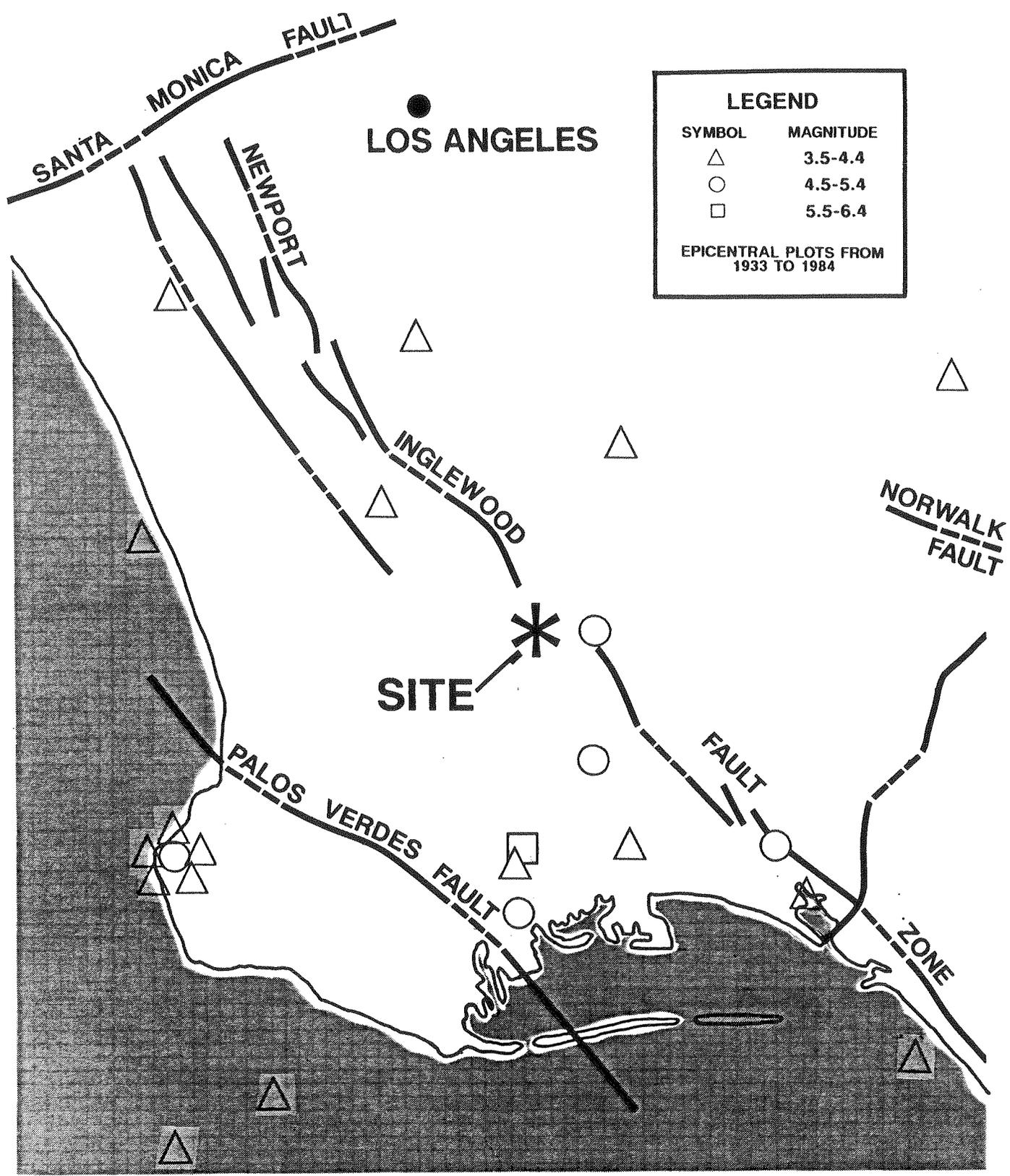
Dominguez Technology Centre is located in the Dominguez Hill portion of the Los Angeles Basin. The site takes the shape of a single dome form which geologically is an anticlinal fold associated with the Newport-Inglewood structure. The dome is approximately three miles long, two miles wide and rises 170 feet above the surrounding area. The dome ranges in elevation from 75 feet to 198 feet above mean sea level. The site is dissected by gullies, one of which extends into a ravine, shown on the U.S.G.S. Topographic Map, Long Beach Quadrangle, as a blue-line stream.

The site is underlain with Miocene through early Pliocene marine sediments and Late Pliocene through Pleistocene marine and alluvial sediments. The base consists of crystalline cretaceous bedrock. The alluvium contains a mix of silt and sand while the terrace deposits consist of silt and clay sands.

Table 1 illustrates the stratigraphic sequence of the site, indicating the relative thickness and description of each geologic unit.

Geologic Hazards

The City of Carson is within a region containing several seismically active fault zones commonly associated with the San Andreas fault system (see Exhibit 24). In 1972, the Alquist-Priolo Special Study Zones Act was established to delineate active fault zones. An active fault was defined by the State Mining and Geology Board as a fault which has had surface dis-



EARTHQUAKE EPICENTER
AND FAULT MAP
DOMINGUEZ
TECHNOLOGY CENTRE

Table 1
STRATIGRAPHIC COLUMN OF THE DOMINGUEZ HILLS AREA

Age	Formation	Thickness* (Feet)	Description
Upper Pleistocene	Lakewood	175	Reddish-brown sand and silt, chiefly non-marine in origin
Lower Pleistocene	San Pedro	495	Unconsolidated to semiconsolidated gravel, sand, silt, and clay; chiefly marine, beach, and lagoonal deposits
Upper	Pico	2,238	Semiconsolidated sand, silt, clay, and some gravel, chiefly of marine origin in the upper half; olive- to dark-brown massive claystone and siltstone, fine to coarse gray sand, all of marine origin in the lower half
Lower Pliocene	Repetto	1,561	Fine to coarse gray sand, sand, occasionally pebbly brown sandy siltstone and claystone, all of marine origin
Miocene	Puente	4,723	Alternating dark- to olive-brown sandy micaceous siltstone and shale; fine to coarse gray sand; sand and schist-bearing conglomerate
Cretaceous	Catalina	**	Greenish, grayish, or bluish serpentine, talc, or schist

* Plus or minus.

** The Catalina schist is basement rock for which thickness is not determined.

placement within the Holocene time. The State Department of Conservation, Division of Mines and Geology (DMG), updated the fault-rupture fault zones for California in 1988 and completed a new series of maps. The site is not located in an Alquist-Priolo zone. The fault zone in closest proximity to the project site is the Newport-Inglewood fault zone.

Secondary Seismic Impacts

Although the site is not within an Alquist-Priolo Special Studies Zone, it is within the Newport-Inglewood fault zone. The Newport-Inglewood fault is interpreted to be a well-defined feature at depth. However, movement at depth is not transferred uniformly to the surface. The resultant surface expression is a series of discontinuous fault segments within a broad zone of deformation (Ziony, 1985). Both the U.S. Geological Survey and DMG have published studies on the potential effects in the Los Angeles area of a large earthquake on the Newport-Inglewood fault (Ziony, 1985; Topozada, et al., 1988). In both of these studies, secondary ground deformation is considered likely to occur within the Newport-Inglewood fault zone. Significant ground rupture is expected to occur on identified segments of the fault, which are presently mapped within Alquist-Priolo Special Studies Zones. However, ground warping and minor ground rupture from secondary faulting is expected at other locations within the fault zone. Because it is very difficult to predict exactly where such secondary deformation will occur within the fault zone, it may be difficult to develop appropriate mitigation for this hazard.

The Newport-Inglewood zone is located northeast of the project site. This fault zone is northwest trending and generally right lateral. Individual faults at or near the surface within the zone form short, discontinuous, generally left-stepping enechelon patterns. Historically, this fault has moderate to high seismic activity with numerous earthquakes greater than Richter magnitude 4. The Newport-Inglewood fault is capable of generating earthquakes exceeding 7.0 on the Richter scale. Two fault traces, associated with the Newport-Inglewood fault zone, are located in close proximity to the Dominguez site. However, there is no specific evidence of Holocene-age surface faulting through or in close proximity of the project site.

The faults considered most active in the vicinity of the site are listed in Table 2.

Table 2
SEISMIC CHARACTERISTICS OF AREA FAULTS

Fault Name	Minimum Distance To Site (Miles)	Total Fault Length (Miles)*	Maximum Credible Earthquake Magnitude**	Age of Most Recent Displacement
Newport-Inglewood	1.0	45	7.0	Historic (1933)
Palos Verdes	7.5	50	7.0	Late Quaternary
Norwalk	10	7	6.5	Late Quaternary
Whittier	16	25	6.5	Holocene
Malibu-Santa Monica	16.5	40	7.5	Late Quaternary
Peralta Hills	23	5	6.5	Late Quaternary or Holocene
Sierra Madre	23.5	40	7.0	Historic (1971)
El Modeno	25	11	6.5	Late Quaternary or Holocene
Elsinore	33	125	7.5	Historic (1910)
San Andreas-Central	45	220	8+	Historic (1857)
San Jacinto	47.5	130	7.5	Historic (1968)
San Andreas-South	54	95	8+	Historic (1986)

* Ziony and Yerkes (1985).

** Estimated using data by Bonilla, Mark, and Lienkaemper (1984).

Two significant seismic events in the project vicinity have occurred. One seismic event resulted in minimal damage to the West Dominguez Oil Field, while the ground seismic event did not result in any damage. In October 1941, the first event resulted in subsurface displacement in the west Dominguez oil field. The second seismic event was reported in June 1944. No damage to the oil fields occurred in 1944.

Impacts

Given the location of the project site within a zone of potential 7.0 magnitude earthquakes, groundshaking due to seismic activity can be expected

to occur sometime in the future. The site may be subjected to peak ground acceleration in excess of 0.38 during a major earthquake.

Secondary potential effects of seismic activity include ground subsidence, ground rupture and liquefaction.¹ During a significant event a low potential exists for liquefaction to occur in soil layers below the groundwater table. The potential for ground subsidence and shallow ground rupture is also low due to moderately compacted underlying soils. No surface rupture is known to have occurred in the project vicinity within the last 10,000 years.

Like the region, the potential for seismic activity onsite is considered a significant potential adverse impact. However, with the recommended mitigation measures, the impact after mitigated is regarded is insignificant.

Mitigation Measures

1. Prior to issuance of building permits, the Building Department shall review and approve all building plans to assure compliance with the latest Los Angeles County Building Code as adopted by the City of Carson.
2. All recommendations of the certified geologist's report and requirements of the city's grading ordinances shall be incorporated into the final grading plan. The City Engineer shall review and approve the final grading plans.
3. A structural engineer, experienced with earthquake-resistant design, shall sign off on all building plans to determine the adequacy of seismic criteria for project structures, and to recommend appropriate design changes, if needed prior to issuance of building permits.

¹ More detailed information relating to ground subsidence, ground rupture and liquefaction can be found in Appendix 1, Addendum 3, Converse Consultants, Report of Preliminary Geotechnical Study Dominguez Technology Center - West, May 1989.

HYDROLOGY

A hydrologic study was prepared by M.B. Gilbert & Associates in March 1988. A subsequent hydrology study was conducted by W.R. Lind in April 1989 to establish an infrastructure plan for the site. The results of these studies are summarized below and the complete reports are included as Appendix I, Addendum 4 and 5.

Existing Conditions

Groundwater

The Newport-Inglewood fault zone serves as a water barrier separating Central Los Angeles Water Basin from the West Coast Los Angeles Water Basin. The groundwater barrier passes through the project site.

Groundwater flow in the project vicinity is generally to the southwest. However, flow immediately north of the site is southeast toward the Dominguez gap. This diversion is not caused by faults, but instead results from upwarped sediments.

In the area surrounding the project site, subsurface water occurs as semi-perched groundwater in a zone 20 to 50 feet below the ground surface. While only supplying small amounts of water, this groundwater is hydrologically connected to underlying aquifers. The aquifers are primarily replenished by area rainfall. Beneath the semi-perched groundwater, several aquifers occur in the site vicinity, including the Gage/Gardena, Lynwood, Silverado and Sunnyside aquifers. The Gage/Gardena aquifer occurs at a depth of 180 feet and varies in thickness from 50 to 100 feet. The Lynwood aquifer occurs at a depth of 270 feet. The Silverado aquifer occurs at a depth of 320 to 450 feet and is the principal groundwater source for the region. Beneath the Silverado aquifer, the Sunnyside aquifer occurs at a depth of 600 feet.

Surface Hydrology/Drainage

According to the Los Angeles County Flood Control District's Hydrology Manual, all development plans and hydrology studies are based on a 50-year

runoff quantities. The project site currently drains in several directions (Exhibits 12 and 13). The majority of the site (Area A consisting of 114 acres) drains to the southwest corner of the site. A 48-inch reinforced concrete pipe storm drain inlet, located 700 feet west of Central Avenue, receives the runoff from Area A.

Under existing conditions 80 acres of the site (Area D) drains to the northeast corner of the site to the intersection of Victoria Street and Wilmington Avenue. Storm drains in Wilmington Avenue accommodate the existing drainage from Area D. Approximately 27 acres of land (Area F), on the north edge of the site, drain to the northwest corner of the project site. No storm drain facilities have been built to accommodate the surface drainage from this 27-acre drainage area.

Three inlets on University Drive, in addition to the inlet west of Central Avenue, collect drainage from portions of the site. The inlet at University and Central drains 47 acres (Area B). The inlet 200 feet east of Nestor Avenue drains 9.8 acres (Area C). The easterly inlet along the south edge of the TRW site drains 49 acres of the site (Area E) and drains the TRW site. Area G, containing 18 acres, surface drains to the west.

Los Angeles County has established design standards for actual runoff as well as bulked runoff. The actual runoff quantity for the entire site is 639 cfs. However, the project area runoff also contains debris that is known as bulked runoff. The county established a design standard for the area to ensure that drainage systems can accommodate bulked runoff. The bulked runoff quantity for the entire site is 1,005 cfs.

A northeast to southwest-trending ravine is located within the northwest quarter of the site approximately 800 feet south of Victoria Street. This ravine is a natural topographic drainage feature located at the beginning of an intermittent stream which carries storm water from the site southwest to the lower ground of the Los Angeles Basin. The stream is designated on the U.S.G.S. Long Beach Quadrangle topographic map as a blue-line stream. The stream is intermittent due to development in the basin and infrequent rainfall events.

The northern end of the ravine was graded substantially in 1985 to remove drilling wastes. Approximately 90,000 cubic yards of soil were excavated and backfilled from an area 400 feet long by 100 feet wide by 50 feet deep. The stream has been significantly altered by these activities.

The U.S. Department of Fish and Game has jurisdiction of any development activities or impacts upon the stream through the 1601 - 1603 permit process. Upon review of the mitigation measures in the Draft EIR and submittal of an application, the department will determine if additional mitigation is necessary.

Impacts

Conversion of existing uses onsite to urban land uses will increase the amount of impervious surfaces and reduced rainfall infiltration into the soil. However, since the site is not a major water recharge zone, this is not anticipated to be a significant adverse impact on the aquifer.

The project will generate 513 cubic feet of runoff per second, based upon a 50-year design storm event. This represents a significant increase. However, the additional runoff can be accommodated by the drainage system identified in the infrastructure facilities plan recommended by W.R. Lind (see Exhibit 13). This plan both incorporates and upgrades existing storm drain facilities, including two retention basins, to accommodate all drainage flows under peak conditions. The development of these retention basins will require further grading and landscaping in the ravine.

The retention basins will reduce storm runoff discharged from the site to existing offsite drainage facilities and alleviate potential downstream flooding conditions. As such, project drainage impacts on surrounding areas are mitigated to a level of insignificance.

Mitigation Measures

1. All required drainage improvements, as shown in the Infrastructure Facilities Plan in Exhibit 13 in the Specific Plan, shall be designed and constructed in accordance with the City and Los Angeles County

Flood Control District standards and shall be reviewed and approved by both the City of Carson and Los Angeles County Flood Control District.

All tentative parcel maps, site plans and other precise plans within the specific plan area shall be accompanied by adequate plans for drainage improvements prepared by a registered professional engineer.

2. The applicant shall consult with the Department of Fish and Game to determine if a 1601-1603 permit will be required for project implementation.
3. The City Engineer shall review and approve an erosion, siltation and dust control plan prior to the issuance of grading permits to minimize soil transport offsite and to minimize air quality impacts.
4. All storm drains shall conform to the standards set on the storm drain drainage concept as shown in Exhibit 13.

BIOLOGICAL RESOURCES

A biological survey of the site was conducted by M.B. Gilbert Associates in July 1989 to identify sensitive biological resources and constraints associated with development of the site. In addition, a National Diversity Data Base search was completed and the California Department of Fish and Game was contacted to discuss sensitive issues. The complete biological assessment is included as Appendix I, Addendum 6.

