VOLUME I

DRAFT ENVIRONMENTAL IMPACT REPORT

CARSON MARKETPLACE

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Volume I

Draft Environmental Impact Report

Carson Marketplace

Lead Agency

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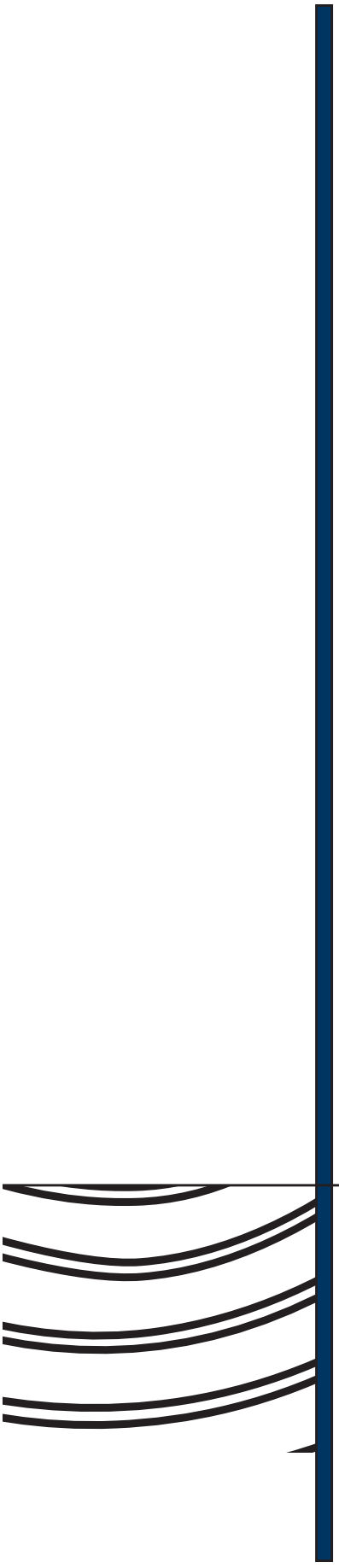


I. Summary

I. SUMMARY

1. PURPOSE OF THE EIR

This EIR has been prepared pursuant the California Environmental Quality Act (CEQA) to evaluate the impacts of a new development Project that would be constructed in the city of Carson on a site located just southeast of the I-405 Freeway between Main Street and Avalon Boulevard. The Project would provide a mixed-use development with some or all of the following uses: regional commercial, commercial recreation/entertainment, office neighborhood commercial, restaurant, hotel, and residential.

This EIR is a Project EIR, as defined by Section 15161 of the State CEQA Guidelines and, as such, serves as an informational document for the general public and Project decision-makers. The City of Carson Redevelopment Agency (Redevelopment Agency) has the principal responsibility for approving the Project and, as the Lead Agency, is responsible for the preparation and distribution of this Draft EIR pursuant to CEQA Statute Section 21067. The Governing Board of the Redevelopment Agency is the Carson City Council.

The intended use of this EIR is to assist the Carson Redevelopment Agency and the City of Carson in making decisions with regard to the Carson Marketplace Project. This Draft EIR is also intended to cover all State, regional, and local governmental discretionary approvals that may be required to construct or implement the proposed Project. Additional agencies using the document would include, but would not necessarily be limited to, the State Department of Toxic Substances Control (DTSC), the Regional Water Quality Control Board and the State Department of Transportation (CALTRANS).

This Draft EIR evaluates the environmental impacts determined by the Redevelopment Agency to be potentially significant and discusses the manner in which the Project's significant effects can be reduced or avoided through the implementation of mitigation measures. Impacts that cannot be mitigated to a level below significance are considered significant unavoidable adverse impacts. In accordance with Section 15130 of the State CEQA Guidelines, this EIR also includes an examination of the effects of cumulative development in the vicinity of the proposed Project. Cumulative development includes all anticipated future projects that, in conjunction with the proposed Project, may result in a cumulative impact. In addition, this Draft EIR evaluates the extent to which environmental effects could be reduced or avoided through the implementation of feasible alternatives to the proposed Project. Furthermore, the Redevelopment Agency is responsible for certifying the EIR and adopting any mitigation measures needed to address the Project's significant environmental impacts. For projects that

result in any unmitigated or under-mitigated significant environmental effects, the Redevelopment Agency may, after making a series of findings, certify the EIR upon adoption of a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093.

2. EIR FOCUS AND EFFECTS FOUND NOT TO BE SIGNIFICANT

In compliance with CEQA Section 21080.4, a Notice of Preparation (NOP) was prepared by the Redevelopment Agency and distributed for public comment to the State Clearinghouse, Office of Planning and Research, responsible agencies, and other interested parties on May 12, 2005. During the NOP review period, a public scoping meeting was held at the Carson Community Center on June 1, 2005. The purpose of the scoping meeting was to obtain input from the public regarding the scope of the issues and the alternatives that would be analyzed in the Draft EIR.

The Project's Initial Study, provided to the Office and of Planning and Research and responsible agencies and made available to the general public, identified those environmental topics for which the proposed Project could have adverse environmental effects and concluded that an EIR would need to be prepared to document these effects. A copy of the NOP and Initial Study, the NOP distribution list, written responses to the NOP that were submitted to the Redevelopment Agency and written comments submitted at the scoping meeting are included in Appendix A of this Draft EIR.