Existing Conditions

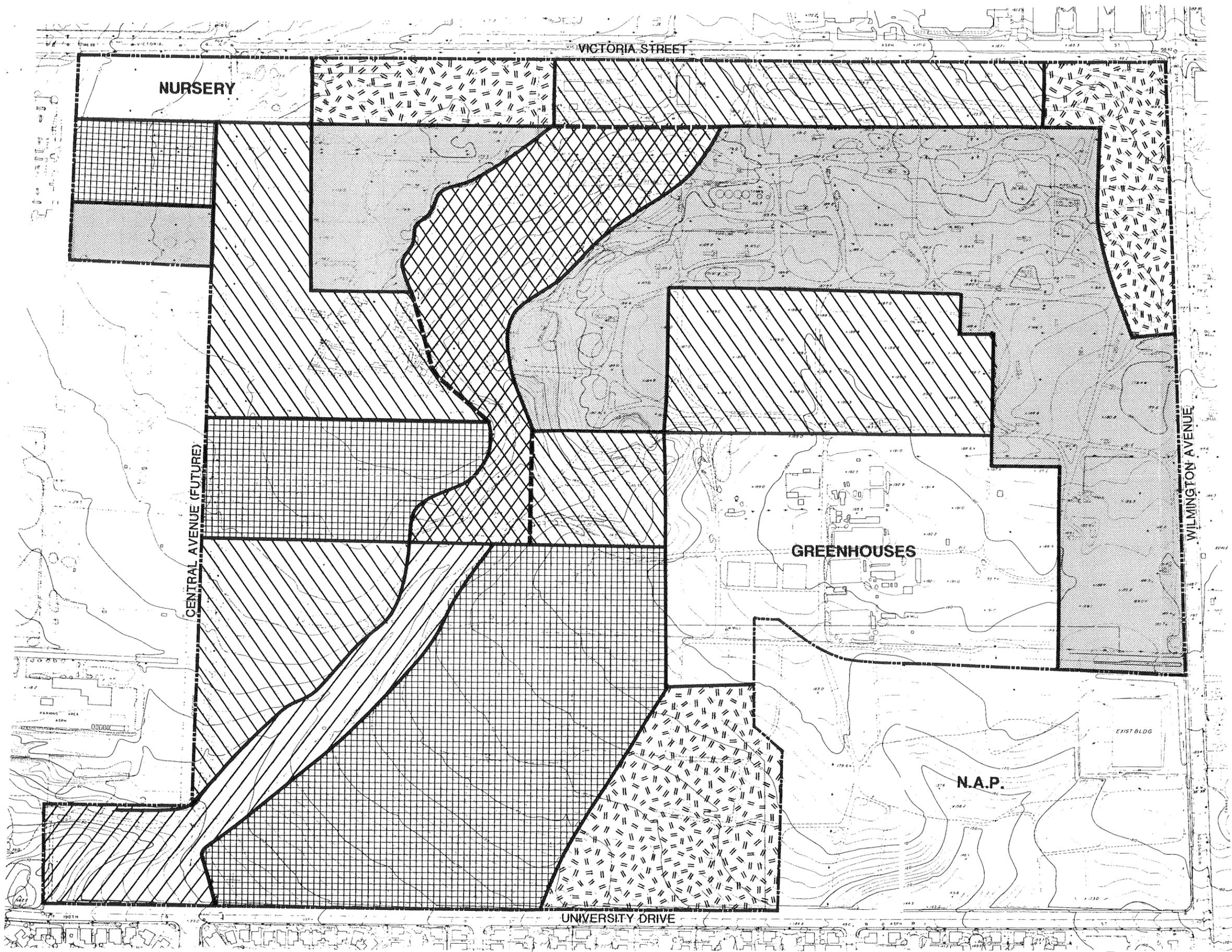
VEGETATION

The Dominguez Technology Centre is located in an area which has been in continuous oil production since the 1920s. The majority of the oil producing wells are presently located in the northern and eastern portions of the site. A small portion of the site is currently utilized for greenhouses and commercial production of flowers. The natural native vegetational cover once found onsite (coastal sage scrub) and within the surrounding area has been removed from the site by previous development and as a result of fire suppression measures as required by oil and gas regulations. This constant disturbance of the site has destroyed natural native habitats and associated biota and has prevented the reestablishment of these communities. The majority of the plant life currently growing onsite consists of grasses, weeds, low-lying shrubs and bushes. Approximately forty percent of the land is covered by weedy plants and thirty percent by agriculture.

The field investigation revealed 67 vascular plant species located on the property, of which approximately 72 percent were introduced and 28 percent are native species.

These weedy species occur in four weedy associations referred to as areas. A fifth plant community area is present which consists of agricultural fields which are primarily planted in geraniums, Indian fig and stonecrop. These areas are described below and are shown on Exhibit 25.

DOMINGUEZ TECHNOLOGY CENTRE BIOTIC RESOURCE AREAS



-  AREA A: Fence line weedy and bare ground association.
-  AREA B: Lalphytic, xeric goosefoot's association.
-  AREA C: Mown grass association.
-  AREA D: Reyes Ravine association.
-  AREA E: Cultivated fields.
-  Combination of both Area A and Area B.

Area A: Fence line weedy and bare ground association. This community is characterized as bare ground with weedy herb associations. The predominant weeds consist of pigweed, riggut grass, and foxtail chess, which are non-native species. Bare ground exists in these areas as a result of the regular removal of plants for fire suppression measures.

Area B: Lalphytic, xeric goosefoot's association. This weedy community is primarily dominated by Russian thistle, Australian saltbush, and Mexican tea. These species prefer saline/alkaline soils.

Area C. Mown grass association. The predominant species in this weed community are waste weed grasses including bermudagrass, wild oat, riggut grass, and foxtail chess.

Area D: Reyes Ravine association. Reyes Ravine, a broad shallow drainage channel, runs from the north through the central portion of the site through the disturbed oilfield and the agricultural lands, and is identified as a U.S.G.S. blue-line stream on the Long Beach 7.5 series quad map. Due to the oil production operations and the lowering of the water tables over the last several decades, the ravine has changed from a Mesic ravine environment to a more Xeric environment.

Weedy flora dominates the ravine with dominant vegetative species including Australian saltbush, Russian thistle, and black and summer mustard. The wide diversity of plants growing within the ravine is supported by intermittent irrigation water. No standing or running water exists within the ravine. However, the presence of summer mustard, umbrella sedge, white sweet clover, giant reed and rabbit's-foot grass is an indication that a water source is available to support moist environments.

Area E: Cultivated fields. Geraniums, Indian fig and stonecrop are the primary species represented within this community. Several fields are currently fallow. Intermittent weeds are present within the fields which consist of rattlesnake weed, storksbill, and Russian thistle. Other weedy species found in Area A can be found in Area E.

Species and Habitats of Concern

None of these plant species or habitats are listed as rare, threatened, endangered or protected, nor is it anticipated that any of the species found onsite will be considered for listing by any state or federal agency.

WILDLIFE

Since the site consists almost entirely of disturbed agricultural and oil fields, the site is only suitable for a few common small birds and mammals that have adapted to interrupted environments. Both vertebrate and invertebrate fauna were found onsite. A total of 12 invertebrate species including ten terrestrial insect species, two terrestrial arachnids and two gastropods were observed onsite during the field investigation. None of these species are listed as candidate, rare, threatened, endangered or protected, nor are they expected to be in the future.

The total number of vertebrates observed at the site includes 20 organisms, three terrestrial reptiles, eleven terrestrial birds and six mammals. No amphibians were found onsite. None of the reptiles, avian birds or mammalian species are presently listed on the candidate, rare, threatened, or endangered by any agency. The wildlife species found onsite are listed in the complete biological assessment found in Appendix I, Addendum 6.

Impacts

The project will involve grading of most of the site resulting in the removal of any existing vegetation. The grading and subsequent development will result in a loss of existing biological resources. However, no sensitive species are known to occur onsite and none are expected to occur due to the historical disturbance of site and the lack of unique soils or substrates. In addition, the surrounding area contains large tracts of industrial and residential developments which have created low habitat values and sensitivity. Therefore, this loss of habitat would not be considered to be a significant adverse impact.

Mitigation Measures

1. The project applicant shall obtain a 1603 permit for alteration of local streambeds with the California Department of Fish and Game prior to the issuance of a grading permit for the onsite drainage area in Reyes Ravine.

As it has been concluded that no significant adverse impacts to native flora and fauna will result from project implementation, additional mitigation measures are not proposed.

AIR QUALITY

Existing Conditions

AIR QUALITY MANAGEMENT

Regionally, the project site is located in the South Coast Air Basin and lies within the jurisdiction of the South Coast Air Quality Management District (SCAQMD) and the California Air Resources Board (CARB). The SCAQMD sets and enforces regulations for stationary air pollutant sources in the basin. The CARB is charged with controlling motor vehicle emissions.

In 1982, the SCAQMD and the Southern California Association of Governments adopted the Air Quality Management Plan (AQMP) for the South Coast Air Basin. This plan was required by the federal Clean Air Act and is intended to guide the attainment of national ambient air quality standards at the earliest feasible date. It is part of the State Implementation Plan submitted to the Environmental Protection Agency (EPA). Included in the plan are a number of stationary and mobile source controls, ride-sharing programs, and energy conservation measures. The AQMP is designed to accommodate a moderate amount of new development and growth throughout the basin.

The SCAQMD is currently updating its Air Quality Management Plan (AQMP) for the air basin. A draft AQMP was released in the fall of 1988, with a wide range of emissions control measures that, if implemented, are projected to lead to attainment by 2007 of all state and federal ambient air quality standards.

Once the 1988 AQMP revision is adopted locally, and approved by the California Air Resources Board, it will be included in the State Implementation Plan (SIP). It will then serve as the framework for all future air pollution control efforts in the South Coast Air Basin.

In developing the AQMP, all the potential control measures that could be available by the year 2007 were identified and, to the extent possible,

their emission reductions were quantified. These control measures were categorized into three tiers, based upon their readiness for implementation.

The short-term, or Tier I, component of the AQMP is action-oriented. It identifies specific control measures for which control technology exists now. For the most part, these measures can be adopted within the next five years, prior to the next AQMP update. They consist mainly of stationary source controls that will be the subject of district rules and ARB-adopted tailpipe emissions standards and performance requirements for motor vehicles. Transportation and land use controls and energy conservation measures are also included in Tier I of the plan, to the extent that technology is available to accomplish the emissions reduction targets. Tier I control measures are expected to be implemented by 1993 except for facility construction which may continue up to 2007.

Tier II measures include already-demonstrated control technologies, but require advancements that can reasonably be expected to occur in the near future. When necessary, these advancements are promoted through regulatory action, such as setting standards at levels that force the advancement of existing technology, or establishing a system of emission charges that provide an economic incentive to reduce emissions.

Tier II measures focus mainly on transportation sources and the use of coatings and solvents. All the Tier II goals are expected to be achieved by 2000 except for transportation facility construction which may continue up to 2007.

Tier III goals depend on substantial technological advancements and breakthroughs that are expected to occur throughout the next two decades. This requires an aggressive expansion of Tier II research and development efforts. After achieving Tier II goals, Tier III measures must be implemented on an accelerated schedule to achieve attainment by 2007.

The California Air Resources Board has recently adopted new legislation with respect to the auto emission inspection program which became effective January 1, 1989. Required inspections remain at 2-year intervals,

but changes will be made to the current \$50 repair limit depending upon the age of the car. In addition, auto manufacturers are now required to provide a broader warranty on new vehicles and mechanics are divided into two classes: one, mechanics allowed to work on 1980 vehicles or newer and a second class of mechanics to work on vehicles built before 1980. Mechanics working on newer vehicles will require more training and a license to state their ability to work on more technologically advanced autos.

AMBIENT AIR QUALITY

Ambient air quality data is usually described in terms of compliance with state and federal standards, which have been adopted to protect public health with some margin of safety. Air quality at any site depends on both the regional ambient or surrounding air quality and local sources of air pollutants. Regional air quality results from the release of pollutants throughout the air basin. Mobile or vehicular sources are considered the major source of emissions in the South Coast Air Basin.

The South Coast Air Quality Management District maintains several air quality monitoring stations in the Los Angeles region. The closest monitoring station to the project site is currently the North Long Beach Station. Data from this station is utilized to derive ambient air quality conditions at the site. Table 3 provides the ambient air quality data monitored for 1984-1987 for various pollutants. Table 3 shows how many days the air quality conditions for the source receptor area North Long Beach exceeded the state or federal standards and the maximum concentration during the year. These statistics describe cumulative air quality conditions in source receptor area North Long Beach resulting from all mobile and stationary sources. State and federal ambient air quality standards for specific pollutants are listed in Table 4. While Table 3 provides data on monitoring, Table 4 lists the specific standard for each pollutant and how pollutants are measured.

Table 3
 AMBIENT AIR QUALITY¹

Pollutant		Number of Days State/Federal Standard Exceeded [Maximum Concentration] ²			
		Locally		Countywide	
		(State/Federal)		(State/Federal)	
Ozone ³ (O ₃)	1984	32/13	[.27]	196/153	[.34]
	1985	29/11	[.23]	212/171	[.39]
	1986	29/10	[.18]	209/159	[.35]
	1987	11/4	[.17]	190/148	[.33]
Carbon ³ monoxide (CO)	1984	0/4	[14]	16/74	[29]
	1985	0/6	[19]	17/57	[33]
	1986	0/5	[13]	11/57	[27]
	1987	0/1	[13]	11/48	[26]
Nitrogen ³ dioxide (NO _x)	1984	5/NA	[.35]	12/NA	[.35]
	1985	4/NA	[.35]	9/NA	[.35]
	1986	1/NA	[.26]	9/NA	[.33]
	1987	1/NA	[.26]	7/NA	[.42]
Sulfur dioxide (SO _x) ³	1984	1/0	[.32]	1/0	[.32]
	1985	0/0	[.08]	0/0	[.0]
	1986	0/0	[.07]	0/0	[.13]
	1987	0/0	[.06]	0/0	[.09]
Particulates ⁴ (PM ₁₀)	1984	.25/0	[195]	.73/.02	[420]
	1985	.53/0	[106]	.80/.02	[165]
	1986	.40/0	[136]	.73/.03	[211]
	1987	.30/0	[107]	.75/.04	[188]

1 Air Resources Board, California Air Quality Data, 1984-1987, Vols. XVI-XIX.

2 Particulates indicated in micrograms per cubic meter (ug/m³). All other pollutants indicated in ppm.

3 Data from the North Long Beach Monitoring Station.

4 Expressed as percentage of samples taken from the North Long Beach Monitoring Station.

Table 4
 AMBIENT AIR QUALITY STANDARDS

California			Federal		
Pollutant	Averaging Time	Concentration	Method	Primary (>)	Method
Ozone	1 hour	0.10 ppm >=	Ultraviolet Photometry	0.12 ppm (235 ug/m ³)	Ethylene Chemiluminescence
Carbon Monoxide	8 hour	9.0> ppm (10 ug/m ³)	Non-Dispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m ³)	Non-Dispersive Spectroscopy
	1 hour	20 ppm> (23 mg/m ³)		35 ppm (40 ug/m ³)	
Nitrogen Dioxide	Annual Avg.	-	Gas Phase Chemiluminescence	.053 ppm	Gas Phase Chemiluminescence Standard
	1 hour	0.25 ppm (470 ug/m ³)		-	
Sulfur Dioxide	Annual Avg.	-	Ultraviolet Fluorescence	0.03 ppm (80 ug/m ³)	Paraosoniline
	24 hour	0.05 ppm (131 ug/m ³)		0.14 ppm (365 ug/m ³)	
	1 hour	0.25 ppm (655 ug/m ³)		-	
Suspended Particulate Matter (PM10)	Annual Geometric Mean	30 ug/m ³)	Size Segregated Inlet Hi-Volume Sampler	50 ug/m ³	
	24 hour	50 ug/m ³		150 ug/m ³	
Sulfates	24 hour	25 ug/m ³	Methylthymol Blue	-	-
Lead	30-day Avg.	1.5 ug/m ³	Atomic Absorption	-	Atomic Absorption
	Calendar Qtr.	-		1.5 ug/m ³	
Hydrogen Sulfide	1 hour	0.03 ppm (42 ug/m ³)	Cadmium Hydroxide Stractan	-	-
Vinyl Chloride	24 hour	0.010 ppm (26 ug/m ³)	Gas Chromotography	-	-
Visibility Reducing Particles	1 Observation	In sufficient amount to reduce the prevailing visibility to less than 10 miles when the relative humidity is less than 70 percent			

Source: South Coast Air Quality Management District, Air Quality Standards Compliance Report, January 1988.

The air quality data indicate that both ozone and particulates are the air pollutants of primary concern in the area. Ozone is not directly emitted, but is the result of chemical reactions of other pollutants, most importantly hydrocarbons and nitrogen dioxide in the presence of bright sunlight. Particulates consist of particles of finely divided solids or liquids such as soot, dust, aerosols, fumes and mists. The major aerosols formed in the air are sulfate and nitrate. Particulates result from dust and fume-producing industrial and agricultural operations, atmospheric chemical reaction and combustion. Particulate concentrations are usually higher in the winter, due to meteorological conditions which favor buildup of contaminants and the emissions of pollutants into the atmosphere. Wherever photochemical smog occurs in areas remote from air emission sources, particulate concentrations are higher during the summer.

Carbon monoxide (CO) is a relatively inert pollutant which is emitted in large amounts by motor vehicles. Carbon monoxide concentrations usually result from sources in the local area. The CO monitored at the North Long Beach station probably reflects the station's local area, and may not be representative of the areas adjacent to the project site. Existing CO levels at the site are estimated from data at the North Long Beach Station and by modeling traffic emissions with a computer dispersion model. This is discussed in detail in the following section.

LOCAL AIR QUALITY

Carbon monoxide is the pollutant of major concern along roadways. It is directly emitted from a variety of sources but the most notable source of carbon monoxide is motor vehicles. For this reason, carbon monoxide concentrations based on current or projected traffic are added to existing air quality conditions and used as indicators of local air quality near a roadway network.

Microscale carbon monoxide levels for the project area were projected using the CALINE4 computer model.¹ The model allows CO concentrations to

¹ CALINE4 was developed by the California Department of Transportation (FHWA/CA/TL-79/23, November 1979).

be estimated along a given roadway corridor or intersection. Because the highest levels of CO are emitted from vehicles when they are stopped at intersections, the locations selected for modeling are the major intersection closest to the project site and the residential uses. These intersections would include Victoria Street/Wilmington Avenue and Wilmington Avenue/University Avenue.

Assumptions used in the model are based upon the project's meteorological conditions, vehicular projections, and receptor locations. A complete list of assumptions and calculations can be found in Appendix I, Addendum 8. The results of the CALINE4 model are presented in the following section. The California Air Resources Board (CARB) has developed CALINE4 for analyzing local air quality impacts.

Impacts

The South Coast Air Quality Management District uses the following daily pollution thresholds as a guideline to determine if the project should be considered to have an environmentally significant impact on air quality:

CO	550 pounds
SOx	150 pounds
NOx	100 pounds
Particulates	150 pounds
Reactive organic gases	75 pounds
Lead	3 pounds

Also, any project that causes an exceedance of any ambient air quality standard or makes a substantial contribution to an existing exceedance, can be considered significant. If a project exceeds land use and population forecasts adopted by the Southern California Association of Governments (SCAG) or consists of 300 or more units, it may also be considered significant.¹

¹ Air Quality Handbook for Preparing Environmental Impact Reports, revised April 1987, SCAQMD.

The proposed project, according to the above threshold standards, may be considered to have a significant impact upon air quality. However, the proposed project was fully evaluated for its potential to produce various air pollutants and the results are discussed in the following paragraphs. The analysis is based on 4.7 million square feet of floor area.

Implementation of the proposed project will result in both short-term and long-term air quality impacts.

AIR QUALITY MANAGEMENT

As noted previously, air quality forecasts in the Air Quality Management Plan (AQMP) are generally based upon buildout of local general plans and the traffic associated with those land uses. The project will be consistent with the City of Carson's General Plan and therefore will be consistent with the AQMP.

Resolution No. 87-49 (Rule XV) was passed recently by SCAQMD in order to assist in attainment of AQMP standards. The resolution requires that as of January 1, 1990, businesses that employ 100 or more persons shall participate in trip reduction/ridesharing programs. A ride-share program has been incorporated as a mitigation measure in the traffic/circulation section of this document, since some individual project firms may employ 100 persons or more.

AMBIENT AIR QUALITY

Two types of air pollutant sources must be considered with respect to the proposed project: stationary and mobile sources. Stationary source considerations include emissions onsite from construction activities, emissions from space and water-heating devices, and power plant emissions from the generation of electricity for the project. Mobile source emissions are those generated by short-term construction activities and long-term traffic from the project. Project buildout plus cumulative projects has been evaluated in this analysis. The University has a master plan for development, however, a precise schedule for the buildout has not been determined.