In the Initial Study, the Redevelopment Agency determined that implementation of the proposed Project may, either by itself or in conjunction with past, present, and reasonably foreseeable future development in the vicinity, have significant effects in the following areas:

- Land Use;
- Visual Qualities;
- Traffic and Circulation;
- Hazards and Hazardous Materials;
- Geology and Soils;
- Surface Water Quality;
- Air Quality;
- Noise;
- Public Services (Police and Fire Protection, Schools, Libraries, and Recreational Facilities); and
- Utilities (Water Supply, Wastewater Generation, and Solid Waste).

The Redevelopment Agency determined that the proposed Project would not have the potential to cause significant impacts in the following areas: Agricultural Resources, Biological Resources, Mineral Resources, Cultural Resources, Hydrology (Drainage and Groundwater Quality), and Population and Housing. Therefore, these areas are not examined in this Draft EIR. The rationale for the finding that no significant impacts would occur for these areas is provided in the Project's Initial Study, included in Appendix A of this Draft EIR.

3. EIR ORGANIZATION

This Draft EIR is organized into the following eight chapters:

I. Summary. This chapter describes the purpose of the EIR, EIR focus and effects found not to be significant, EIR organization, Project background, areas of controversy and issues to be resolved, public review process, discretionary actions, and a summary of environmental impacts and mitigation measures.

II. Project Description. This chapter presents the location, characteristics, and objectives of the proposed Project.

III. General Description of the Environmental Setting. This chapter contains a description of the existing setting and a list of known related projects in the Project area that are anticipated for completion by 2010, the expected time for completion and occupancy of the proposed Project.

IV. Environmental Impact Analysis. This chapter contains the environmental setting, Project impacts, mitigation measures, cumulative impacts and conclusions regarding the level of impact significance after mitigation for each of the environmental issues addressed in this EIR.

V. Alternatives. This chapter provides analyses of each of the alternatives to the proposed Project, and the alternatives considered but rejected from further analysis.

VI. Other Environmental Considerations. This chapter presents an analysis of the significant irreversible changes in the environment that would result from the proposed Project, an analysis of the Project's potential for causing growth-inducing impacts, and an analysis of potential secondary impacts; i.e. impacts that would be caused due to implementation of the Project's off-site mitigation measures.

VII. Persons and Organizations Consulted. This chapter lists all of the persons, agencies, and organizations that were consulted or contributed to the preparation of this Draft EIR.

VIII. Bibliography and References. This chapter lists all of the references and sources used in the preparation of this Draft EIR.

This Draft EIR includes the environmental analysis prepared for the proposed Project and the following appendices:

- Appendix A—Notice of Preparation (NOP), Initial Study, and NOP Letters;
- Appendix B—Mitigation Monitoring and Reporting Program;
- Appendix C—Project Equivalency;
- Appendix D—Traffic Analysis;
- Appendix E—Hazards;
- Appendix F—Air Quality Technical Appendix;
- Appendix G—Noise Technical Appendix;
- Appendix H—Water Supply Assessment Letter;
- Appendix I— Water Consumption, and Wastewater Generation Worksheets; and
- Appendix J— The Carson Marketplace, City of Carson, Retail Impact Study.

4. PROPOSED PROJECT

a. Project Location

The Project site is located in the City of Carson in the South Bay area of Los Angeles County and is currently undeveloped. It is located approximately 17 miles south of downtown Los Angeles and approximately 6.5 miles east of the Pacific Ocean. The Project site is comprised of approximately 168 acres located southwest of the San Diego Freeway (I-405) at and north of the Avalon Boulevard interchange. The Project site consists of two components. The majority of the Project site, consisting of 157 acres, is located south of Del Amo Boulevard, while the remaining 11 acres are located north of Del Amo Boulevard.

The San Diego Freeway (I-405), Harbor Freeway (I-110), Artesia Freeway (SR-91), and Long Beach Freeway (I-710) provide regional access to the Project site. The I-405 Freeway is located adjacent to the Project site's eastern boundary, the I-110 Freeway is located directly west of the Project site, and the SR-91 Freeway is located approximately 2.5 miles north of the Project site. The I-710 Freeway, which is located on Carson's eastern boundary, links the City with the Long Beach and Harbor areas. Locally, access to the Project site is available via Main Street (a north-south thoroughfare on the western side of the Project site), Avalon Boulevard (an exit from the I-405 Freeway and a major north-south arterial, and Del Amo Boulevard (an east-west arterial which bisects the northern portion of the Project site).

b. Project Characteristics

Carson Marketplace, LLC (the "Applicant") is proposing the Carson Marketplace (the "Project"), a 168-acre development located southwest of the I-405 Freeway at and north of the Avalon Boulevard interchange, in the City of Carson. The proposed Project would include some or all of the following uses: neighborhood commercial, regional commercial, commercial recreation/entertainment, restaurant, hotel, and residential. Specifically, the Applicant's proposal consists of a total of 1,550 residential units (1,150 for-sale units and 400 rental residential units), a 300-room hotel, and 1,995,125 square feet (sq.ft.) of commercial floor area.[1] The Applicant is proposing a wide range of land uses in order to create a diversity of on-site activity that responds to the future needs and demands of the southern California economy. In order to fully respond to these demands, the proposed Project includes an Equivalency Program that would allow the composition of on-site development to be modified in a manner that does not increase the Project's impacts on the environment. For example, office uses might be developed in place of a portion of the above proposed uses subject to the provisions of the Equivalency Program as set forth in the Carson Marketplace Specific Plan. Project development would be guided by a comprehensive set of development standards and regulations which are set forth in detail in the Carson Marketplace Specific Plan. These regulations identify permitted uses and development and design standards. These regulations, in combination with the development limits, would define the extent and nature of future on-site development.

The Specific Plan divides the Project site into three Development Districts. Each District has a distinct character and identity, and includes regulations appropriate to the mix of uses within its boundaries, as well as the role of the District within the overall Specific Plan. The three Development Districts are as follows:

- **Development District 1;** Located just south of Del Amo Boulevard. It extends between Main Street on the west and the I-405 Freeway to the east and to the Corridor Road on the south (approximately 480 feet south of Del Amo Boulevard). This District consists of 31 acres and is proposed to include commercial and residential uses.

[1] *The total amount of commercial floor area includes 200,000 sq. ft. for the development of the 300-room hotel.*

- **Development District 2;** Located south of District 1 and along the Project site's freeway frontage. It is the largest of the Development Districts, occupying a majority of the site, and it includes a total of 126 acres. Land uses proposed in Development District 2 include regional and neighborhood retail uses, a commercial recreation/entertainment district, restaurants and a hotel.

- **Development District 3;** Located just north of Del Amo Boulevard. This Development District is 11 acres in size and is proposed to include commercial and residential uses

In addition, the Specific Plan regulations pertaining to Development District 3 are proposed to be implemented by an overlay zone to the existing Commercial Regional (CR) zone. As such, all of the regulations and development standards for the CR zone as set forth in Chapter 1 (Sections 9131.1 through 9138.71) of the Carson Municipal Code also apply to Development District 3. Thus, the property owner of Development District 3 may choose to process a development pursuant to either the regulations and development standards for the CR zone or the regulations and development standards for the Carson Marketplace Specific Plan. If the property owner of District 3 chooses to pursue a development program different than the one analyzed in this Draft EIR, additional CEQA review may be required.

c. Discretionary Actions Requested and Permits Required

Implementation of the proposed Project would require, but would not necessarily be limited to, the permits and approvals listed below. Other actions of local, regional and/or federal agencies may be required.

Carson Redevelopment Agency

- Owner Participation Agreement;
- Improvement or other bonds; and
- Revenue bonds.

City of Carson

- Adoption of the Carson Marketplace Specific Plan;
- General Plan Amendment;
- Zone Change;

- Implementation of an Overlay Zone for Development District 3;
- Development Agreement;
- Building-related permits such as general building, foundation, plumbing, sewer, HVAC, electrical, landscaping, fencing, paving, etc.;
- Construction-related encroachment permits;
- Subdivision Map and/or Tract Map approvals;
- Vacations of existing on-site roadways;
- On-site public improvements; and
- Street improvements as required.

State of California

Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control

- Approval of refinements to the existing Remedial Action Plan (RAP) in conjunction with the Project.
- Oversight of RAP implementation.

Regional Water Quality Control Board

- Issuance of a Waste Discharge Permit.

California Department of Transportation (Caltrans)

- Improvements to the Avalon Boulevard interchange to the I-405 Freeway; and
- Any required Caltrans approval related to signage.

Additional Discretionary Actions

- Any other discretionary actions or approvals that may be required to implement the proposed Project.

5. BACKGROUND AND CONTEXT FOR THE PROPOSED PROJECT

a. Former On-Site Landfill Operations

The 157-acre portion of the Project site that is located south of Del Amo Boulevard (Development Districts 1 and 2) was used as a Class II landfill under an Industrial Waste Disposal Permit issued to Cal Compact, Inc. by the County of Los Angeles. Landfilling on the 157-acre site began in 1959, shortly after the banning of incinerators in Los Angeles County in 1957. Landfilling occurred from April 1959 to December 1964 with an approximate closing date of February 1965.

During the life of the landfill, less than 7 million cubic yards (cy) of solid municipal waste and 2.6 million barrels of industrial liquid waste were received at the landfill. Waste received included organic wastes, such as solvents, oils, and sludges, as well as heavy metals, paint sludges, and inorganic salts.

As a result of contamination on and adjacent to the landfill, the 157-acre site is listed by the State of California Department of Toxic Substances Control (DTSC) as a hazardous substances site. On March 18, 1988, Remedial Action Order No.*HSA87/88-040 was issued requiring investigation of contamination at the landfill site and preparation of remedial action plans.