SHORT-TERM IMPACTS

The preparation of the project area for building construction will produce two types of air contaminants: exhaust emissions from construction equipment and fugitive dust generated by soil movement. The equipment emissions and dust produced during construction activities and grading, although of short-term duration, could be troublesome to workers and adjacent developments. Each of these is discussed in more detail below.

Construction-Related Exhaust Emissions - Heavy-duty trucks, earth movers, air compressors and power generators will be used during the construction phases. The operation of this equipment could result in a short-term increase in air pollutant levels for the project vicinity. The amount of pollutants emitted will depend upon the number, type (diesel or gasoline), and extent of operation of the construction equipment involved with the project. It can be anticipated that construction exhaust emissions will be comparable to other mixed use projects, with only short-term impacts, and will not have a significant effect on state or local air quality standards.

Fugitive Dust Emissions - Construction activities are a source of fugitive dust emissions that may have a temporary impact on local air quality. Building construction is one of the prevalent construction categories with the highest dust emission potential. Dust emissions typically result from land clearing, blasting, ground excavation, cut and fill operations, and construction of buildings, and infrastructure systems.

Dust emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. The volume of fugitive dust generated is proportional to the area of land being worked and the level of construction activity. Based upon field measurements of suspended dust emissions from apartment and shopping center construction projects, an approximate emission factor for construction operations is 1.2 tons of fugitive dust per acre of construction per month of activity.¹ However, this factor may be high as it was derived for a

¹ Environmental Protection Agency, AP-42 Emission Factors, 1977.

semi-arid climate (the study area is in a mediterranean climate with a lower precipitation-evaporation index), moderate silt content (30 percent), and medium activity level (medium activity level is undefined). In addition, SCAQMD Rule 403 requires the application of water twice daily which is estimated to reduce total fugitive dust by 50 percent.

These emissions are temporary and the mobile nature of the sources will not cause exposure to a single receptor for long periods. Areas nearby construction sites may be impacted by fugitive dust which could be considered a nuisance. The significance of short-term impacts will depend upon the proximity of construction activity to sensitive receptors, ie., residential areas.

LONG-TERM IMPACTS

Long-term air contaminant emissions at the project site will occur from both stationary and mobile emissions sources. The primary source of stationary emissions at the project site will be the combustion of natural gas for water heating and space heating in buildings. In addition, the electricity used within the site will add to emissions from fossil fuel combustion to generate electricity at power plants located outside the project.

Stationary source air pollutant emissions generated by development of the area will be very small in comparison to generated mobile source emissions. Mobile source emissions projected to result from future projects are vehicular pollutants released by increased vehicular traffic. Several pollutants are directly emitted from motor vehicles. Most notable are carbon monoxide (CO), oxides of nitrogen (NO_x), hydrocarbons (HC), and particulates. Carbon monoxide is the primary pollutant of major concern along roadways since air quality standards for CO along roadways are exceeded more frequently than the other pollutant standards.

An estimate of the total emissions produced by the project is shown in Table 5. The calculations for total emissions are contained in Appendix I, Addendum 8.

Table 5
PROJECT-GENERATED TOTAL EMISSIONS¹
(Tons/Year)

<u>Pollutant</u>	<u>Warehouse Industrial</u>	<u>Technology¹</u>	<u>Office</u>	<u>Total Emissions²</u>
TOG ³	9.3	29.8	34.7	73.8
CO	88.0	285.0	328.7	701.7
NOx	14.6	46.7	55.0	116.3

As proposed, buildout of the project will add to the total emissions released in the South Coast Basin. However, these emissions are not considered significant in relationship to total emissions in the basin area. Local air quality emissions are considered a more appropriate indicator of the project's impact on air quality.

While more than 400 pounds per day of CO emissions are emitted, almost all CO emissions are due to mobile sources. To the extent future project residents already live within the basin, emissions may not be increased by the magnitude listed for this project but "shifted" within the basin.

LOCAL AIR QUALITY

As previously mentioned, carbon monoxide (CO) concentrations are considered appropriate indicators of local air quality as impacted by roadways. Again, microscale CO concentrations are projected using the CALINE4 computer model. Worst-case conditions are assumed for meteorological, site and project traffic conditions. The following tables present the results of the CALINE4 modeling. Table 6 shows the CO emissions resulting from the vehicles utilizing the Wilmington Avenue and University Drive intersection. Tables 7 and 8 provide CO emissions resulting from vehicles utilizing the University Drive and Central Avenue intersection at the south-

1 Derived using EMFAC 7C:AQAT-2A SCAQMD Air Quality Analysis Handbook, California Resources Board, 1987.

2 Derived using CARB's URBEMIS #2 model.

3 Total hydrocarbons.

Table 6

MAXIMUM EIGHT-HOUR PM PEAK WITH MITIGATION
CARBON MONOXIDE CONCENTRATIONS (PPM) WITH AMBIENT CONCENTRATION¹

Southwest of Intersection (Single Family)	Distance from Centerline		
	15 m	30 m	45 m
Wilmington Avenue/University Drive			
Existing	17.5	15.0	13.5
Future Cumulative ²	17.5	14.3	12.4

Table 7

MAXIMUM EIGHT-HOUR PM PEAK WITH MITIGATION
CARBON MONOXIDE CONCENTRATIONS (PPM) WITH AMBIENT CONCENTRATION¹

Southeast of Intersection (Single Family)	Distance from Centerline		
	15 m	30 m	45 m
University Drive/Central Avenue			
Existing	12.9	11.9	11.4
Future Cumulative ²	11.1	7.7	7.1

Table 8

MAXIMUM EIGHT-HOUR PM PEAK WITH MITIGATION
CARBON MONOXIDE CONCENTRATIONS (PPM) WITH AMBIENT CONCENTRATION¹

Northwest of Intersection (Student Housing)	Distance from Centerline		
	15 m	30 m	45 m
University Drive/Central Avenue			
Existing	13.9	12.7	11.8
Future Cumulative ²	13.5	10.5	8.9

Table 9

MAXIMUM EIGHT-HOUR PM PEAK WITH MITIGATION
CARBON MONOXIDE CONCENTRATIONS (PPM) WITH AMBIENT CONCENTRATION¹

Southwest of Intersection (Single Family)	Distance from Centerline		
	15 m	30 m	45 m
University Drive/Central Avenue			
Existing	13.6	12.4	11.7
Future Cumulative ²	14.1	11.7	10.6

1 Figures include ambient concentrations of 9.57 ppm for 1987 and 6.9 ppm for 1992. State and federal standard for 1-hour average CO concentration is 20.0 ppm. All technical data is included in Appendix I, Addendum 8.

2 Without recommended traffic mitigation measures.

east corner and northwest of the project area, respectively. Table 9 provides CO emissions utilizing the Wilmington Avenue and Central Avenue intersection. The figures in Tables 6 through 9 include ambient concentrations. The data for future conditions in Tables 6 through 9 include the cumulative projects in the vicinity.

As indicated in Tables 6 through 9, the CO concentrations projected for future cumulative conditions (which includes the project) will actually be lower than existing concentrations at each receptor location. Standard AQMP standards assume the general public will purchase new cars over a period of time. This is due primarily to the fact that future motor vehicle emission rates are anticipated to be much lower than current emission rates due to continuing technological improvements in emission control devices and removal of older vehicles from the fleet. Therefore, the background ambient concentrations which are added to the results in these tables are also much lower in the future (6.9 ppm) due to the anticipated reduction in vehicular emissions. The existing ambient concentration is 9.57. If anticipated decreases in the future do not materialize, the projected future cumulative vehicular emissions at the modeled intersections would be higher.

As indicated in Tables 6 through 9, with ambient concentration the state and federal one-hour standard of 20 ppm is not exceeded at the modeled intersections for existing conditions. Under future cumulative conditions the state and federal CO standards are also not exceeded. Therefore, although the project does contribute slightly to increased emission levels, it will not significantly increase emission levels. In addition, the applicant has conducted studies that find 40 percent of employees within the business parks they have built live within three miles of the place of work.¹ The applicant anticipates that this situation will continue. The close proximity of employees to the workplace will continue to lower local air emissions.

The following mitigation measures are recommended to reduce significant existing and future cumulative air quality impacts.

1 Survey completed by Pasadena Research Institute, *Watson Industrial and Office Centers: Engines of Economic Growth*, p. 23f, January 1989.

The recommended circulation improvements are designed to improve traffic impacts as well as improve air quality impacts while improving traffic flows.

Mitigation Measures

1. The impact of short-term construction-generated emissions shall be reduced to the extent feasible by the following measures. The Building Department shall notify the developer when construction periods are prohibited and the Public Works Department shall approve all grading schedules.
 - a. Construction and grading will be carried out with periodic sprinkling of the site with water as needed and by paving the areas proposed for parking as soon as possible;
 - b. Restrict construction during second stage smog alerts.
2. Development of the project shall comply with all existing SCAQMD rules and regulations. In addition, development should apply, to the extent feasible, to all AQMP recommendations for commercial and office land uses. The Director of Planning shall approve the AQMP recommendations incorporated into the project and the Building Department shall ensure their completion.
 - a. Employers shall comply with all provisions of Rule XV: Trip Reduction/Indirect Source - Increases in Average Vehicle Ridership.
 - b. Developer-provided bus turnouts, bus shelters as specified by SCRTD and bicycle racks in the commercial area.
 - c. Provide for convenient pedestrian access to transit stops by construction of sidewalks, etc. Construction shall be verified by the Engineering Department prior to occupancy.

TRANSPORTATION/CIRCULATION

A study of traffic impacts associated with the project was prepared by DKS Associates in October 1989 and has been subsequently updated to reflect city staff comments. The revised study, dated August 1990, is included in the technical appendices and reflects changes based on review by the city and the public. The methodology used to analyze the traffic impacts was the critical movement analysis. In using this method, the intersection conditions within the project vicinity are examined and the roadway's ability to accommodate traffic is determined. Roadway geometry (ie., numbers of lanes, lane width, etc.) and traffic signal operations are taken into consideration in this analysis. Eleven intersections were chosen for analysis by the City and are displayed in Table 10.

Table 10
TRAFFIC STUDY INTERSECTIONS

<u>Intersection</u>	<u>Intersection Control</u>
Central Avenue/SR-91 Westbound Ramp	Signal
Central Avenue/SR-91 Eastbound Ramp	Signal
Central Avenue/Victoria Street	Signal
Central Avenue/University Drive	Stop Sign
Central Avenue/Del Amo Boulevard	Signal
Wilmington Avenue/SR-91 Westbound Ramp	Signal
Wilmington Avenue/SR-91 Eastbound Ramp	Signal
Wilmington Avenue/Victoria Street	Signal
Wilmington Avenue/University Drive	Signal
Wilmington Avenue/Del Amo Boulevard	Signal
Avalon Boulevard/University Drive	Signal

The analysis of these intersections includes calculation of a volume to capacity (V/C) ratio and a level of service (LOS) for each intersection. The level of service denotes an intersection's operating efficiency and ranges from A to F. LOS A denotes excellent operating conditions while LOS F denotes extremely congested conditions. The complete traffic impact study appears in Appendix II and the study is summarized in this section.

Existing Conditions

OFFSITE ACCESS

The site is currently bounded by two major highways and one secondary highway (see Exhibit 7). Victoria Street to the north and Wilmington Avenue to the east of the site are designated in the city's General Plan as major highways. Victoria Street connects to the I-110 freeway west of the site and currently contains one lane of traffic in each direction plus a two-way left-turn lane directly north of the site. West of Central Avenue, Victoria Street has two lanes in each direction plus a two-way left-turn median lane. Wilmington Avenue is a north-south arterial that connects to both the I-405 freeway and the SR-91 freeway and consists of two lanes of traffic in each direction. From the I-405 freeway to Del Amo Boulevard, the travel lanes are divided by a raised median. From Del Amo Boulevard to Glenn Curtiss Street, the right-of-way contains a two-way, left-turn lane and from Glenn Curtiss Street to Victoria Street, the lanes are divided only by a double yellow stripe.

University Drive, an east-west roadway, exists along the south side of the project site and is designated as a secondary highway in the city's General Plan. University Drive runs from Avalon Boulevard to a point east of the site and consists of two through lanes in each direction plus a bicycle lane on the north side of the roadway. No roadway currently exists along the westerly edge of the project site. However, Central Avenue is proposed to be constructed west of the site to major highway standards with an 84-foot curb-to-curb paved section within a 100-foot right-of-way.

Regional access exists within the vicinity of the project site primarily via the Artesia Freeway (SR-91). Access to the I-405 freeway is also provided via Wilmington Avenue. The I-405 freeway is located approximately two miles south of the site. The Harbor Freeway (I-110) west of the site, as well as the I-710 freeway east of the site, are also located approximately two miles from the site.

Other regional roadways in the project vicinity include Del Amo Boulevard and Avalon Boulevard which are designated as major highways in the city's General Plan. Del Amo Boulevard is an east-west roadway running from Avalon Boulevard to the I-710 freeway which continues into the City of Long Beach crossing the I-710 freeway. Near the project site, two lanes of traffic exist in each direction, divided by a raised median. Avalon Boulevard is a north-south arterial which consists of three through lanes in each direction divided by a raised median. Avalon Boulevard provides access from the SR-91 freeway to the I-405 freeway.

Table 11 displays existing operating conditions including AM and PM V/C ratios and levels of service. The results of the traffic study show that all intersections presently operate at an acceptable level of service (LOS D or better) in the AM peak hour, except for the Wilmington Avenue/SR-91 eastbound freeway ramps. The intersection of Wilmington Boulevard/SR-91 freeway westbound ramps and Avalon Boulevard/University Drive operate at LOS E in the PM peak, and the Wilmington Avenue/SR-91 freeway eastbound ramps operate at LOS E in the AM and LOS F in the PM peak hours. All other intersections operate at acceptable LOS D or better during both peak hour periods.

Table 11
EXISTING INTERSECTION OPERATING CONDITIONS
(Peak Hour Volume/Capacity Ratio and Level of Service)

Intersection	AM Peak Hour		PM Peak Hour	
	V/C	LOS	V/C	LOS
Central Avenue/SR-91 Westbound Ramps	0.59	A	0.68	B
Central Avenue/SR-91 Eastbound Ramps	0.70	C	0.80	D
Central Avenue/Victoria Street	0.40	A	0.51	A
Central Avenue/University Drive	0.24	A	0.27	A
Central Avenue/Del Amo Boulevard	0.34	A	0.45	A
Wilmington Avenue/SR-91 Westbound Ramps	0.85	D	0.97	E
Wilmington Avenue/SR-91 Eastbound Ramps	0.92	E	1.03	F
Wilmington Avenue/Victoria Street	0.70	C	0.69	B
Wilmington Avenue/University Drive	0.68	B	0.71	C
Wilmington Avenue/Del Amo Boulevard	0.70	C	0.84	D
Avalon Boulevard/University Drive	0.82	D	0.92	E

ONSITE CIRCULATION

The site is currently void of any internal street system.

A segment of Glenn Curtiss Street was constructed for the TRW site at the southeast corner of the site. Glenn Curtiss Street is an 80-foot right-of-way, four-lane divided road including two eastbound lanes with an additional left-turn lane at Wilmington Avenue and one westbound lane. As the project develops, Glenn Curtiss Street will extend west to connect with the extension of future Central Avenue between University Drive and Victoria Street.

In addition to Glenn Curtiss Street, five internal local streets will be constructed to city standards as the project develops (Exhibit 9). Primary access to the site will be provided by seven access points, two of which are located on Wilmington Avenue. The first is approximately 1,300 feet south of the Wilmington Avenue/Victoria Street intersection and the second is the existing Glenn Curtiss Street. Two access points also will be provided to the site from Victoria Street. One is approximately 950 feet west of the Wilmington Avenue/Victoria Street intersection and the second is 2,200 feet west of the same intersection. Three major access points will be provided along Central Avenue. In addition, several secondary access points which will serve individual parcels are planned for Victoria Street, Wilmington Avenue, and Central Avenue with a secondary access point on University Drive west of Central Avenue. These access points have been designed to accommodate maximum peak hour volumes to/from individual parcels.

Impacts

The potential future traffic impacts were analyzed in two phases: the impacts of future traffic not related to the project, and potential project-related traffic impacts. Traffic impacts in both cases are projected in the Traffic Study for a 10- year period to the year 1999.

Future Traffic, Non-Project-Related

To analyze future traffic impacts, cumulative development in the project vicinity was examined. Based upon discussions with the City of Carson, a total of four significant project sites exist within the vicinity of the

project site. The location, size and forecast trip generation rates for each project are listed in Table 12 and shown on Exhibit 26. The cumulative projects are expected to generate 1,570 vehicle trips during the AM peak hour and 1,470 during the PM peak hour. The computer traffic model developed as part of this EIR distributed the cumulative project trips to the adjacent roadway system. This trip distribution is conceptually shown in Exhibit 27.

Table 13 lists the existing traffic conditions and forecast existing plus cumulative traffic conditions. Primary impacts associated with cumulative projects occur at the Wilmington Avenue/SR-91 freeway intersections Avalon Boulevard/University Drive and the Wilmington Avenue/Del Amo Boulevard intersection. These intersections are expected to exceed acceptable level of service D either in the AM peak or PM peak or both with the addition of cumulative project traffic.

Future Traffic with the Project

The traffic study estimated a project traffic generation of 43,700 daily trips; with 4,560 occurring in the AM peak hour and 4,900 occurring in the PM peak hour. The traffic study for the project utilized local rates based upon 24-hour traffic counts at similar developments including the TRW site.