Due to the size and complexity of the former landfill site, DTSC divided its remediation into two operable units.[2] The Upper Operable Unit (Upper OU) consists of the site soils, the waste zone above and within the Bellflower Aquitard, and the Bellflower Aquitard down to but not including, the Gage Aquifer. The Lower Operable Unit (Lower OU) is composed of the Gage, Lynwood, and Silverado Aquifers, and all other areas impacted by the geographic extent of any hazardous substances which may have migrated or may migrate from the aforementioned areas or from the Upper OU. The operable units are also established to prioritize the remedial response to the areas of known impacts (Upper OU) versus potential impacts (Lower OU).

Investigations of the Upper OU documented the presence of landfill gases (methane and carbon dioxide) as well as volatile organic compounds (VOCs) and metals in the landfill's soil and groundwater. A Remedial Action Plan (RAP) was prepared and approved by DTSC for the

[2] *Federal regulations at 40 CFR 300.5 define an operable unit as "…a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of release, or pathway of exposure. The cleanup of the site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site."*

Upper OU in 1995. A RAP for the Lower OU was prepared to address the potential impact of groundwater contamination in the Upper OU on the Lower OU. The RAP for the Lower OU was approved by DTSC on January 24, 2005.

Implementation of the Upper OU is required to make the site safe for the proposed Project. Implementation of the Lower OU would be protective of groundwater resources.

b. Previous Development Proposal—Metro 2000

The Project site was the subject of a previous development proposal in the early 1990s. Specifically, in 1993, a project known as Metro 2000 was proposed as a multi-phase development. Phase I of the Metro 2000 project included the development of L.A. MetroMall, a 1.83-million–square feet regional mall consisting exclusively of retail outlet stores. Phase II of the Metro 2000 project included an additional 687,400 square feet of regional commercial retail uses and 600,000 square feet of office floor area. Therefore, buildout of the Metro 2000 project consisted of a total of approximately 3.1 million square feet of gross buildable area. A Draft and Final EIR for Metro 2000 were prepared and certified by the Carson City Council. In addition, the City Council approved Phase I of Metro 2000. Following certification of the Metro 2000 EIR by the Carson City Council in 1995, the State Department of Toxic Substances Control (DTSC) approved the RAP for the remediation of the site. However, the Metro 2000 project never went forward.

6. AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

Potential areas of controversy and issues to be resolved by the Redevelopment Agency include issues known to be of concern to the community and issues raised in the response to the Project's NOP. Issues known to be of concern to the community include safety of the site for urban development, given the sites brownfield status, traffic, land use compatibility (in particular the relationship and potential impacts on neighborhoods south and southwest of the Project site), visual quality, air quality, noise, vibration, and hazardous materials. Additional issues raised in response to the NOP include impacts on public services, in particular police, fire and library service impacts.

7. PUBLIC REVIEW PROCESS

As previously discussed, the Redevelopment Agency circulated an NOP for the proposed project on May 12, 2005. During the following 30-day comment period, 14 letters were received. Also, a public scoping meeting was held on June 1, 2005. The NOP and letters received during the NOP comment period, and the three written comment cards provided at the scoping meeting are included in Appendix A of this Draft EIR

The Draft EIR will be circulated for a 45-day review period, as required under CEQA.[3] Following the public review period, written responses will be prepared on all comments received, and these comments and responses will be incorporated into the Final EIR. No final actions (e.g., approval or denial) will be taken on the Project until the Final EIR has been reviewed, certified as complete, and considered by the appropriate decision-makers. Dates of public hearings will be published and officially noticed in accordance with all legal requirements.

8. SUMMARY OF ALTERNATIVES

The State CEQA Guidelines (Section 15126.6 (a)) require an EIR to describe a range of reasonable alternatives to a proposed project, or to the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. As required by the CEQA Guidelines, four alternatives to the proposed Project were identified and analyzed. The four alternatives include a "No Project" alternative (i.e., no change in current site condition), an alternative use, a reduced density alternative, and the development of the proposed Project at an alternative site. These alternatives have been developed and analyzed to compare the relative impacts of these alternatives to the proposed Project. Based on comparative evaluations, forecasts are made as to the environmental impacts of each alternative in contrast to those of the Project, and whether each alternative could attain the Applicant's basic Project objectives. The alternatives that have been selected were done so with the explicit intent of identifying alternatives that might potentially avoid or reduce the Project's significant adverse impacts.

Alternative 1: No Project

The No Project alternative assumes that the Project would not be developed and that the Project site would remain in its existing physical condition. Although some pressure for, and interest in, reuse of the site exists, no project is anticipated to be brought forward in the foreseeable future. Under Alternative 1, the parcel north of Del Amo Boulevard would remain vacant and existing fill and debris would not be removed. Remediation of the existing brownfield portion of the Project site south of Del Amo Boulevard, including the capping of existing waste materials at the former landfill site, would not occur, since the current property owner does not have the funds to implement the RAPs. While the State has pursued other responsible parties and created a remediation fund from the proceeds of lawsuits against those parties, the fund is not sufficient to complete the remediation.