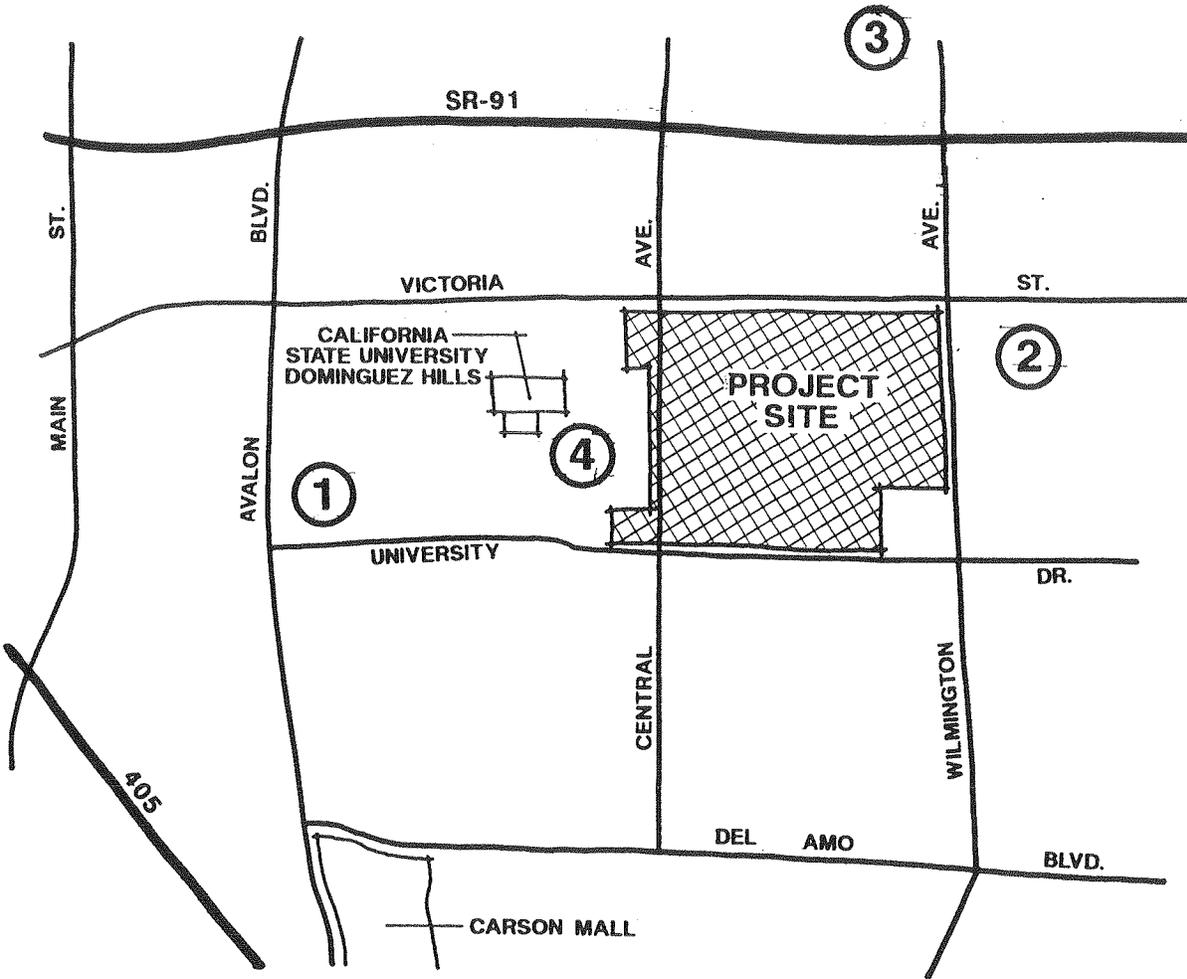
Based on daily traffic volumes, the combination of project-related traffic and cumulative projects, significant impacts will occur as a result of the project if no improvements are constructed. Roadways which will exceed an acceptable level of service in the AM peak hour are Central Avenue/Victoria Street (LOS F), Wilmington Avenue/SR-91 westbound ramps (LOS F), Wilmington Avenue/SR-91 eastbound ramps (LOS E), Wilmington Avenue/University Drive (LOS F), Wilmington Avenue/Del Amo Boulevard (LOS F), and Avalon Boulevard/University Drive (LOS E) (see Table 14).

All the intersections that exceed an acceptable level of service in the AM peak hour also exceed an acceptable level of service in the PM peak hour. Two additional intersections exceed an acceptable level of service in the PM peak hour, Central Avenue/SR-91 eastbound ramps and Wilmington Avenue/

Cumulative Project Trip Generation									
Cumulative Project	Location	Size	AM Peak Hour			PM Peak Hour			
			In	Out	Total	In	Out	Total	
1. Lewis Homes	NE Corner of University and Avalon Blvd.	100 SDU ¹	20	55	75	65	40	105	
2. Dominguez Technology Center East	East of Wilmington Ave. and south of Victoria St.	1,340 KSF ² Warehouse/Industrial	690	75	765	80	725	805	
3. City of Compton Industrial Development	Along Wilmington Ave. north of SR 91	300 KSF Industrial	155	20	175	20	160	180	
4. California State University	Current University grounds	3,100 Full Time Student Equivalents	460	95	555	125	250	375	
			1,325	245	1,570	290	1,175	1,465	

Notes:
¹SDU = Single Family Dwelling Units
²KSF = Thousand Square Feet

University growth based on current student population of 8,100 students (full and part-time) and annual growth rate of five percent for 10 years (per CSUDH Executive Director of Facilities Planning).

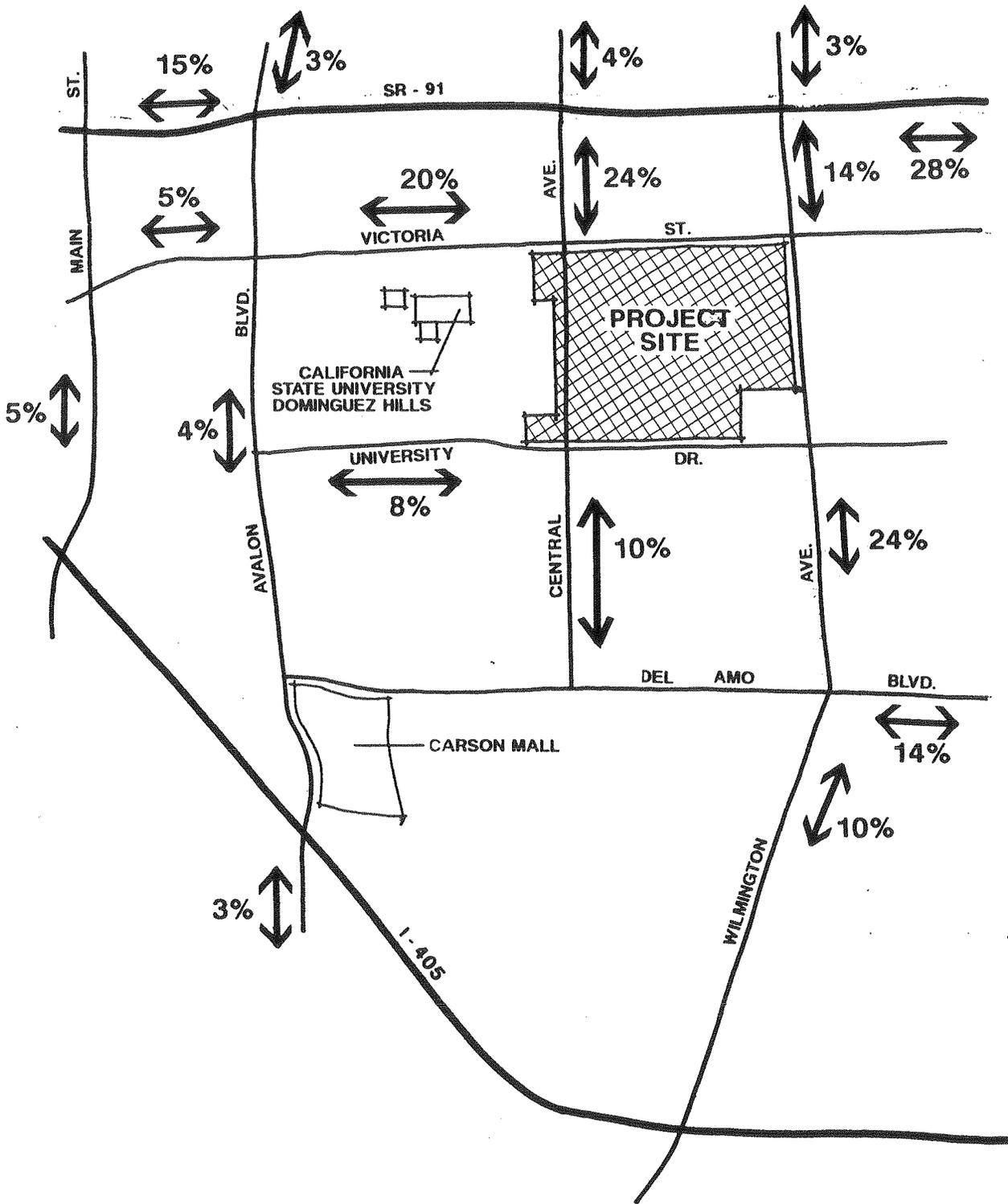


LEGEND

- ① LEWIS DEVELOPMENT HOMES
- ② DOMINGUEZ TECHNOLOGY CENTER EAST
- ③ CITY OF COMPTON INDUSTRIAL DEVELOPMENT
- ④ CALIFORNIA STATE UNIVERSITY GROWTH

**CUMULATIVE PROJECT LOCATIONS
DOMINGUEZ
TECHNOLOGY CENTRE**





**ESTIMATED TRIP
DISTRIBUTION PERCENTAGE
DOMINGUEZ
TECHNOLOGY CENTRE**



Intersection	AM Peak Hour				PM Peak Hour			
	Existing		Existing + Cumulative		Existing		Existing + Cumulative	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/SR-91 WB Ramps	0.59	A	0.60	B	0.68	B	0.68	B
Central Avenue/SR-91 EB Ramps	0.70	C	0.70	C	0.80	D	0.84	D
Central Avenue/Victoria Street	0.40	A	0.49	A	0.51	A	0.61	B
Central Avenue/University Drive	0.24	A	0.26	A	0.27	A	0.30	A
Central Avenue/Del Amo Boulevard	0.34	A	0.34	A	0.45	A	0.45	A
Wilmington Avenue/SR-91 WB Ramps	0.85	D	0.90	E	0.97	E	1.02	F
Wilmington Avenue/SR-91 EB Ramps	0.92	E	0.96	E	1.03	F	1.09	F
Wilmington Avenue/Victoria Street	0.70	C	0.73	C	0.69	B	0.86	D
Wilmington Avenue/University Drive	0.68	B	0.76	C	0.71	C	0.77	C
Wilmington Avenue/Del Amo Boulevard	0.70	C	0.79	C	0.84	D	0.92	E
Avalon Boulevard/University Drive	0.82	D	0.85	D	0.92	E	0.93	E

TABLE 13

**Existing and Existing Plus Cumulative and
Existing Plus Cumulative Plus Proposed Project
Intersection Operating Conditions**

Intersection	AM PEAK HOUR					
	Existing		Existing + Cumulative Project		Existing + Cumulative + Proposed Project	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
Central Avenue/SR-91 WB Ramps	0.59	A	0.60	B	0.82	D
Central Avenue/SR-91 EB Ramps	0.70	C	0.70	C	0.87	D
Central Avenue/Victoria Street	0.40	A	0.49	A	1.46	F
Central Avenue/University Drive	0.24	A	0.26	A	0.77	C
Central Avenue/Del Amo Boulevard	0.34	A	0.34	A	0.50	A
Wilmington Avenue/SR-91 WB Ramps	0.85	D	0.90	E	1.25	F
Wilmington Avenue/SR-91 EB Ramps	0.92	E	0.96	E	0.98	E
Wilmington Avenue/Victoria Street	0.70	C	0.73	C	0.81	D
Wilmington Avenue/University Drive	0.68	B	0.76	C	1.04	F
Wilmington Avenue/Del Amo Boulevard	0.70	C	0.79	C	1.21	F
Avalon Boulevard/University Drive	0.82	D	0.85	D	0.99	E

Victoria Street (see Table 15). City policy is that a volume/capacity of 0.94 or less where surface streets interchange with freeway ramps is acceptable. With the mitigations recommended for the project, the Central Avenue/SR-91 eastbound ramps are projected to operate at a volume/capacity of 0.84 (Table 16).

However, since there is the possibility that the recommended improvements to the Wilmington Avenue/SR-91 freeway interchange may be delayed beyond the control of the applicant or city, resulting in a volume/capacity ratio above 0.94, including the cumulative impact in the Statement of Overriding Considerations (SOC) for the project is required. With mitigation, the Wilmington/Victoria intersection is projected to operate at acceptable levels of service for both peak hour periods (Table 16).

Central Avenue is currently not improved between University Drive and Victoria Street, but will be constructed as part of the project. Approximately 22,000 to 25,000 vehicle trips per day will utilize Central Avenue between University Drive and Victoria Street. The University is expected to generate additional daily trips as well as people going to work. Therefore, Central Avenue will require two lanes of through traffic in each direction. The traffic consultant recommends that Central Avenue be constructed to an 84-foot curb-to-curb within a 100-foot right-of-way. The Traffic Engineer indicates that this 84-foot roadway would serve forecast volumes. These improvements will need to be coordinated with California State University, Dominguez Hills. The applicant will provide half-street width improvement for the central 2,300 feet of roadway and full width improvements 850 feet south of Victoria Avenue and 400 feet north of University Drive.

The conditions proposed for the specific plan limit the project to 100,000 square feet of support commercial uses. Since many employees will walk to these support commercial facilities, they are estimated primarily to serve local employees. Trip generation rates for support commercial uses are often discounted by as much as forty percent due to their special operational characteristics and due to the fact that much of their patronage is derived from pass-by trips which are already on the roadway system (per Institute of Transportation Engineers Trip Generation Manual, 4th Edi-

**Existing and Existing Plus Cumulative and
Existing Plus Cumulative Plus Proposed Project
Intersection Operating Conditions**

Intersection	PM PEAK HOUR					
	Existing		Existing + Cumulative Project		Existing + Cumulative + Proposed Project	
	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/SR-91 WB Ramps	0.68	B	0.68	B	0.88	D
Central Avenue/SR-91 EB Ramps	0.80	D	0.84	D	1.18	F
Central Avenue/Victoria Street	0.51	A	0.61	B	1.35	F
Central Avenue/University Drive	0.27	A	0.30	A	0.57	A
Central Avenue/Del Amo Boulevard	0.45	A	0.45	A	0.65	B
Wilmington Avenue/SR-91 WB Ramps	0.97	E	1.02	F	1.13	F
Wilmington Avenue/SR-91 EB Ramps	1.03	F	1.09	F	1.28	F
Wilmington Avenue/Victoria Street	0.69	B	0.86	D	1.08	F
Wilmington Avenue/University Drive	0.71	C	0.77	C	1.04	F
Wilmington Avenue/Del Amo Boulevard	0.84	D	0.92	E	1.29	F
Avalon Boulevard/University Drive	0.92	E	0.93	E	1.10	F

TABLE 15

**Future AM and PM Peak Hour Conditions
Without and With On-Site Mitigations**

Intersection	AM Peak Hour			PM Peak Hour		
	Without Mitigation		With Mitigation	Without Mitigation		With Mitigation
	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/Victoria Street	1.46	F	0.84	D	1.35	F
Central Avenue/University Drive	0.77	C	0.57	A	0.57	A
Wilmington Avenue/Victoria Street	0.81	D	0.88	D	1.08	F
Wilmington Avenue/University Drive	1.04	F	0.82	D	1.04	F

**Future AM and PM Peak Hour Conditions
Without and With Off-Site Mitigations**

Intersection	AM Peak Hour			PM Peak Hour		
	Without Mitigation		With Mitigation	Without Mitigation		With Mitigation
	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/SR-91 WB	0.82	D	0.82	D	0.88	D
Central Avenue/SR-91 EB	0.87	D	0.80	D	1.18	F
Wilmington Avenue/SR-91 WB	1.25	F	0.85	D	1.13	F
Wilmington Avenue/SR-91 EB	0.98	E	0.80	D	1.28	F
Wilmington Avenue/Del Amo Boulevard	1.21	F	0.84	D	1.29	F
Avalon Boulevard/University Drive	0.99	E	0.87	D	1.10	F

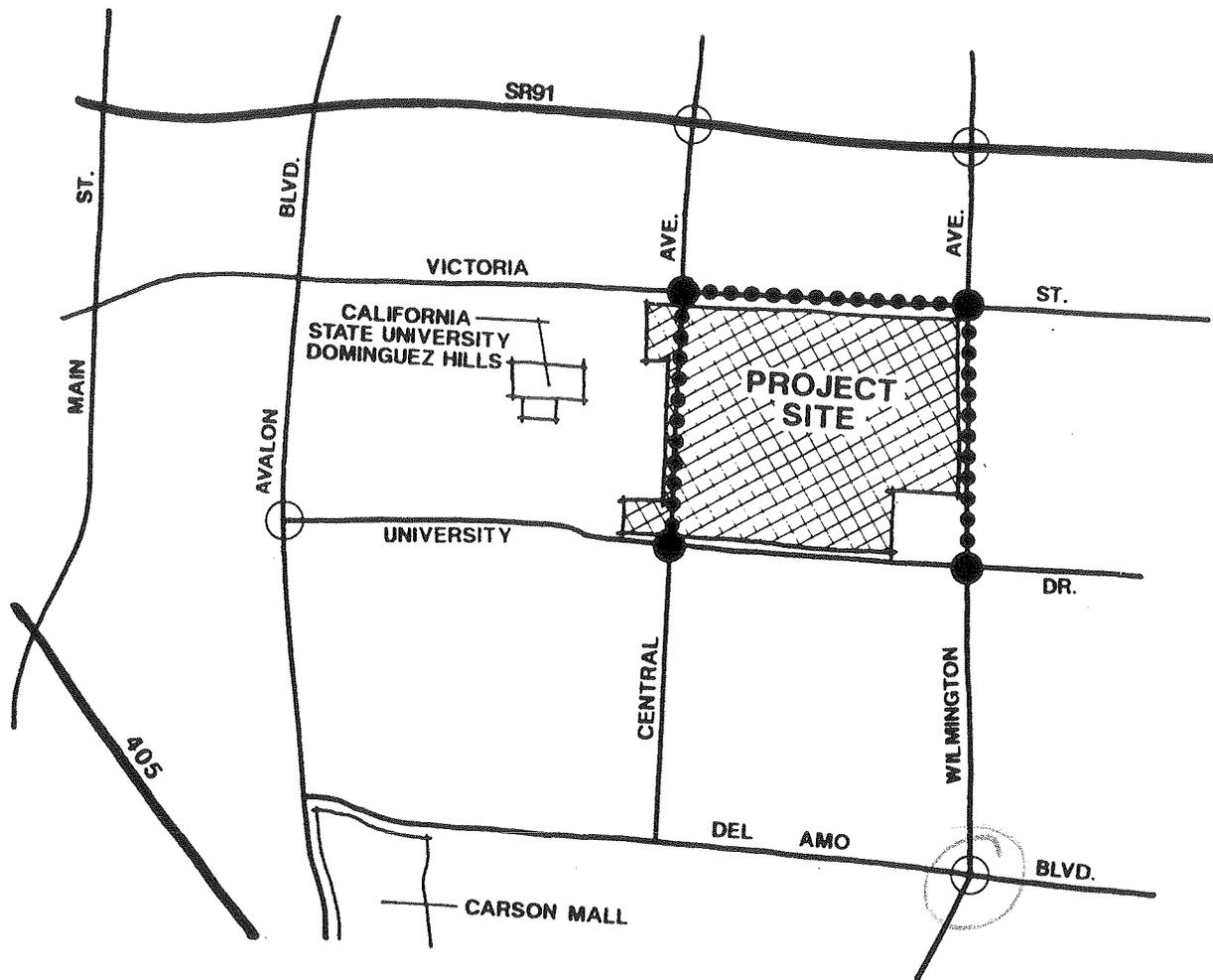
tion). The actual reduction in commercial trips for this project is assumed to be 100 percent because nearly all trips will be internal to the project or linked to the home-to-work commute. Many support commercial uses operate with limited hours and are not open on weekends when onsite employee use is minimal. If the support commercial uses are a portion of a large in-line shop complex, each use may occupy only 1,000- 2,000 square feet. Larger support commercial uses, like office supplies, primarily serve a local market. The primary environmental concern related to support commercial uses has been the potential of additional trips. However, the traffic consultant has indicated that 100,000 square feet of local serving commercial uses could be accommodated within the project without deterioration in service levels.

There are no additional impacts, due solely to the project, which are not discussed as individual impacts, and mitigations are provided for these items. The impacts of cumulative projects (Table 12) are included in the traffic, air quality and noise analysis because the trips generated by those projects are included in the traffic modeling completed for the EIR, and mitigations are proposed for the cumulative traffic impact.

All mitigation measures identified in the Final EIR which may impact Caltrans facilities must be implemented prior to occupancy of Phase I per the EIR and development agreement, except to the extent of the findings of the Statement of Overriding Considerations apply to implementation of the recommended Caltrans right-of-way.

Mitigation Measures

The following roadway and traffic signal improvements are recommended in the traffic study to be constructed by the developer prior to project buildout to mitigate project-related traffic conditions. Upon construction, these improvements result in an acceptable level of service on all roadway segments and intersections. Exhibit 28 shows the locations of roadway segments and intersections to be improved. Any work or construction to occur within the state's right-of-way will require a Caltrans encroachment permit. If this is the case, it is recommended that daily



-  OFF-SITE INTERSECTION IMPROVEMENT
-  ON-SITE INTERSECTION IMPROVEMENT
-  ROADWAY IMPROVEMENT

**MITIGATION LOCATIONS
DOMINGUEZ
TECHNOLOGY CENTRE**

coordination with the Permits Branch be adopted to avoid any delays. Appendix F in the DKS Associates traffic study (June 1990) contains conceptual improvement diagrams which illustrate each improvement. A comparison of Existing, Phase 1 and Phase 2 AM and PM peak-hour intersection operating conditions are located in Tables 17 and 18. Tables 19 and 20 compare onsite existing and future intersection operating conditions with mitigation measures for all phases.

Onsite Mitigation Measures

Onsite mitigation measures are defined as improvements within the project boundaries or directly adjacent to the project frontage. The following mitigation measures are proposed as onsite mitigation measures.

1. Central Avenue (University Drive to Glenn Curtiss Street, phase 1; and Glenn Curtiss to Victoria Street, phase 2) should be constructed with a minimum of two through lanes in each direction plus a two-way left-turn lane and no parking anytime. This cross-section should be accommodated within an 84-foot curb-to-curb roadway and 100-foot right-of-way, consistent with City of Carson standards for a major highway.
2. The portion of Victoria Street directly adjacent to the project site (Central Avenue to Wilmington Avenue) is currently not built to major highway standards, although west of Central Avenue it is 84 feet wide curb-to-curb and east of Wilmington it is also improved. The segment between Central Avenue and Wilmington should be widened to match the cross-section west of Central Avenue. At mid-block it should consist of two through lanes in each direction plus a center two-way left-turn lane, or alternatively should include a raised median with openings provided per agreement with the City of Carson, the City of Compton and the project developers.
3. It is recommended that Wilmington Avenue (University Drive to Victoria Street) be widened to accommodate three through lanes in each direction plus a two-way left-turn lane. A transition area should be striped north of Victoria Street where Wilmington Avenue would return to two lanes in each direction. If future traffic conditions warrant,

Existing, Phase 1 and Phase 2 AM Peak Hour
Intersection Operating Conditions

Intersection	AM PEAK HOUR					
	Existing		Phase 1		Phase 2	
	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/SR-91 WB Ramps	0.59	A	0.69	B	0.76	C
Central Avenue/SR-91 EB Ramps	0.70	C	0.73	C	0.81	D
Central Avenue/Victoria Street	0.40	A	0.84	D	1.17	F
Central Avenue/University Drive	0.24	A	0.46	A	0.60	B
Central Avenue/Del Amo Boulevard	0.34	A	0.39	A	0.40	A
Wilmington Avenue/SR-91 WB Ramps	0.85	D	1.03	F	1.15	F
Wilmington Avenue/SR-91 EB Ramps	0.92	E	0.97	E	0.98	E
Wilmington Avenue/Victoria Street	0.70	C	0.77	C	0.81	D
Wilmington Avenue/University Drive	0.68	B	0.89	D	1.01	F
Wilmington Avenue/Del Amo Boulevard	0.70	C	0.95	E	1.12	F
Avalon Boulevard/University Drive	0.82	D	0.90	E	0.95	E

Intersection	PM PEAK HOUR					
	Existing		Phase 1		Phase 2	
	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/SR-91 WB Ramps	0.68	B	0.76	C	0.83	D
Central Avenue/SR-91 EB Ramps	0.80	D	0.98	E	1.10	F
Central Avenue/Victoria Street	0.51	A	0.86	D	1.12	F
Central Avenue/University Drive	0.27	A	0.39	A	0.50	A
Central Avenue/Del Amo Boulevard	0.45	A	0.60	B	0.64	B
Wilmington Avenue/SR-91 WB Ramps	0.97	E	1.06	F	1.10	F
Wilmington Avenue/SR-91 EB Ramps	1.03	F	1.17	F	1.23	F
Wilmington Avenue/Victoria Street	0.69	B	0.93	E	1.01	F
Wilmington Avenue/University Drive	0.71	C	0.96	E	1.07	F
Wilmington Avenue/Del Amo Boulevard	0.84	D	1.06	F	1.21	F
Avalon Boulevard/University Drive	0.92	E	0.98	E	1.06	F

**Existing and Future Intersection Operating Conditions
With On-Site Mitigation Measures and With All Mitigation Measures
AM Peak Hour**

<u>Intersection</u>	Existing		Phase 3 (100%) Without Mitigation		Phase 1 (40%) With On-Site Mitigation ⁽¹⁾		Phase 2 (78%) With On-Site Mitigation ⁽¹⁾		Phase 3 (100%) With On-Site Mitigation ⁽¹⁾		Phase 3 (100%) With All Mitigation	
	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>	<u>V/C</u>	<u>LOS</u>
Central Avenue/Victoria Street	0.40	A	1.46	F	0.48	A	0.69	B	0.84	D	0.84	D
Central Avenue/University Drive	0.24	A	0.77	C	0.35	A	0.45	A	0.57	A	0.57	A
Wilmington Avenue/Victoria Street	0.70	C	0.81	D	0.69	B	0.74	C	0.88	D	0.88	D
Wilmington Avenue/University Drive	0.68	B	1.04	F	0.70	C	0.77	C	0.82	D	0.82	D
Central Avenue/SR-91 WB	0.59	A	0.82	D	0.69	B	0.76	C	0.82	D	0.82	D
Central Avenue/SR-91 EB	0.70	C	0.87	D	0.73	C	0.81	D	0.87	D	0.80	D
Wilmington Avenue/SR-91 WB	0.85	D	1.25	F	1.03	F	1.15	F	1.25	F	0.85	D
Wilmington Avenue/SR-91 EB	0.92	E	0.98	E	0.97	E	0.98	E	0.98	E	0.80	D
Wilmington Avenue/Del Amo Blvd.	0.70	C	1.21	F	0.85	D	0.98	E	1.21	F	0.84	D
Avalon Boulevard/University Drive	0.82	D	0.99	E	0.80	D	0.84	D	0.87	D	0.87	D

(1) - Includes some off-site mitigation which does not require taking of additional right-of-way (i.e., restriping at Wilmington Avenue/Del Amo Boulevard, median reconstruction at Avalon Boulevard/University Drive).

Existing and Future Intersection Operating Conditions
With On-Site Mitigation Measures and With All Mitigation Measures
PM Peak Hour

Intersection	Existing		Phase 3 (100%) Without Mitigation		Phase 1 (40%) With On-Site Mitigation(1)		Phase 2 (78%) With On-Site Mitigation(1)		Phase 3 (100%) With On-Site Mitigation(1)		Phase 3 (100%) With All Mitigation	
	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Central Avenue/Victoria Street	0.51	A	1.35	F	0.57	A	0.69	B	0.85	D	0.85	D
Central Avenue/University Drive	0.27	A	0.57	A	0.45	A	0.55	A	0.50	A	0.50	A
Wilmington Avenue/Victoria Street	0.69	B	1.08	F	0.72	C	0.77	C	0.83	D	0.83	D
Wilmington Avenue/University Drive	0.71	C	1.04	F	0.72	C	0.73	C	0.77	C	0.77	C
Central Avenue/SR-91 WB	0.68	B	0.88	D	0.76	C	0.83	D	0.88	D	0.88	D
Central Avenue/SR-91 EB	0.80	D	1.18	F	0.98	E	1.10	F	1.18	F	0.84	D
Wilmington Avenue/SR-91 WB	0.97	E	1.13	F	1.06	F	1.10	F	1.13	F	0.86	D
Wilmington Avenue/SR-91 EB	1.03	F	1.28	F	1.17	F	1.23	F	1.28	F	0.93	E
Wilmington Avenue/Del Amo Blvd.	0.84	D	1.29	F	0.92	E	1.13	F	1.29	F	0.89	D
Avalon Boulevard/University Drive	0.92	E	1.10	F	0.76	C	0.83	D	0.88	D	0.88	D

(1) - Includes some off-site mitigation which does not require taking of additional right-of-way (i.e., restriping at Wilmington Avenue/Del Amo Boulevard, median reconstruction at Avalon Boulevard/University Drive).

the segment north of Victoria Street (to SR-91) could be restriped to provide three lanes in each direction.

4. The primary mitigation at the Central Avenue/Victoria Street intersection will be the construction of Central Avenue south of Victoria Street in phase two and widening of Victoria Street east of Central Avenue in phase one. The eastbound approach should also be restriped to provide two through lanes plus a double left-turn lane; and the westbound approach should be widened to provide for three through lanes, an exclusive left-turn lane and an exclusive right-turn lane. The southbound approach should be restriped to provide two through lanes plus an exclusive double left-turn lane. The traffic signal will require substantial modification to provide for the northbound movement and widened Victoria Street. The forecast a.m. peak hour volume/capacity ratio with these improvements is 0.84 and the level of service is D, while during the p.m. peak hour the intersection will operate at V/C equal to 0.85 and LOS D.
5. The primary mitigation at the Central Avenue/University Drive intersection will be the construction of Central Avenue north of University Drive to major highway standards. Also, a traffic signal will be installed (the intersection is currently stop sign controlled). An exclusive left-turn lane should be striped on the eastbound approach. With these improvements, the intersection is forecast to operate during the a.m. peak hour at a V/C of 0.57 and LOS A, and V/C of 0.50 and LOS A during the p.m. peak hour.
6. At the Wilmington Avenue/Victoria Street intersection Victoria Street should be widened and improved on the east leg to provide an 84-foot curb-to-curb section per the City standard for major highways. The northbound approach should also be widened to provide three through lanes plus a left-turn lane. This will require widening of the existing curb-to-curb cross section to the ultimate 84-foot cross section which is consistent with the roadway width south of Glenn Curtiss Street. The Victoria Street eastbound approach should be improved to include dual left-turn lanes, two through lanes and an exclusive right-turn lane. Signal system modifications will be required to accommodate the geometric improvements. The a.m. and p.m. peak

hour V/C ratios and level of service following implementation of these improvements are forecast as 0.88, LOS D, and 0.83, LOS D, respectively.

7. The recommended mitigation at the Wilmington Avenue/University Drive intersection is to provide additional capacity for through vehicles in the north and southbound directions. This will require restriping the existing 84-foot roadway. This improvement (to three through lanes in each direction) should be maintained to Victoria Street. North of Victoria Street, striping should be provided to transition back to two through lanes each way northbound and southbound until three lanes are required for moving traffic. Second eastbound and westbound left-turn lanes should also be provided. Signal system modifications will be required to accommodate these recommended roadway improvements. With these mitigation measures, the intersection would operate at V/C of 0.82, LOS D during the a.m. peak hour, and V/C of 0.77, LOS C during the p.m. peak hour.

Offsite Mitigation Measures

Mitigation measures are also proposed for six offsite intersections which may be impacted by traffic generated by the proposed project. Several of these offsite intersections are forecast to operate at unacceptable level of service E or F before implementation of the project. The cost of any recommended improvements at these intersections should therefore be equitably allocated among the project, other future traffic generators, and other sources where appropriate.

The developers should work closely with the city to determine equitable costs for offsite improvements. After funding of the development's "fair share" costs, the failure of other parties to complete the improvements should not delay project approval. The developers have control over payment of costs allocated to them but cannot control actual implementation of the recommended improvements following payment.

8. A second southbound left-turn lane should be constructed on Avalon Boulevard at University Drive. This mitigation measure could be provided

within the roadway area currently taken by the existing extra wide raised median. With this improvement, the a.m. peak hour V/C ratio would move to 0.87, LOS D, and the p.m. would move to 0.88, LOS D.

9. The Central Avenue/SR-91 eastbound and westbound frontage roads are in close proximity to each other (approximately 500 feet). Mitigation measures at these two intersections should be implemented simultaneously to maintain consistent geometry. The first mitigation measure is redesign of the lane configuration on the bridge between the two intersections. The existing raised median should be eliminated and two full left-turn lanes should be provided in the north and southbound directions which span the length of the bridge. This would utilize more of the existing bridge surface capacity and increase left-turn storage length. Two northbound through lanes and three southbound through lanes should also be provided on the bridge. A dual exclusive right-turn lane should also be provided via reconstruction and widening of the northbound approach. The eastbound off-ramp should also be restriped from three lanes to four lanes including one exclusive left-turn lane, one shared left-through, one through lane and one right-turn lane. With these improvements, both intersections are forecast to operate at acceptable LOS D or better during the morning and evening peak hour periods.

10. The Wilmington Avenue/SR-91 eastbound and westbound ramps/intersections shall be improved together. On the bridge, the raised median should be eliminated and two full-length left-turn lanes should be provided (one northbound and one southbound). Three lanes should be provided on the bridge in the southbound direction with two through lanes and one shared through/left lane. This will provide extra capacity for heavier traffic flows in the southbound direction during the morning peak commuter period. A dual exclusive right-turn lane will be required in the northbound direction at the eastbound on-ramps. This will require purchase of additional right-of-way. An exclusive right-turn lane should be provided in the southbound direction at the westbound on-ramp, the westbound off-ramp should be restriped to provide a double left-turn lane instead of the existing single left. With the above improvements, both intersections are expected to operate at LOS

D or better during the a.m. peak period , and LOS E (V/C 0.94) or better during the p.m. peak hour.

11. The major capacity constraint at the Wilmington/SR-91 frontage road intersection occurs in the north and southbound directions. The recommended mitigation is parking removal and reconstruction of both approaches to provide three through lanes in each direction. In the southbound direction, double left-turn lanes are also recommended. A third eastbound through lane is also recommended to accommodate p.m. peak traffic flows. An exclusive right-turn lane is also recommended in the westbound direction.

Several alternative design schemes are feasible to accommodate this lane configuration. The mitigation sketches in the appendix illustrate both schemes, and they are described below.

Wilmington Avenue. Two alternative designs would accomplish the desired mitigation. The first is to widen the southbound approach by five feet on each side as shown in the Wilmington widening Alternative 1 sketch. This scheme does not require any widening on the northbound approach. The second alternative is to widen the southbound approach by ten feet on the west side of Wilmington Avenue with no widening required on the east side. With this scheme, the northbound approach would also require widening as shown in the Wilmington Widening Alternative 2 sketch.

Del Amo Boulevard Mitigation. The proposed lane configuration could be accommodated within the existing curb-to-curb width via reconstructing the existing raised median on Del Amo Boulevard and shifting it two feet to the north. This would leave 35 feet for travel lanes (plus a five-foot bicycle lane) on the north side of the median and the remaining width on the south. The sketch in the appendix illustrates the proposed improvement.

The developer should work with the City to determine the mitigation strategy which is most feasible and which will ultimately be implemented. With these improvements, the a.m. peak hour V/C is forecast to be 0.84, LOS D, while the intersection will operate at V/C 0.89, LOS D during the p.m. peak hour.

It should be noted that traffic conditions on both Wilmington Avenue and Avalon Boulevard may be further mitigated by the construction of Central Avenue from University Drive to Victoria Street. This key local route will remove existing traffic from both parallel routes. The potential improvement in traffic flow on Wilmington Avenue and Avalon Boulevard has not been included in the analysis because the exact traffic redistribution cannot be predicted and to assure that this study reflects worst-case analysis.

The proposed improvements outlined above are conceptual, although estimates have been made regarding the need for restriping versus actual roadway widening and purchase of right-of-way. Precise determination of widening requirements will occur after improvements have been finalized and detailed design drawings are prepared for each mitigation.

Tables 17 and 18 display forecast volume/capacity ratios and level of service with and without improvement for each impacted intersection.

If implemented, these mitigation measures would reduce forecast project-related impacts to levels of insignificance based upon City of Carson guidelines.

Additional Mitigation Measures

12. The applicant shall fund the study and submit a program to be approved by the City Engineer that proposes a fair share funding mechanism for all cumulative circulation improvements proposed for the project (see Mitigation Measures 8-11).
13. The cost of the Caltrans permit process, will be the responsibility of the developer.
14. If any work or construction occurs within the State's right-of-way a Caltrans encroachment permit will be required.
15. All cumulative projects subject to environmental review shall be reviewed by the City of Carson and SCAG for conformance with the

Regional Mobility Plan, the Air Quality Management Plan, the Growth Management Plan and the Regional Housing Needs Assessment.

16. The applicant shall participate, on a fair-share funding basis, in implementing the widening, if required by Caltrans, of the SR-91 on- and off-ramps at Wilmington Avenue and Central Avenue.
17. Develop a voluntary Transportation Demand Management (TDM) program.

Phasing of Development and Circulation Mitigation Measures

The project is proposed to be constructed in three phases as follows:

Phase 1 - 95 acres (approximately 40 percent of buildout)

Phase 2 - 93 acres (with Phase 1, approximately 78 percent of build-out)

Phase 3 - 52 acres (100 percent buildout)

The applicant will construct the improvements required for each phase (as indicated in the mitigation measures above) prior to the occupancy of each phase.

Phase 1

All of the improvements proposed for the project would be required as a result of Phase 1 traffic impacts, with the exception of Wilmington Avenue at Del Amo Boulevard, which would require only two lanes in each direction rather than the ultimate proposal of three in each direction, and new Central Avenue construction which could be completed from University Drive to Glenn Curtiss Street, ramp improvements at Wilmington/SR-91 and Central/SR-91 and restripe southbound approach of Central at Victoria for two through lanes and a double left-turn lane. As part of Phase 1, Glenn Curtiss Street should be constructed across the project site to Central Avenue. Also, with Central Avenue closed at Glenn Curtiss, at least one internal north/south roadway should be completed from Glenn Curtis Street

to Victoria Street. With this connection, traffic originating from/destined to the north could use the internal access road rather than impacting Wilmington Avenue and University Drive.