The evaluation of the No Project alternative addresses the requirements of Section 15126.6 (3)(1) of the CEQA Guidelines. The No Project alternative would avoid the

[3] *Public Resources Code Section 21091.*

Project's significant and unavoidable impacts associated with visual resources, traffic, public transportation, air quality, and construction noise. However, the No Project alternative would have less environmental benefit than the Project in relation to site remediation and improvement to groundwater and surface water quality and would, therefore, have a greater impact than the Project in relation to hazards and surface water quality. The No Project alternative would not meet the basic objectives of the Project to achieve productive reuse of a large brownfield site, to promote the economic well being of the Redevelopment Project Area or the City, or to maximize shopping and entertainment opportunities. In addition, the No Project alternative would not meet the Project objectives to provide a diversity of employment opportunities for local residents, to contribute to the City's housing stock or to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City.

Alternative 2: Reduced Project— Mixed-use Business Park

Alternative 2 would be developed on the same site as the proposed Project, with uses that are in keeping with the City of Carson 2004 General Plan update land use designation of "Mixed-Use - Business Park." This land use category is envisioned to provide for a variety of businesses and professional offices, services and associated business as well as retail activities in an attractive environment. Development under this Alternative would include a mix of light industrial/business park uses and regional and neighborhood-serving commercial uses, including restaurants. In lieu of a Specific Plan, development would be subject to the requirements of the City's Light Industrial/Manufacturing (ML) zone and the site's existing Design Overlay and Organic Refuse Landfill Overlay designations. The total floor area would be equivalent to the commercial floor area proposed by the Project. It is assumed that the floor area that would occur under this Alternative would be equally divided between commercial and light industrial/business park uses. Remediation of the former landfill site, including the capping of waste materials and coverage of the former landfill site by impervious concrete foundation, parking lots, and streets would be the same as under the Project.

Alternative 2 would incrementally reduce unavoidable and significant impacts associated with visual resources, traffic, public transit, and air quality during Project operation. However, with the exception of air toxics, Alternative 2 would not reduce these impacts to less than significant levels. As with the Project, visual resources, construction noise and air quality impacts would continue to be significant. Alternative 2 could meet the basic objective of the Project to achieve a productive reuse of a large brownfield site, although a smaller project may not generate sufficient revenues to implement the RAP, and to promote the economic well being of the Redevelopment Area. Alternative 2 would provide employment opportunities for local residents by generating substantial construction work opportunities and long-term jobs. In providing commercial uses, Alternative 2 would meet the objective to diversify the economic base of the Redevelopment Area and the City, but not to the same extent as the Project. Alternative 2 would not maximize shopping opportunities or provide hotel, entertainment or

recreation uses. Alternative 2 could partially meet the objective of the Project to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City by locating commercial development and signing along the I-405 Freeway. However, since Alternative 2 would have fewer commercial uses and no hotels or residential uses, it would not provide the same diversity and synergism among the on-site uses, level of pedestrian traffic, or vibrancy as the Project. Alternative 2 would also not meet the Project objective to contribute to the City's stock of rental and for sale housing units and affordable housing.

Alternative 3: Reduced Project

The Reduced Density Alternative, Alternative 3, assumes that the scale of the Project would be reduced through a 25 percent reduction in residential units and commercial floor area. The proportionate mix of commercial and residential uses would be the same as under the Project; however, maximum development would consist of 1,162 residential units and commercial floor area would consist of 1,496,343 square feet. The reduction in development under Alternative 3 could be achieved through fewer structures (smaller building footprint) or reduced building heights. The former landfill site would be capped and completely covered by impermeable foundation pads, parking lots, and streets, as was the case with the Project.

Alternative 3 could meet the Project objective to achieve a productive reuse of a large brownfield site by generating the revenue necessary to pay for and effectuate remediation of the environmental conditions on the Project Site, although a smaller project may not generate sufficient revenues. Alternative 3 would promote the economic well being of the Redevelopment Project Area by diversifying and increasing the area's economic base and would assist in creating both short and long term employment opportunities for the residents of the Redevelopment Project Area and the City. Alternative 3 would meet the Project's objective to maintain a sustainable balance of residential and non-residential uses. Alternative 3 would also meet the objective to generate substantial construction work opportunities and long-term jobs in the commercial and hospitality industries. However, since Alternative 3 would have 25 percent fewer residential units and commercial floor area, it would not meet the objective to maximize work opportunities and shopping and entertainment opportunities to the same extent as the Project. In providing a mix of regional and neighborhood commercial uses, hotel, restaurants, and residential uses, Alternative 3 would meet the objective of the Project to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City. However, since Alternative 3 would reduce all uses by 25 percent, it would not provide the same level of urban focal point, level of pedestrian traffic, or vibrancy as the Project. Alternative 3 would contribute to the City's stock of rental housing and for sale units, including affordable housing, although not to the same extent as the Project. Alternative 3 would incrementally reduce unavoidable and significant impacts associated with traffic, public transit, and air quality during Project operation, but would not reduce these impacts to less than significant levels. As

with the Project, visual resources, construction noise, and air quality impacts would continue to be significant.

Alternative 4: Alternative Location

Alternative 4 assumes that the Project would be moved to another location and no development would occur at the Project site. The purpose of the evaluation of an Alternative site is to ascertain if changing the location of a project to another site would reduce or eliminate any potentially significant environmental impacts that may be unique to the Project's location, and whether relocation could potentially eliminate Project impacts. For the purposes of this analysis it is assumed that Alternative 4 would be constructed according to the Project's design and intensity under a Specific Plan comparable to that prepared for the Project at its proposed site. Specific criteria in identifying an Alternate Site are location within the same jurisdiction and adequate size to accommodate the scope of the Project. In accordance with these criteria, the Shell refinery site located approximately one mile east of the proposed Project site is selected for the evaluation of an alternative location. The Alternative Site is an approximately 280-acre parcel, located between Del Amo Boulevard and Dominguez Street, just west of Wilmington Avenue.

Alternative 4 would, like the Project, put to productive use a blighted, underutilized site within Redevelopment Project Area No.One. In so doing it would contribute to the economic well being of the Redevelopment area and the City. Alternative 4 would contribute to the creation of a vibrant urban core for the City; however, since this location would not take advantage of the site's proximity to the San Diego Freeway, it would not have the same level of gateway appeal as the Project site. Alternative 4 would also meet the Project objective to contribute to the City's housing stock of rental and for sale units, including affordable housing. In summary, Alternative 4 would not avoid the Project's significant and unavoidable impacts associated with visual quality, traffic, public transit, air quality, and construction noise. Alternative 4 would cause the remediation of soils and groundwater at the Alternate Site, and would have impacts similar to those of the Project in relation to hazards and surface water quality.

Environmentally Superior Alternative

The State CEQA Guidelines require the identification of an environmentally superior alternative to the proposed Project and, if the environmentally superior alternative is the "No Project Alternative," the identification of an environmentally superior alternative from among the remaining alternatives. An environmentally superior alternative is an alternative to the Project that would reduce and/or eliminate the significant, unavoidable environmental impacts associated with the Project without creating other significant impacts and without substantially reducing and/or eliminating the environmental benefits attributable to the Project.

Selection of an environmentally superior alternative is based on an evaluation of the extent to which each alternative reduces or eliminates the significant impacts associated with the Project, and on a comparison of the remaining environmental impacts of each alternative. Through the comparison of the environmental characteristics and potential impacts of each of the alternatives, the Reduced Project Alternative, Alternative 3, is concluded to have a lesser degree of environmental effect than any of the other Project alternatives, exclusive of the No Project Alternative. As Alternative 3 would have incrementally less impact relative to the Project and other evaluated alternatives, CEQA requires that this alternative be deemed the Environmentally Superior Alternative. Although Alternative 3 would not meet all of the basic objectives of the Project, it would, nonetheless, partially achieve most of the Project's basic objectives. It should be noted that, other than the No Project Alternative, no alternative would reduce the Project's significant, unavoidable traffic, public transportation, air quality and construction noise impacts to levels that are less than significant.

9. SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

9.1 Land Use

a. Environmental Impacts

The Project would result in the conversion of vacant lands to developed uses with residential units and a variety of commercial uses (neighborhood commercial, regional commercial, visitor-serving commercial recreation/entertainment, and restaurants). In so-doing, it would provide a large amount of in-fill development within an existing urban/built environment. The development would be implemented via the Carson Marketplace Specific Plan. The Specific Plan would regulate the amount and types of development, the size and arrangement of buildings, on-site circulation and open space, as well as the general appearance of on-site development. The Land Use analysis evaluated the potential impact of the Specific Plan and the development that is would allow with regard to the following three issues: (a) Compatibility with Land Use Plans, Policies, and Regulations, (b) Existing Land Use Patterns, and (c) Sustainability of Existing Uses.

(1) Project Compatibility with Land Use Plans, Policies, and Regulations

The proposed Project would be compatible with the City's General Plan, as well as the Redevelopment Plan for Project Area No. One Merged and Amended, as these documents encourage the development of the Project site, with a project that would accomplish the following: (1) provide for the productive use of a brownfield site; (2) provide a signature project for the City with freeway visibility; (3) provide a mixed-use development with shopping, entertainment, restaurant, hotel and residential uses; and (4) increase housing and employment opportunities within the City. While the Project would require amendments to the General Plan

land use designations, the uses allowed under the Specific Plan would be compatible with these designations as it implements numerous General Plan policies. For example, the Project would allow commercial uses that are otherwise allowed under the existing designations, the Project would not preclude the development of light industrial uses that might have occurred at the Project site to occur at other locations, and the provision of housing would meet numerous City policies regarding the provision of mixed-use development and additional housing opportunities. The Project would also be compatible with the City Zoning ordinance as the Specific Plan would provide regulations for allowed uses, densities, height limits, setbacks and ground coverage, that are equivalent to or more protective of the environment than existing zoning regulations. It would do this in the context of a planned development, addressing an overall design for the Project site. The Project would also be compatible with SCAG policies by accommodating anticipated regional growth, providing housing and employment opportunities, and by providing a clustered development at a regionally accessible location. Thus, Impacts regarding compatibility with land use plans, policies and regulations would be less than significant.