Phase 2

The full range of improvements described in this section should be completed as part of Phase 2 implementation. This would include construct Central between Glenn Curtiss and Victoria, restripe southbound approach of Central at Victoria for two through lanes and a double left-turn lane, reconstruct Wilmington at Del Amo to add double southbound left-turn lane, and construct ramp improvements at Wilmington/SR-91 and Central/SR-91.

ACOUSTIC ENVIRONMENT

Existing Conditions

The project site is exposed to an acoustic environment typical of urbanized areas. Noise sources which currently impact the project site uses are primarily motor vehicles using Wilmington Avenue, Central Avenue, Victoria Street, and University Drive. The site and surrounding areas are exposed to limited background noise from the general urbanization of the area.

NOISE MEASUREMENT

The unit used for measuring noise is the decibel (dB or dBA). The noise rating used for measuring ambient community noise levels is the Community Noise Equivalency Level (CNEL). This system takes average sound levels at an observation point and adds a weighting penalty to those sounds which occur during evening and night hours. The penalty is added to account for the fact that noise at night is more annoying than during the day. A penalty of 5 dBA is added between 7 p.m. and 10 p.m. and a 10 dBA penalty is added between 10 p.m. and 7 a.m. CNEL noise levels are often reported, for example, as "65 dB CNEL" or just "65 CNEL."

CITY NOISE STANDARDS

Noise sensitive land uses are identified in the Carson Noise Element as residential uses, hospitals, schools, which require lower noise levels. Residential uses are the sensitive noise receptors located adjacent to the project site. The city's noise element designates all properties into noise zones. Noise zone one covers residential districts where the allowable exterior median noise level is 50 dBA between 10 p.m. and 7 a.m., Monday through Friday, and 10 p.m. and 8 a.m. on weekends, 60 dBA for the remaining hours. Noise zone two is designated for commercial areas. Allowable exterior noise levels are 60 dBA between 10 p.m. and 7 a.m. and 65 dBA for the remaining hours.

Although the above city noise standards are presented in decibel levels, the computer model used in the following analysis presents CNEL noise levels which have 5-10 dB penalties added. If the CNELs presented in the following tables were to be converted to dB levels in order to compare with the city's intrusive noise standards, the CNEL estimates are overstated (higher) by approximately 5-10 db. For the noise impact analysis, a conservative reduction of 5 dB for CNEL estimates is used for comparison with the city's noise standards.

Traffic noise levels are estimated using the Federal Highway Administration model.¹ The highway noise model estimates CNEL noise levels generated by traffic at various observation points. The model considers traffic volume (average number of vehicles per day), vehicle mix (percentage of cars, trucks, and heavy trucks), vehicle speed, and roadway geometry to compute CNEL. Utilizing traffic data from the traffic analysis, existing CNELs along roadway segments in the project vicinity are provided in the following section. City noise standards also require all vibrations due to machinery to be controlled onsite and not extend beyond the property.

Impacts

Project development will result in increased noise levels in and around the project site. Higher noise levels will occur due to short-term construction activities as well as the long-term use of the development.

Grading

Short-term acoustic impacts will occur during structural demolition, project grading, infrastructure and building construction activities. Noise generated by earthmoving and construction equipment typically ranges from 80 to 105 dBA at 50 feet. The duration of use of specific construction equipment is not known. Appendix I, Addendum 9 provides construction equipment noise ranges by category.

1 "FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108," December 1978.

These construction activities may impact nearby residents and commercial operations acoustically. The activity is short-term in nature, however, and will occur only during the days and hours specified by the City of Carson Noise Ordinance (7 a.m. - 8 p.m. Monday through Saturday). Construction noise impacts will likely be regarded as significant by the residents along the south side of University Drive.

Traffic

The long-term acoustic impacts to and from the proposed development will result primarily from increased vehicular traffic on nearby roadways. The project will result in approximately 42,590 vehicle trips distributed on surrounding roadways.

Table 21 presents a comparison of the noise levels expected from existing and future cumulative traffic volumes on University Drive and Central Avenue which would carry a significant amount of project traffic in the immediate area and runs adjacent to existing residential uses south of the project site.

Table 21 also presents a comparison of the noise levels expected from existing and future cumulative with project volumes on the future Central Avenue (includes estimated California State University buildout) and along University Drive (single family residential). In community noise assessment, changes in noise levels greater than 3 dBA are often identified as significant, while changes of 1 dBA or less will not be discernable to local residents or local employees. As shown in Table 21, the increase in noise at University Drive attributable to the proposed project is not more than 1 dBA at the source receptors. Therefore it is not considered a significant adverse impact. The noise increases on Central Avenue south of University Drive a total of 3 dBA. Since the increase in dBA is not greater than 3 dBA, this is not considered to be a significant impact. Since Central Avenue north of University Drive currently does not exist, the dBA increases from 0 to 63. Central Avenue has not been extended north of University Drive but is designated in the city's Circulation Element. The projected noise level of 63 dBA does not violate the city's noise standard and no sensitive land uses will be located immediately adja-

cent to the Central Avenue extension. University personnel have indicated the area immediately adjacent to the street will be used as surface parking. Since no noise standard is exceeded and no sensitive noise receptors are located near the roadway, the noise increase is not significant. Future college buildout was considered in the traffic study. However, the University's plans are subject to change due to funding and future student enrollment. Under cumulative conditions which include the proposed project, noise levels will increase by only one dBA on University Drive, which does not constitute a significant adverse impact.

Table 21
ROADWAY NOISE CONTOURS IN PROJECT VICINITY

Roadway: Segment	CNEL ¹ 50' from Near Travel Lane ²	Distances (Feet) to CNEL From Roadway Centerline ²		
		70 dBA	65 dBA	60 dBA
University Drive west of Wilmington Avenue				
Existing	61	0	0	92
Future Cumulative Plus Project	62	0	0	113
Central Avenue north of University Drive				
Existing	0	0	0	0
Future Cumulative Plus Project	63	0	0	153
Central Avenue south of University Drive				
Existing	59	0	0	67
Future Cumulative Plus Project	62	0	0	126

Mitigation Measures

Since long-term impacts are below the state and federal standards, no long-term mitigation measures are required.

-
- 1 CNEL (Community Noise Equivalent Level) is an ambient noise descriptor which includes a weighted penalty for noise occurring during evening (7 p.m. to 10 p.m.) and nighttime (10 p.m. to 7 a.m.) hours.
 - 2 The CNEL was calculated on the PM peak traffic scenario from the traffic study.

NOTE: The CNEL falls within the roadway and is not located on adjacent property.

1. Construction activities should be limited to weekdays during daylight hours (eg., 7 a.m. to 8 p.m.) and Saturdays from 10 a.m. to 6 p.m.
2. Noise attenuation measures should be employed during construction hours to reduce noise impacts to surrounding uses. Such measures shall include compliance with state measures for muffling and shielding intake and exhaust from equipment and vehicles.
3. The siting of all future buildings shall comply with City of Carson regulations for interior and exterior noise levels, as specified by Title 25 of the California Administrative Code and the Uniform Building Code.

POPULATION/HOUSING/EMPLOYMENT

Existing Conditions

According to the State of California Department of Finance, the total population for the City of Carson was approximately 88,800 in January 1989. From April 1980 to January 1989 the city's population increased by 7,571, which constituted an increase of 9.3 percent. According to the 1989 California State Department of Finance figure, 24,286 dwelling units exist within the city. The Southern California Association of Governments' 1984 forecast indicated a need for 2,590 additional dwelling units for all income types from 1984-1990. Currently, housing demand is considered high in the region as exemplified by the city's low vacancy rate of 2.4 percent.

The city's Land Use Element provides for the development of new housing opportunities. Existing properties are zoned for a variety of housing types and densities. The city's future housing needs are expected to be met through local government programs, redevelopment and recycling of underdeveloped or substandard properties.

The California Employment Development Department has estimated that 42,200 city residents are employed within the City of Carson with a 4.1 percent unemployment rate in 1984. This high level of employment is due largely to nearby industry and manufacturing which serves as a major employment center for the region.

Additionally, abundant retail and service-oriented employment opportunities exist within the city and surrounding area. As indicated previously, the state reported 42,200 persons employed in the City of Carson. Using the 1989 California State Employment Development Department figure and the current dwelling unit count estimated in the Housing Element, a jobs/housing ratio of 1.73 can be considered representative of current city conditions. According to the city of Los Angeles Jobs/Housing Proposed Guidelines, a jobs/housing ratio between 1.10 and 1.74 is considered relatively balanced. A jobs/housing ratio is the relationship of jobs provided within the community within the number of dwelling units proposed or exist-

ing within the community. The City of Carson has not established a jobs/housing ratio that caters to Carson nor have they established criteria for a jobs/housing relationship. It should be noted, however, that projected employment growth within the city will continue to induce a demand for housing in or near the city in the short- and long-term.

The project site is located in the Long Beach/Downey Subregional Area, one of several highly urbanized subareas in the Growth Management Plan (SCAG: February 1989). The job/housing balance performance goal for the Long Beach/Downey subregion for 1984 to 2010 is 1.65. In the Growth Management Forecast this subregion has the following characteristics:

	<u>Housing</u>	<u>Employment</u>	<u>Jobs/Housing</u>
1984	400,000	482,600	1.21
1988	414,600	N/A	N/A
2010	503,500	632,200	1.26
Increase:	103,500	149,600	

Impacts

A market overview for the project was conducted by PBR Financial Services Division in April 1988. This study included an analysis of the demand for the project uses and the demand for employee generating uses. A survey of firms within one mile of the site was conducted. The majority of the business activity includes aerospace facilities, light manufacturing and wholesale trade establishments. From this study, employment generation factors were created to determine employment generation for industry, technology and office uses. Using these figures, the total employment expected at the project site is 13,836 jobs, as indicated in Table 22.

Table 22
PROJECT EMPLOYMENT

<u>Uses</u>	<u>Size (Square Feet)</u>	<u>Daily Trips</u>	<u>Employee/1 Square Foot</u>	<u>Employees</u>
Industrial	1,570,000	6,440	1/500	3,140
Technology	1,880,000	16,560	1/330	5,696
Office	<u>1,250,000</u>	<u>20,700</u>	1/250	<u>5,000</u>
	4,700,000	43,700	TOTAL	13,836

1 Employee generation rates were provided by PBR Financial Services Division.

Average daily trips generated by the project are 42,590. However, as determined by a study conducted by the applicant indicates, 40 percent of employees in similar type developments reside within three miles of their workplace.

In addition to employment generated onsite, a secondary multiplier effect would result as project employees generate additional demand for goods and services in the region. While the amount of such secondary employment is difficult to measure, it can be assumed that some employment gains would occur both in Carson and the surrounding area.

Employees generated directly by the project would increase the City's employment figure to 56,036.

The project site is designated for industrial uses in the General Plan. Thus, the project is consistent with the intent of the General Plan. Therefore, jobs/housing impacts will not be significantly impacted.

Based on the data provided by SCAG, the Long Beach/Downey Subregional Area (which includes the project) is determined to be "job poor" and needs additional jobs to reach the performance goal. The project will provide approximately 13,836 jobs for the subregion at buildout. Therefore, the project should be viewed as contributing to the SCAG performance goal for the Long Beach/Downey subregion.

The estimated City's job/housing balance is now 1.74, based on employment of 42,200 and 24,286 housing units for 1989. The City's Housing Element projects a need for 430 dwelling units per year. If the City reaches that goal annually from 1984-2010, approximately 11,200 units would be added. In comparing the project's employment with this housing projection, the "incremental" job/housing ratio is 1.24. While City's jobs/housing balance ratio is slightly higher than the subregion, the SCAG policy is for the subregion as a whole. The City currently has not adopted a jobs/housing balance plan.

However, the SCAG Growth Management Plan (p. VII-5) includes the following guidelines for assessment of consistency with performance goals.

"Projects which would add jobs or housing in a local jurisdiction within the job/housing balance performance goals are handled by the normal permitting process. Nevertheless, local jurisdictions have the responsibility for assuring compatibility of land uses when approving new developments."

Mitigation Measures

No mitigation measures are required.

AESTHETICS

Existing Conditions

The 288-acre project site is located within an area in Carson known as Dominguez Hills. Although referred to as Dominguez Hills, the project site is a domal form or may be identified more properly as a single hill. The topography of portions of the perimeter of the site contain moderately steep, natural slopes. Initially, the site contained a series of slopes and gullies. However, gullies have been filled in over time and the slopes have been leveled so that the visual image of the site from the south or east is a plateau rather than a rounded landform. The site's eastern and northern edges are considerably flatter and are at comparable elevations with adjacent land uses.

The site has been used for oil production since the 1920s and is currently in active oil production. In addition to the oil production uses, two plant nurseries exist onsite. As a result of present uses onsite and the disruption of vegetation in the past, invasive plant species have been introduced to the site creating a more desolate appearance. The appearance of the site could be considered as blighted conditions.

Impacts

The city's General Plan designates the site for industrial use. With development, the site's visual character will be altered from that of oil fields to an urbanized industrial development. Industrial-related uses exist or are designated along the east and north side of the site. Thus, the visual appearance of the project will be consistent with the uses along Victoria Street and Wilmington Avenue. The visual impact of greatest potential significance exists along the south and west side of the project where the area transitions from industrial uses to residential and institutional uses. Single family dwellings, both single and two story, exist along the south side of University Drive south of the site. Two-story student housing for California State University, Dominguez Hills and vacant property exist along the west side of the site.

Even though change in the visual character will occur, development onsite will not be highly visible to these surrounding residential land uses due to the steep slopes along the southern and western edges and the proposed landscaping of these slopes. The elevation between University Drive and the site pad ranges from 92 feet up to 160 feet. The grade separation ranges from 10 feet to 20 feet. However, the average grade separation between the residential units to the south and the proposed industrial uses is 20 feet.

A similar situation exists along the western edge of the site adjacent to student housing, parking lots, and vacant lots the University owns along the west edge of the site. A grade separation occurs between the University site and the project site pad ranging from a four-foot difference to approximately a 20-foot difference.

As a part of the project, an edge treatment will be constructed along the south and west side of the project which includes a landscape design that will mitigate potential significant visual impacts. With mitigation, the project will not adversely impact the visual character of the project vicinity. With development, onsite aesthetics will be improved by new structures and landscaping.

Mitigation Measures

1. Individual development projects shall be reviewed by each developer to ensure that specific plan standards for design and visual aesthetic quality are met.
2. No building shall be located closer than 100 feet to University Drive to provide adequate visual screening and a buffer between the residential uses to the south and the project site.
3. Loading facilities, mechanical equipment and communication equipment shall be designed to minimize exposure to public view and shall be screened by landscaping, buildings or walls.
4. Permanent outdoor storage shall be allowed onsite if screened appropriately according to City of Carson standards.

5. Parking areas shall be screened from public streets by landscaping berms or walls.
6. The landscaping shall conform to the standards set on the landscape concept (Exhibit 17 in the Specific Plan).

CULTURAL RESOURCES

An archaeological records search and walkover survey was conducted in July 1989 by Archaeological Resource Management Corporation. In addition, this firm conducted a paleontological investigation which included a records search in July 1989. The following information summarizes the key findings of the study, with original report included in Appendix I, Addendum 7.

Existing Conditions

ARCHAEOLOGY

The area in and around Carson has a long history of human occupation. In recent history, the study area is located in an area which is located within the 75,000-acre land grant known as Rancho San Pedro. Rancho San Pedro was awarded to Juan Jose Dominguez in 1784. Only a couple of the original structures, such as the Rancho Dominguez the family home built in 1926 and located at 18207 Alameda Street, in Carson remains. This structure is located approximately one mile from the site and is a state and a Los Angeles historic landmark. Although the area in which the site is located has local historical significance, no historic structures or landmarks are located onsite.

Archaeological evidence indicates that prehistoric Indians occupied the region in which the site is located. Ethnographically, the study area falls within the tribal territory of the Gabrielino, who, along with the Shoshonean, were considered "the wealthiest, most populous, and most powerful ethnic nationality in aboriginal southern California." Inland Gabrielino settlement patterns are characterized by primary subsistence villages and smaller family unit seasonal gathering camps, both of which were usually situated near reliable water sources. Their material culture consisted in part of seatite objects such as pipes, ornaments, effigies, and cooking utensils, mortars, metates, manos, pottery, and basketry, as well as a variety of finely worked shell, bone, and chipped stone tools and ornaments.

An archaeological records search indicated that no formal survey has been previously completed for the project site and no historic or prehistoric resources have been located or recorded onsite.

A walkover survey conducted on July 7, 1989 found that all the project area has been subject to recent disturbance, primarily from oil production uses and nursery uses. During the course of the survey, the ground surface was scrutinized by the archaeologist for signs of prehistoric land use. However, no prehistoric or non-recent historic cultural material were observed.

PALEONTOLOGY

A paleontological resource assessment including a record search conducted in July 1989 revealed that no formal resources have been recorded onsite. However, invertebrate escalites have been recorded within 0.9 miles of the site. Samples of fossils, taxa, mollusks and echinoderms from the San Pedro sand deposits have been discovered at these sites. A "tusk" was plotted on the offsite southeastern flanks of the Dominguez Hills. The occurrence of these fossil specimens indicates that other vertebrates and invertebrates may occur on the site.

Impacts

An archaeological records search and walkover survey was conducted by an archaeological resource specialist in July 1989. The study concluded that no significant impacts to archaeological and paleontological resources will occur as a result of this project. Although unlikely, subsurface resources may be present even though the presence of these resources is not visible. The potential for unearthing archaeological resources during grading/excavation operations is not highly probable because of prior agricultural and oil operations, but could occur because the grading concept plan indicates maximum cuts of 38 feet in some areas onsite. However, since the general area has included resources, the following mitigation is recommended.

Mitigation Measures

1. If significant cultural deposits are unearthed during earthmoving, a qualified archaeologist and paleontologist shall be retained to assess the significance of the findings. Based on the results of this testing, appropriate mitigation measures specific to each site can be developed.

PUBLIC SERVICES AND UTILITIES

This section discusses the project's potential impact on a variety of public service and utility agencies. Services which are examined include fire protection and emergency services, police protection, water, wastewater, solid waste disposal, natural gas, electricity and telephone. Each service agency was contacted concerning the project's potential impact on their present ability to provide services. Written responses are included in Appendix 1 and are summarized in the following discussion.

FIRE AND EMERGENCY SERVICES

Existing Conditions

The Los Angeles County Fire Department provides fire protection and emergency services to the project site. The closest fire station to the project site is Fire Station #10, a three-engine company with a squad and truck, located at 1860 East Del Amo Boulevard, approximately .5 miles south of the site. This station is manned by four personnel and response time is approximately three minutes. Backup assistance is provided by Station #116 at 755 East Victoria Street, approximately 1.0 miles west of the site. Station #116 is staffed by 8 personnel including one engine company, a truck company, and a squad. Response time is approximately five minutes.

<u>Equipment</u>	<u>Distance/Miles</u>	<u>Time/Minutes</u>	<u>Men</u>
Engine 116	.75	1.3	3
Engine 10	2.25	3.9	4
Engine 95	3.50	6.0	4
Truck 116	.75	1.3	3
Paramedic Squad 116	.75	1.3	2

Impacts

Fire Department officials indicate that the project will have negligible impacts on the Fire Department.¹ Subsequent review of building plans and the issuance of occupancy permits will assure that fire services continue

1 Telephone conversation with Los Angeles County Fire Department Inspector Danny Moss, November 1989.

to be adequate for development within the project site. It is not unusual for agencies to include "qualifications" to their assessment of service availability contingent on continued funding capabilities. Further projections of fire service availability and timing of equipment needs would be speculative and beyond the scope of analysis required for this project.

The department evaluates fire service levels on an on-going basis and certificates of occupancy are not issued if fire service is not available.

Prior to issuance of occupancy permits for each building within the specific plan area, the Fire Department shall provide the city with evidence that the Fire Department has indicated they have adequate manpower and facilities to serve the project.

Mitigation Measures

1. The building division shall review all building permits to ensure that the project will be constructed in conformance with all applicable building codes in order to ensure maximum fire protection. Fire sprinkler systems shall be installed with local alarm and central station supervision.
2. The development of this project must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.
3. Fire flows of up to 5,000 gallons per minute at 20 pounds per square inch residual pressure for a five-hour duration will be required.
4. Final fire flow will be based on the size of the building, its relationship to other structures and property lines, and the type of construction used.

POLICE SERVICES

Existing Conditions

The City of Carson currently contracts with the Los Angeles County Sheriff's Department for police protection. The Sheriff's Substation is located at 21356 South Avalon Boulevard, approximately three miles south of the project site. The station currently employs 196 sworn officers.

Impacts

The project represents an intensification of development on the site, and as such an increase in criminal activity may occur during construction and after occupancy. However, the amount of increased police protection needed will depend upon the final design and size of the project. The project will not result in significant adverse impacts upon police services.

Mitigation Measures

The Sheriff's Department has recommended the following design measures, to reduce project-generated crime. The Building and Safety Department and the Planning Division shall review building plans for items 1-4. The Planning Division shall review landscape plans and the Building Division shall review the grading plans to assure adequate site distance as suggested in item 2.

1. Fencing should be provided which limits access but allows visibility from the street. Fencing which screens visibility of oil uses and vehicular storage areas should be encouraged.
2. Landscaping and berms should be such that they do not block street visibility adjacent to intersections or when the landscaping is determined to be a traffic hazard as determined by the City of Carson Traffic Engineer.
3. Adequate lighting should be provided for nighttime security.

4. Fences should provide a physical barrier to entry but allow for a view of the interior of the fenced area. Roofs should be free of any man-made or natural ladders such as trees. Visibility into and around doorways, porches and windows shall be maintained. Security shrubbery should be incorporated, when appropriate, into all landscape plans for Site Plan and Design Review. Low shrubbery or trees, trimmed to at least six feet from ground level should maintain visibility into parking lots. Trees should not be placed where they interface with any lighting.

WATER SERVICE

Existing Conditions

The Dominguez Water Corporation provides water service to the project site. Approximately eighty percent of the city's water resources are purchased through the Metropolitan Water District with the remainder provided by local wells.

The project site is currently serviced by a 14-inch water main in Victoria Street, a 16-inch main in Wilmington Boulevard and a 14-inch main in University Drive. There is also an existing 12-inch main located in Glenn Curtiss Street.

Impacts

Based upon similar uses, the project is expected to consume approximately 261,066 gallons daily, as illustrated in Table 23. The project is not

Table 23
DAILY WATER CONSUMPTION

Land Use	Demand ¹ Factor	Proposed Area (Sq. Ft.)	Daily Consumption (Gallons)
Industrial ²	21 gal./emp.	1,570,000	73,266
Technology ³	15 gal./emp.	1,880,000	112,800
Office ⁴	15 gal./emp.	<u>1,250,000</u>	<u>75,000</u>
Total Daily Consumption		4,700,000	261,066

1 City of Carson, April 1, 1989.
 2 Assumes 1 employee/450 square feet.
 3 Assumes 1 employee/350 square feet.
 4 Assumes 1 employee/250 square feet.

anticipated to have a significant impact on the existing water system. However, water efficient plumbing fixtures, drought-resistant landscaping and automatic irrigation systems should be required to reduce water demand.

Mitigation Measures

The following mitigation measures are recommended to reduce water use through conservation:

1. Landscape plans shall include automatic irrigation systems which ensure watering during early morning or evening hours to reduce evaporation losses.
2. The Building Department and the Planning Division shall review building plans for plumbing fixtures to ensure that water reducing measures are utilized (ie., low-volume toilet tanks, flow control devices for faucets, etc.) as required by Title 24 of the California Administrative Code.
3. The use of drip irrigation systems should be considered in order to reduce water usage.

WASTEWATER

Existing Conditions

Sewer collection and maintenance for the majority of the site is provided by the Los Angeles County Department of Public Works (DPW). The City of Carson contracts with the DPW to maintain the sewer lines within the city. Approximately 220 acres of the site will be served by the DPW. Within this county-served area, the sewer discharge flows in two directions. A 12-inch sewer main exists within the Wilmington Avenue right-of-way south of Glenn Curtiss Street, and a 10-inch main exists within the Central Avenue right-of-way south of Elsmere Drive. All of the local lines are operating at capacity and will eventually discharge into the Sanitation District's trunk sewers. Sewage will flow south to the Joint Water Pollution Control Plant near the Harbor Freeway in the City of Carson.

The remainder of the site will be served by the City of Compton. This portion of the site drains toward the northeast corner of the site. A 15-inch main exists within Victoria Street right-of-way east of Wilmington Avenue.

Fifteen of the Los Angeles County Sanitation Districts have pooled their investment in wastewater treatment facilities. These fifteen districts, known as the Joint Outfall Districts (JOD), are located in the central Los Angeles Basin and primarily serve the eastern and southern portions of the county. The JOD extend south and west from the San Gabriel Mountain foothills to the Palos Verdes peninsula, bounded to the east by San Bernardino and Orange counties and to the west by the cities of Glendale and Los Angeles. The JOD have constructed an integrated network of facilities known as the Joint Outfall System. The system consists of six treatment plants, over 1,000 miles of trunk sewer, 48 pumping plants and four submarine outfalls.

The sanitation districts own, operate, and maintain the major trunk sewers, lift stations and wastewater treatment facilities. DPW does own some local sewers which convey wastewater to the districts' system. In addition, DPW also provides contractual service for operation and maintenance of local sewer lines for unincorporated territories or cities. There is no association between the County of Los Angeles and the Sanitation Districts, either administrative or financial.

Impacts

Project implementation will result in an estimated 234,959 gallons per day of wastewater generated from the site¹ (see Tables 24, 25). The existing DPW sewer system is operating at maximum capacity. Additional parallel sewer lines will be constructed by the applicant to accommodate additional flows on a phased basis. With these additional improvements, an offsite main will be constructed in Central Avenue.

Because of the project's location, the flow originating from the proposed project would have to be transported to the districts' sewer by local

¹ Based on 90 percent of water consumption.

sewer which are not maintained by the County Sanitation Districts. The districts own, operate, and maintain the main trunk sewer network which directly conveys wastewater flows to the treatment facilities. The city and/or the county Public Works Department are typically responsible for operation and maintenance of the local collection lines.

The project's impact on sewer facilities is not considered significant. However, the DPW and the City of Compton shall verify the flow study prior to approval of the project to ensure a complete assessment of the potential project impacts on both the city's and on the county's sewer system and to ensure adequate sizing of project-proposed sewer facilities. The Los Angeles County Sanitation District will evaluate cumulative impacts upon their facilities as incremental expansions of their facilities are proposed. The project will have impacts on the existing system; however, this impact can be mitigated through the construction of new sewer lines and through water conservation measures.

Table 24
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
DAILY WASTEWATER GENERATION

Land Use	Proposed Area (Sq. Ft.)	Daily Consumption (Gallons)
Industrial	1,177,500	52,865
Technological	1,410,000	72,249
Office	<u>937,500</u>	<u>51,105</u>
Daily Generation	3,525,000	176,219

The City of Compton Water/Wastewater Division does not anticipate that the project will have a significant adverse impact upon the sewer system. All possible flow reduction measures should be incorporated into the project.

Table 25
CITY OF COMPTON DAILY WASTEWATER GENERATION

Land Use	Proposed Area (Sq. Ft.)	Daily Consumption (Gallons)
Industrial	392,500	16,447
Technological	470,000	24,083
Office	<u>312,500</u>	<u>18,210</u>
Daily Generation	1,175,000	58,740

Connection fees are required by the Sanitation District to mitigate the cost of the incremental expansion of district facilities, in order to accommodate the project. The water conservation measures recommended also will serve to reduce the amount of wastewater generated by the project. The applicant agrees to notify the County Sanitation District of Los Angeles of each phase of construction and a copy of the approved specific plan will be forwarded to the District.

Mitigation Measures

1. All required sewer improvements shall be designed and constructed to City of Carson and County of Los Angeles standards. Determination of the requirement to upsize existing facilities shall be made by the City of Carson Department of Public Works.
2. Fee payment is required prior to issuance of a permit to connect to district sewer facilities.

SOLID WASTE DISPOSAL

Existing Conditions

Seven landfills could be used to service the site but the closest landfill to the site is Puente Hills Landfill in the unincorporated La Puente area of Los Angeles County. Operated by the Los Angeles County Sanitation District, this facility's conditional use permit is scheduled to expire in 1993. The Sanitation Districts are independent special districts providing water pollution control and solid waste management services under the authorization of the Sanitation Act of 1923. The districts are not part of the county government.

The County of Los Angeles contracts with private waste haulers for solid waste collection within the project vicinity. The landfill used by the haulers is up to the discretion of the hauler which is chosen to collect waste from the site. However, the Puente Hills Landfill would most likely be the facility used to service the site.

Puente Hills landfill, a Class III non-hazardous waste site, is expected to have additional capacity beyond November 1993 when the conditional use permit expires. Additional use permits will be required to continue operation. The current permit for the Puente Hills Landfill allows 12,000 tons of waste per day. When waste generated on any given day at Puente Hills exceeds this maximum standard, it must be diverted to other landfill facilities. Although this landfill may be the closest to the project geographically, the competition for its use limits its accessibility.

In February 1988, a Solid Waste Management Status and Disposal Options in Los Angeles County Report was distributed to various local agencies in the county by the Los Angeles County Solid Waste Management Department. This report outlined the current limitations of solid waste disposal capabilities within the county and identified possible measures to accommodate projected future volumes of solid waste. Subsequent to the distribution of the report a number of recommended action items were adopted by the Los Angeles County Board of Supervisors and the County Sanitation Districts Board of Directors in spring 1988. These action items generally consist of identifying new potential landfill sites, and encouraging recycling and resource recovery programs throughout the county. Ideally, the full implementation of the recommended action items would provide a 50-year capacity for solid disposal throughout the county.

Impacts

Project implementation will likely generate approximately 8,270 tons per year¹ of solid waste, contributing to the cumulative demand for landfill

Table 26
SOLID WASTE PROJECTION

Land Use	Total Employees	Solid Waste Generation Factor (Tons/employee/year)	Annual Solid Waste (tons)
Industrial	3,140	1.68	5,275
Technology	5,696	0.28	1,595
Office	<u>5,000</u>	0.28	<u>1,400</u>
Total	13,836		8,270

¹ R.W. Buck, Achieving Optional Waste Recycling and Source Reduction: Methods to Reach Your County's Goal, May 1989.

space throughout the county. Consequently, the project will have an impact on existing facilities.

However, this impact can be lessened through the incorporation of recycling measures onsite and through the ultimate addition of landfill sites in the region as currently programmed by the county.

The County of Los Angeles is in the process of evaluating five additional landfill sites to accommodate solid waste in Los Angeles County and alleviate stress on existing landfill sites. Exhibit 29 in the Response to Comments section shows the location of the existing and proposed landfill sites. With the construction of additional landfill sites, the project impacts would be reduced even further.

It is beyond the scope of this EIR and the requirements of CEQA to evaluate the future landfill requirements for Los Angeles County. As stated in the attachment, the current capacity of the Puente Hills Landfill is 12,000 tons per day. At buildout, the project will generate only 23 tons per day. As noted in the article, separate environmental documentation is being completed for the five proposed new landfills, with a combined potential capacity of 950 million tons.

AB 939 (Sher) created a new six-member integrated waste management board to oversee waste reduction and recycling programs throughout the state. The legislation requires cities and counties to reduce and recycle 25 percent of their waste by 1995 and 50 percent by the year 2000. Local governments are to prepare and submit comprehensive programs to manage waste. The local plans must have the following elements:

- . A waste characterization element which identifies the amount and types of waste generated in the local agency's jurisdiction.
- . Source reduction, recycling and composting elements which identify the measures the local agency will take to reduce, recycle and compost waste.

- . A household hazardous waste element, which identifies how the local agency will collect and dispose of household hazardous wastes.
- . A solid waste facilities capacity finding which identifies the landfill space the local agency has available in the next 15 years.

The project will comply with all recycling programs adopted by the city under AB 939.

Mitigation Measures

The following measures will contribute to the reduction of volume of solid waste generated by the project.

1. Each individual employer will be provided a copy of the Los Angeles County Solid Waste Management Plan, which addresses recycling programs.

ELECTRICAL SERVICE

Existing Conditions

The Southern California Edison Company currently provides all electrical service to the project area. Power is presently supplied to the project area by overhead and underground lines.

Impacts

As noted in Table 27, the estimated demand for electric energy would be approximately 32,882 megawatt hours (mwh) annually. The Southern California Edison Company has indicated that the project will have no adverse significant impact upon service levels in the project vicinity.

Table 27
ANNUAL ELECTRICITY DEMAND¹

Land Use	Generation Factor	Area (Square Feet)	Project Annual Demand (MWH)
Industrial	3.4 kwh/sq.ft.	1,570,000	5,338
Technology	8.8 kwh/sq.ft.	1,880,000	16,544
Office	8.8 kwh/sq.ft.	1,250,000	<u>11,000</u>
Total Demand			32,882

Mitigation Measures

1. The Building Department shall review all building plans to assure that Title 24 California Administrative Code requirements are met.

NATURAL GAS

Existing Conditions

Southern California Gas Company currently provides natural gas to the project site. Existing lines in Wilmington Avenue, Victoria Street and University Drive will supply natural gas to the project. A 30-inch high pressure gas line exists along the future right-of-way of Central Avenue. An analysis of the plan profiles, as built for the gas line indicates there is no conflict between the gas line and future plans for Central Avenue improvements.²

Impacts

The consumption of natural gas in office, industrial and technology uses varies widely, depending on the degree of reliance on natural gas as an energy source as well as other design considerations. However, it is estimated consumption of gas would be approximately 112.8 million cubic feet (MCF) annually, as shown in Table 28.

1 Based on regional energy demand factors in the Air Quality Handbook for Environmental Impact Reports, 1987, South Coast Air Quality Management District.
 2 Thirty-Inch Buried SCE Gas Line Study, Dalcin Cummins (Civil Engineers), April 5, 1990.

Southern California Gas Company has indicated that the project will have no significant adverse impact on service levels in the project vicinity.¹

Table 28
ANNUAL GAS CONSUMPTION²

Land Use	Generation Factor	Area Square Feet	Projected Annual Consumption (MCF)
Industrial	2.0 CF/MO/unit	1,570,000	37.7
Technology	2.0 CF/MO/unit	1,880,000	45.1
Office	2.0 CF/MO/unit	<u>1,250,000</u>	<u>30.0</u>
TOTAL CONSUMPTION		4,700,000	112.8

Mitigation Measures

1. The Building Department shall review all building plans to assure California Administrative Code requirements are met.

SCHOOLS

Existing Conditions

The Los Angeles Unified School District contains several schools that are in close proximity to the project site, including Annalee Elementary School, Broadacres Elementary School, and Glenn Curtiss Junior High School. The project is located, however, within the Compton Unified School District. Schools that serve the project area include Caldwell Elementary, Leapwood Elementary, Walton Middle School, Compton High School and Carson High School. Several of the schools in the immediate vicinity have sufficient capacity to accommodate new students.

Impacts

There are no residential uses planned for the project and the District is currently well below enrollment capacity. Therefore, the School District

1 Correspondence with Southern California Gas Company, Central Division, Jim Sinclair, Technical Supervisor, May 18, 1989.
2 Based on regional gas consumption factors in the Air Quality Handbook for Environmental Impact Report, 1987, South Coast Air Quality Management District.

Superintendent indicates that the project will not have a significant adverse impact upon current educational service. In addition, implementation of the project will increase tax revenues to all districts including the school districts.

Mitigation Measures

No mitigation measures are required.

BUS SERVICE

Existing Conditions

The Southern California Rapid Transit District (SCRTD) currently provides bus service to the project area. SCRTD was contacted and has verified that service to the site will be provided on a limited basis. Bus lines 130 and 53 run directly adjacent to the project site along Central Avenue. Bus line 56 runs along Wilmington Avenue. The project area is also served by the Carson Circuit Bus System. Route E provides eastbound service on University Drive between Wilmington Avenue and Avalon Boulevard.

Impacts

The SCRTD and Carson Circuit Bus System have indicated that the project will not have a significant adverse impact on local bus service. Lighted bus shelters and bus pads will be provided upon RTD request when street improvement plans are prepared. RTD service policies do not encourage turns into a project area so the proposed 20-25 foot curb return radii is appropriate.

Mitigation Measures

Although the project is not expected to impact bus service, the following mitigation measures are recommended to mitigate possible impacts that the project may generate upon traffic, air quality and energy:

1. Placement of bus route information in conveniently located areas.
2. Encouragement of an employer-subsidized bus pass program.

UNAVOIDABLE ADVERSE IMPACTS

The project will involve beneficial effects such as the promotion of economic growth, increased employment opportunities. On the other hand, the project will lead to adverse impacts, many of which can be mitigated to a level of insignificance. Project-related impacts which are considered to be both unavoidable and adverse in nature are listed below. The summary section contained at the beginning of this report provides a listing of all project impacts and mitigation measures.

Land Use

- The project will require removal of all existing structures onsite.

Geotechnical

- Project uses may be exposed to potential groundshaking during regional seismic activity.

Hydrological

- The project will result in increased storm runoff volumes.

Transportation/Circulation

- The project will generate a net increase of 42,590 vehicle trips daily.

Air Resources

- Implementation of the project will result in an increase in long-term emissions from mobile and stationary sources compared to the current uses onsite.
- The project will cause short-term air quality impacts associated with construction (eg., dust, construction equipment emissions, etc.).

Acoustic Environment

- The project will increase existing noise levels in and around the project site, most notably, as a result of increased traffic volumes associated with the project.
- Short-term acoustic impacts will occur as demolition, grading, infrastructure installation and building construction occur.