(2) Impacts on Existing Land Use Patterns

The Project would be an in-fill development located within an existing urban setting, and would provide a continuation of existing development patterns within the northwestern portion of Carson. Furthermore, the Project would not disrupt important linkages between existing districts surrounding the Project site, since the surrounding uses vary and are located within distinct areas. The Project uses would not place uses of a nature or proximity that would alter the character of the existing land uses surrounding the Project site, due to buffering and/or a range of land use relationships that are typical of the urban environment. Thus, impacts on existing land use patterns would be less than significant. Potential specific impacts on adjacent uses, particularly the residential uses south and southwest of the Project site are addressed in other sections of the Draft EIR, with numerous mitigation measures recommended to reduce impacts. Sections that particularly focus on these issues include Visual Quality, Noise, and Air Quality.

(3) Impacts on the Sustainability of Existing Uses

The Project proposes to develop 1,995,125 square feet of commercial space with a mix of retail, entertainment and hotel uses. This development would support commercial economic activity that would compete with existing retail uses for meeting the needs of the population. However, any such affect of the Project is forecasted to have only a short-term negative effect upon existing retail uses within the market area served by the Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e. by 2020) as the local market continues to grow. Therefore, it is not anticipated that existing retail uses in the Project's market area would fall into large-scale physical disrepair, unable to recover with natural increases in economic demand in the future. Impacts on the physical environment from Project induced vacancies or effects on sales would thus be less than significant.

b. Mitigation Measures

As no significant land use impacts would occur, no mitigation measures would be necessary.

c. Cumulative Impacts

The Draft EIR has identified 36 related projects that may be developed in the Project area in the same time period as the proposed Project. These projects are diverse, varying in type, size, and location. As such, they would provide further urban in-fill development within the local area, but would not comprise a major change in the land use patterns within the City or region. None of the related Projects is located in the immediate vicinity of the Project site; and none would contribute with the Project to the land use relationships between those at the Project site and those in immediately adjacent areas. The identified related projects within the City of Carson are subject to compliance with City regulations and subject to review by the City for compliance with the General Plan and the Carson Municipal Code. The proposed Project would be compatible with City policies, land use plans, and regulations; and would not contribute to a cumulative effect of multiple projects having adverse effects on the environment due to their incompatibility with regulatory requirements. The cumulative impacts of the Project plus other growth on the sustainability of surrounding retail uses would not be greater than that reported for the Project above, as the analysis of potential Project impacts includes the incorporation of such development. Thus, cumulative impacts would be less than significant with regard to existing land use patterns; compatibility with plans, policies and regulations; and the sustainability of existing retail uses.

d. Level of Significance After Mitigation

Project development would result in less than significant land use impacts.

9.2 Visual Resources

a. Environmental Impacts

The Project would allow the conversion of a long-standing area of vacant land to developed uses with residential units and commercial development (neighborhood commercial, regional commercial, visitor-serving commercial recreation/entertainment, and restaurants). In so-doing, it would change the appearance of the Project site, would add new building mass that would alter existing view conditions, cause off-site shading, and alter the night-time appearance of the site with artificial lighting. Each of these potential impacts is addressed separately in the analysis of the Project's impacts on visual quality.

(1) Aesthetic Character of the Area

The analysis of the Project's impact on aesthetic character identifies a potentially significant impact on the site's standing as a valued contributor to the aesthetic character of the area. While the site is fenced and contains no unique natural features or valued visual features, it offers visual relief from development due to its lack of buildings and a sense of spaciousness to those surrounding and traveling through the Project area. This open character of the site would be substantially altered with conversion of the site to a developed appearance. This constitutes a significant impact of the Project.

Otherwise, Project impacts on aesthetic character would be limited due to the provisions of the Carson Marketplace Specific Plan that limit the types and location of site uses, limits densities and building heights, and provides design guidelines for landscaping, buildings and ancillary structures, and signs. With these limitations, impacts of development under the Project's Conceptual Plan would be less than significant. Furthermore, the Project would portray a character that is in keeping with similar large-scale developments within the region. Development along the Project edges would be limited and would not substantially contrast with the visual character of the surrounding areas. Further, impacts on aesthetic character during construction would be less than significant since the appearance of the Project site during construction would be typical of that occurring in urban areas, would not adversely affect unique aesthetic resources, and viewing conditions of ground level activity would be limited from most off-site locations (except Del Amo Boulevard) due to the Project's elevation atop a berm that faces many off-site locations.

Impacts of the Project on the aesthetic character of the Project area could vary from that which would occur the Applicant's Conceptual Plan. If such an affect were to occur, the impact of the Project on aesthetic character of the Project area would be substantially the same as with the Conceptual Plan. However, a varied development program could have significant impacts on aesthetic character if taller buildings, i.e. the hotel or the movie theaters, were located too close to existing residential development, or signs along the I-405 Freeway were not placed in an appropriate manner. Mitigation measures are proposed to address such potential impacts.

(2) Views

The proposed Project's impacts on views addresses what would happen when Project buildings are located between visual resources and view locations that surround the Project site. The Project site is not considered a view resource, as it is in a degraded state, and does not include unique or natural qualities. The existing visual environment in the Project area is limited to that of an urbanized area with its array of interspersed developments, open spaces, and infrastructure improvements. The Project area does not contain notable features that would typically fall under the heading of view resources, e.g. unique geologic features, natural areas,

etc. Views of the two notable features that might catch the eye of travelers through the area are the Goodyear Blimp site located on the north side of the I-405 Freeway, and the large fiberglass statue of a man holding a golf club located on the south side of the I-405 Freeway. Views of these two visual resources would not be lost due to Project development. Views over the Project site are limited due to intervening development, the flat terrain in the areas surrounding the Project site, and that the Project site sits atop a berm that slopes down to surrounding areas. Therefore, the proposed Project would not substantially diminish any such views, and impacts on views of unique, and/or valued scenic resources would be less than significant.