Public Services

- The project will result in increased demands upon public services and utilities.

Aesthetics

- Residents of single family units south of the project site may consider development of intensified industrial uses onsite as an adverse impact.

Impacts Requiring a Statement of Overriding Considerations

The following significant adverse impacts are not mitigated, or are only partially mitigated, to a level of insignificance by the recommended mitigation measures. A Statement of Overriding Considerations is required for these items. While the city may choose differing reasons for deciding the benefits of the project outweigh the impacts for these items, some reasons for doing so are included in the discussion listed below:

- a. Biology. The Reyes Ravine is shown as a blue-line stream on the USGS topographic maps, which indicates the California Department of Fish and Game may have jurisdiction over any grading in that area. While the mitigation measures and state law require the applicant to obtain a 1601-1603 permit, grading of the area in itself is considered a significant impact which cannot be avoided to assure public safety and proper drainage onsite. All mitigations required by the Department of Fish and Game are binding con-

ditions for the project, with any disagreements subject to a formal Departmental negotiation process. While grading will impact an "intermittent blue-line stream," it is usually dry during most of the year. The ravine includes no significant biological resources and the public safety benefits of grading outweigh leaving the ravine in its natural state. Additional erosion would also occur if the ravine were left in its natural state.

- b. Cumulative Traffic. City policy for freeway interchanges (a volume/capacity ratio of 0.94 or less) is met with the proposed traffic mitigations, and this impact is mitigated to a level of insignificance. CEQA does not specify which methodology be used for traffic analyses; and each city has its own policies/procedures for determining what constitutes a significant impact. However, since there is the possibility that the recommended improvements to the Wilmington Avenue/SR-91 freeway interchange would be delayed beyond the control of the applicant or city, resulting in a volume/capacity ratio above 0.94, including the cumulative impact in the Statement of Overriding Considerations (SOC) for the project is recommended. If the mitigation is not feasible because of difficulties in acquiring right-of-way, disapproval by other cities or Caltrans or delays in approvals, this procedure would address the situation.

ALTERNATIVES TO THE PROPOSED PROJECT

This section of the EIR is prepared pursuant to the state CEQA Guidelines, Section 15126(d), which specifies that the EIR shall describe a "range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project and evaluate the comparative merits of the alternatives."

The guidelines also indicate that, "The discussion of alternatives shall focus on alternatives capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly."

The project site is zoned for industrial development and is one of the last remaining large undeveloped industrial sites in the City of Carson. This project is an infill project consistent with the General Plan and other feasible sites of comparable size in the area are not available.

Based on the statement of the housing/balance performance goals, it appears it would be inappropriate to consider a project alternative for the project site which includes housing, since the SCAG subregional area for the project is employment-poor, not housing-poor. While comments 11-5 have advocated housing on either this site or additional housing on other sites within the City of Carson, there is no mandate based on the SCAG job/housing policies and goals to do so. If the city were to designate additional land for housing within the city, or initiate zone changes to higher density to afford more housing opportunities to employees in or near the city, those actions and subsequent projects would be subject to their own environmental documentation.

A qualified real estate brokerage firm, Collins Fuller, was asked to identify any potential alternate sites in the project vicinity. The firm indicated that there are no alternative sites of sufficient size for sale for the project in the South Bay region. The only available acreage for sale, all of which is removed from the project area, and all parcels are zoned for office uses, are the following:

1. Mann property at Long Beach/I-405 (17 acres)
2. Zellman property at Long Beach/I-405 (15 acres)
3. Union Pacific property at Long Beach/I-405 (20 acres)

The following subsections describe the characteristics of each alternative selected for analysis and identify the potential effects to be associated with each alternative. Table 29 compares the potential environmental impacts of the project and Alternatives 1, 2.

NO PROJECT ALTERNATIVE

This alternative assumes that the project will not be developed. The current mix of nursery and oil production uses would remain. Existing utility services to the area would remain and no improvements would be made to improve the use or urban design character of the project area. Under this alternative, no existing adverse environmental impacts are associated with existing traffic and air pollutant emissions which are significant.

Carson would continue to experience increased growth in the area surrounding the project site regardless of whether or not the project is developed. Therefore, the effects of increased traffic, noise and air quality degradation would occur, as well as increased energy consumption and demand for housing within the city will increase whether or not the project is developed.

This alternative does not provide for improvements of the area as outlined in the city's goals and policies. However, this alternative is not rejected and should be considered in the review process. The no project alternative is designated the environmentally superior alternative.

ALTERNATIVE 1 - INCREASE OF OFFICE USES

This alternative assumes development of the site with an increase in office uses, from 27 percent as in the proposed project to 35 percent. The amount of industrial space is reduced but the total square footage for the project remains at 4.7 million square feet. The office uses should be located along the south or west end of the project, with the remainder of the site developed with the same uses as currently proposed.

Table 29
PROJECT ALTERNATIVES

Description	Project	Alternative 1	Alternative 2
Total SF (millions)	4.7	4.7	4.0
Floor area ratio	.45	.45	.38
Total trips (ADT)	43,700	48,505	37,023
Total employment	13,836	14,626	11,748

Environmental Impacts Compared to the Project

CO emissions (tons/year)	706	644	489
Organic gases (tons/year)	79	71	54
Nitric oxide (tons/year)	135	129	98
Daily water demand (thousands of gallons)	261	234	194
Daily sewage flow (thousands of gallons)	235	236	198
Solid waste (tons/year)	8,270	7,719	7,433
Natural gas (mcf/year)	113	113	98
Electricity (mwh/year)	32,882	35,015	26,472

Note: The "no project" alternative assumes no additional development occurs onsite and the existing oil and nursery operations generate insignificant demands in comparison to the three projects listed above.

Generally, the potential environmental consequences of this alternative are similar to the project except that potential land use conflicts between the residential and business may not be as extensive as the proposed project.

According to the trip projection, this alternative results in approximately 4,805 daily trips more than the proposed project (Table 29) or a twelve percent increase. The total estimated average daily trips per day for Alternative 1 is 48,505. Trip rates similar to rates used in the traffic study were utilized to calculate this alternative's project trip generation.

Potential land use interface impacts with respect to office use adjacent to the residential and student housing would reduce as office is accepted as a more compatible land use with residential uses than other uses such as industrial uses. However, potential land use conflicts occur which would require mitigation. These potential conflicts may include visual impacts, onsite noise, and traffic impacts.

Air quality and noise impacts in relation to traffic generation would increase in proportion to the increase in vehicular trips. Demand for sewer and water services would increase slightly under this alternative. This alternative is considered environmentally similar to the project because of the increased land use compatibility. Each alternative discussion indicates statements that the alternatives should not be rejected on environmental grounds and should be considered in the review process. The Draft EIR designated the "no project" alternative as environmentally superior. As discussed below, Alternative 2 is the second most environmentally superior because of the reduction in total trips.

This alternative is not rejected on environmental grounds and should be considered in the review process.

ALTERNATIVE 2 - REDUCED PROJECT SQUARE FOOTAGE

Under this alternative, redesign of the project at a reduced intensity could reduce many of the potential impacts identified in the EIR. How-

ever, a less intense project (4.0 million square feet) would not reduce the amount of grading required for the preparation of roads and building pads.

Alternative 2 represents development of 1,060,000 square feet of office uses, 1,330,000 square feet of industrial uses and 1,600,000 square feet of technology uses. The demand for public services will decrease slightly, in comparison to the project. However, the decrease is not viewed as having a substantial reduction in public service demands.

Traffic generation would decrease slightly from 43,700 total daily trips for the project to approximately 37,023 total daily trips, or approximately fifteen percent.

Trip rates similar to those used in the traffic study were utilized to calculate this alternative's project trip generation. Related air quality and noise impacts would decrease proportionately with traffic volumes. In addition, the project's demand on city services and utilities would be reduced as well as the project's consumption of non-renewable resources and energy.

This alternative is not rejected on environmental grounds and should be considered in the review process.

Table 30 summarizes dwelling units, employment and trip generation of the project and each alternative.

Table 30
ALTERNATIVES 1 AND 2 - HOUSING, EMPLOYMENT AND TRAFFIC¹

	<u>Dwelling Units</u>	<u>Employment</u> ¹	<u>Gross Trips</u> ²
Project	0	13,836	43,700
Alternative 1	0	14,626	48,505
Alternative 2	0	11,748	37,023

1 Based on 350 square feet/employee.

2 Based on the same trip rates used for the project.

THE RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The project represents a long-term commitment to the ongoing intensification of industrial, commercial and office uses and consolidation of oil production uses. The primary effect of this project is to commit an underutilized area to industrial, technology, continuation of limited oil production uses and office uses. The development of the project will increase the study area's productivity in terms of greater utilization and greater economic return. The project would serve to recycle existing underutilized property and increase the productivity and human use of the land. Implementation of the project will remove minimum nursery uses.

Development of the site as an industrial complex will have an initial 75- to 100-year lifespan. This represents a relatively long-term commitment to such uses. It is logical to assume that the various components of the project gradually may be replaced by other productive activities as redevelopment of the land occurs in response to future human needs.

Advantages to near-term development include greater economic productivity from the land, locational choice, generation of new employment and increased revenues to businesses in the vicinity as well as revenues to the City of Carson. This intensification of use in existing urban areas can be considered consistent with the urban development policies of the Southern California Association of Governments (SCAG) and the State of California.

Delaying development until the future would likely entail similar impacts to the physical environment as does the current project proposal. These include traffic, demands for public services and utilities, etc.

Since the site has been altered, little benefit is achieved on environmental grounds by postponing development to a later date.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF ENERGY SUPPLIES AND OTHER RESOURCES SHOULD THE PROJECT BE IMPLEMENTED

Approval of the project and related actions will allow the construction of new industrial and office facilities on the proposed site. Transformation of the site to such uses is a short-term irretrievable commitment of the site. After the 75- to 100-year structural lifespan of the facilities, it may be feasible to redevelop the site again for an alternative land use. Any type of future redevelopment presently conceivable will also require irretrievable commitments of energy supplies and other resources. Therefore, development of the project will result in an irreversible and irretrievable commitment of energy supplies and other resources.

Provided below is a summary of the anticipated long-term commitments of resources that may directly or indirectly result from project implementation.

ENERGY RESOURCES

The transformation of the site to business park uses will represent a long-term commitment to a variety of resources. As fossil fuels are the principal source of energy, it can be stated that the proposed development would incrementally reduce existing supplies of fuels including fuel oil, natural gas, and gasoline. These energy resource demands relate to initial project construction, heating and cooling of buildings, and transportation of people and goods. It has been estimated that ultimate development of the study area would involve an annual energy consumption of approximately 32,882 mwh of electricity and 112.8 mcf of natural gas,¹ thereby creating a long-term irreversible commitment to energy resource consumption.

¹ Air Quality Handbook for Preparing Environmental Impact Reports, revised April 1987, Southern California Air Quality Management District.

GROWTH-INDUCING AND CUMULATIVE IMPACTS

Approval of the project would provide land use designations that permit the development of business park uses in an area already planned for urban uses. A variety of residential and commercial and business park uses exist on the properties surrounding the project site. Development of the site is expected to be complementary to those uses. From this perspective, the project could be considered a response to prior growth inducements associated with the land uses recently approved in the site vicinity and area employment centers.

The most visible impact on the project will create in conjunction with other past (traffic consultant has identified only one project, the 120-acre Dominguez Technology Centre site on the southeast corner of Victoria Street and Wilmington Avenue), present and reasonably foreseeable future projects, is traffic impacts. An analysis of the cumulative traffic impacts and mitigation measures for streets and intersections related to the project are provided in the traffic/circulation section.

As indicated in the population/housing/employment section, the City of Carson is relatively stable, with no major housing growth anticipated through the year 2004. Population and employment in the city is expected to be slightly higher in the next ten years. Development of the site as industrial and office uses will contribute to a development pattern which is consistent with the surrounding area and will not have a substantial influence on surrounding parcels or their ultimate land uses.

The added population associated with this project will create an additional demand for goods and market support services in the general vicinity, which in turn may stimulate growth in various other sectors of the economy. This latter effect, known as the economic multiplier, can be considered somewhat circular and self-sustaining until stabilization ultimately occurs with the saturation of land and economic resources. However, goods and market support services are limited in the area. This factor is insignificant as a growth-inducing impact.

As discussed in the public services and utilities section, there is no significant taxing of existing service facilities in the site area except for one existing sewer facility. However, these impacts can be mitigated through the construction of new sewer lines and the implementation of water conservation measures.

The project neither removes existing obstacles to growth nor facilitates other activities which would adversely affect the environment. Therefore, the growth-inducing impacts of the project are evaluated as insignificant.

The site lies within an urbanized area which is currently in the process of being developed. The city generally encourages new development through the re-use of existing underdeveloped and substandard properties as well as a new development.

On a regional level, however, growth is expected to continue in association with major industry firms located in adjacent communities. However, regional growth is reflective of current trends and not related to the development of the proposed site. Cumulative growth in the region, combined with project traffic, represents the major cumulative impact in the project area. The cumulative traffic impacts are evaluated in TRANSPORTATION/CIRCULATION and AIR QUALITY. Additional growth within the Los Angeles region will contribute further to the transportation/circulation problems which currently affect the region.

Cumulative Land Use Impacts. The project, in conjunction with other past, present, and reasonably foreseeable future projects, will have a significant cumulative impact on land use. Some of these projects and reasonably foreseeable future projects will also require the amendment to or modification of existing plans and policies in several jurisdictions including the cities of Compton, Long Beach and Lawndale. Additionally, the implementation of the projects will cause incremental land use impacts that when viewed with other project and related project impacts (eg., traffic) should be considered cumulatively significant. Since the area is highly urbanized, the focus of cumulative land use impacts should be placed on associated impacts as opposed to the sole conversion of land use. As cumulative projects are approved, general plan amendments, revisions to

regional population and housing projections, revision of the air quality management plans and amendments to circulation elements and plans will occur. Cumulative air quality conditions are monitored and regulated by the California Air Resources Board (CARB), the South Coast Air Quality Management District (SCAQMD), and the Southern California Association of Governments* (SCAG).

Cumulative traffic impacts are mitigated by the recommended circulation improvements. The school district is responsible for formulation of master facilities plans and providing educational facilities and services within the district's boundaries. When districts are facing crowded conditions, they may levy impact fees on new development and the Compton Unified School District may exercise those powers if cumulative conditions warrant.

A number of ongoing state and city traffic analyses are currently being conducted to evaluate potential road improvements and funding mechanisms in the cumulative project area.

Cumulative Traffic and Circulation Impacts. The project, in conjunction with other past, present, and reasonably foreseeable future projects, will have a significant cumulative impact on traffic and circulation. The impacts of cumulative projects (Table 12 in the Draft EIR) are included in the traffic, air quality and noise analysis because the trips generated by those projects are included in the traffic modeling completed for the Draft EIR, and mitigations are proposed for the cumulative traffic impact. An analysis of the cumulative traffic impacts and mitigation measures for locations throughout the city are provided in TRANSPORTATION/CIRCULATION. The project is providing its fair share of mitigation by providing circulation improvements for the project (mitigation measures 1-5 in the Draft EIR), and participating in its fair share of circulation improvements for cumulative traffic impacts (mitigation measures 6-10). In addition, the applicant is developing a funding mechanisms for cumulative traffic improvements, as required by mitigation number 13 in the Draft EIR. The fair share contribution will be jointly determined by the city and the developer based upon a traffic share/funding analysis.

The Air Quality Management District is adopting specific mitigation measures, as individual rules and regulations, as mentioned in the Air Quality section (p. 82) of the Draft EIR to comply with federal and state air quality standards for ambient air quality by the year 2007. These rules and regulations will apply to the project and to all other cumulative projects. Rule XV (ride-sharing programs) is one of many measures included in the AQMP which has already been adopted.

Cumulative Public Service Impact. The project, in conjunction with other past, present, and reasonably foreseeable future projects will result in increased usage and demand for electrical services, natural gas, domestic water, sewer treatment and solid waste disposal, along with increased demand for schools, fire and police services. The project's contribution to cumulative impacts on schools in the area is likely not significant.

As projects are submitted, the City shall review the impacts of each development to ensure that adequate services are provided to the development. The City shall plan for the expansion and/or construction of service facilities through General Plans, Master Plans and Specific Plans.

Mitigation measures for traffic, air quality and noise impacts are already addressed in the Draft EIR. There are two types of cumulative impacts: those occurring because of multiple projects and those due to the project but which are insignificant by themselves, but when considered simultaneously (cumulatively) across a threshold and result in a combined cumulative impact. The project is required to participate in cumulative traffic improvements on a proportional or fair-share basis for cumulative traffic impacts. There are no additional project-cumulative impacts, due solely to the project, which are not discussed as individual impacts, and mitigations are provided for these items.

With respect to cumulative traffic and circulation impacts, the discussion is limited because, as noted, cumulative impact traffic conditions were included in the traffic impacts section of the Draft EIR. The mitigation measures imposed on or incorporated into the project to deal with traffic impacts, mitigate for the "existing plus cumulative plus project" condition. Nonetheless, as the discussion in the traffic section noted, traf-

fic is a regional problem, that will continue to be a regional problem in the foreseeable future, even with the mitigation measures proposed for this project. No one project can mitigate against the regional growth impacts that the greater Southern California region is experiencing. As for "Cumulative Public Service Impacts," again, the prior discussion is intended simply to acknowledge that, regionally, the impacts of growth go beyond traffic and related impacts (eg., air quality and noise), and include impacts on the infrastructure of any community: sewer systems, water delivery systems, schools, and the like.

Table 31
PUBLIC SERVICE COMPARISONS

	<u>4 Cumulative Projects</u>	<u>Specific Plan</u>
Electrical (mwh/year)	6,184	32,882
Natural gas (mcf/year)	47.4	112.2
Daily water demand (thousands of gallons)	261	261
Daily sewage flow (thousands of gallons)	160	235
Solid waste (tons/year)	6,834	8,270

As for measures to mitigate for public service impacts, the traditional approach, indeed the approach that has been mandated by recent legislation (eg., Government Code Section 66000 et seq.), has been to require a project only to mitigate for its direct impacts on public services, rather than attempt to require a project to mitigate for impacts caused by other developments. The Draft EIR did not include a discussion of other approaches because the city may not legally require this project to solve problems created by other projects, rendering such measures infeasible under CEQA definitions.

To reduce the cumulative impact of costs for expanded police and fire services and school services, appropriate fees will be collected from new development. If specific mitigation measures for cumulative projects are required, since the city has no specific policies, it would need to be cast in the context of SCAG regional plans. For example, the following mitigations may be appropriate:

1. All cumulative projects subject to environmental review shall be reviewed by the city and SCAG for conformance with the Regional Mobility Plan, the Air Quality Management Plan, the Growth Management Plan and the Regional Housing Needs Assessment.
2. All cumulative projects subject to environmental review shall be reviewed by the city and the service provider for consistency between master facility plans, projected service demands and project demands at buildout.

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