(3) Shade and Shadow

The Project would add new buildings to the Project site that would cause shading at off-site locations. The only shadow sensitive uses that could be affected are the residential units south and southwest of the Project site. Project shading of these uses would be limited. The greatest shading on nearby residential development would occur during winter mornings and that shading on the off-site residential properties closest to the Project site, during the hours analyzed, would occur for less than one hour. This is less than the 3-hour significance threshold, and thus, impacts on shading would be less than significant.

(4) Artificial Lighting

The proposed Project would add new lighting to the Project area causing very notable increases to the on-site lighting levels in relation to the existing setting. Project lighting would be typical of lighting generally found in large-scale commercial development. At the same time, Project lighting would be provided pursuant to the Project's lighting guidelines, which include requirements limiting light intensity, light control methods (e.g. shielding of lighting), and pole heights. The intention of these guidelines is to limit the lighting to levels within the needed range of lighting required for the Project uses and site security. In particular, the guidelines focus lighting on-site, and limit the glow that could occur on the Project site. With these limitations, Project lighting would not substantially alter the character of off-site areas surrounding the Project site and would not interfere with off-site activities. Therefore, impacts of Project lighting would be less than significant.

b. Mitigation Measures

The above analysis identified a significant impact regarding the loss of a valued aesthetic resource; i.e., the openness that is provided by the existing undeveloped Project site. This loss of openness occurs as a result of placing development at the Project's location rather than by the particular type or size of development. Any notable development on the Project site would change its currently undeveloped character. Therefore, this significant impact cannot be mitigated.

Two other potentially significant impacts were identified that could occur if development varied from that shown in the proposed Conceptual Plan. Accordingly, the following two mitigation measures address potentially significant impacts that could occur due to the location of taller buildings along the Project's southern and southwestern edges and variations in sign placement that could occur along the Project's I-405 edge. A mitigation measure is also proposed to insure that sign lighting does not adversely affect residential development adjacent to the Project site.

Mitigation Measure B-1: The minimum setback for hotel and theater uses along the Torrance Lateral, adjacent to residential uses, shall be 250 feet.

Mitigation Measure B-2: The distribution, placement and orientation of signs along the I-405 Freeway shall be in substantial compliance with the signage concepts presented in the Conceptual Plan.

Mitigation Measure B-3 The line of sight between lighted signs on the Project site and existing residential development along the Torrance Lateral, opposite to the Project site shall be minimized.

Otherwise, the proposed Project would not generate significant visual resource impacts. This conclusion was based on the assumed implementation of the Specific Plan regulations, guidelines, and standards. The Specific Plan includes a mechanism for site plan review of all development to insure that it does in fact meet the requirements of the Specific Plan. As many of Specific Plan features were relied upon in the above analysis, the following mitigation measure is proposed:

Mitigation Measure B-4: All Project development shall undergo site plan review by the Planning Manager to assure that the following design measures have been implemented:

- **Landscaping**. All Landscaping shall be consistent with a plant palate of native trees, shrubs and groundcovers that shall add uniformity to the Project site. Plants shall be selected to support and complement the themes of the various Project components. Specially themed landscaping treatments shall occur at key locations (e.g. freeway edge, channel slope and lifestyle and entertainment area). Of more detailed note: (1) landscaping themes on Del Amo Boulevard and Main Street shall be coordinated with the landscaping of the Carson Street Conceptual Visualization and the Home Depot Center; (2) continuous shrub and ground cover plantings shall be provided in the medians and edges of internal streets with vertical landscape and/or hardscape elements at a minimum of every 50 feet along the edges; (3) 5% landscape coverage

shall be provided in parking lots, and (4) 50% landscape coverage shall be provided on the sides of parking structures visible to residences.

- **Buildings**. Buildings shall include the following design features: varied and articulated building façades featuring the use of colorful stucco, with a variety of architectural accent materials for exterior treatment at visually accessible locations.

- **Accessory facilities and Walls**. Wall facades shall be varied and articulated. Accessory facilities such as trash bins, storage areas, etc., shall be covered and screened.

- **Lighting**. Lighting shall be limited in intensity, light control methods, and pole heights, so as to be directed on site, and not interfere with off-site activities.

c. Cumulative Impacts

The Draft EIR has identified 36 related projects that may be developed in the Project area. These projects are diverse, varying in function, size, and location. As such, they would provide further urban in-fill development within the local area of each project, but would not comprise a major change in the land use patterns within the City or region. None of the related Projects is located in the immediate vicinity of the Project site; and none would contribute with the Project to the aesthetic conditions occurring along the Project edges. All of the related projects in the City of Carson would be subject to numerous provisions of the Carson Municipal Code, which includes development standards, procedures for Site Plan and Design Review, and, for some sites, design review under the Design Overlay zoning designation. Therefore, other projects in the City of Carson are anticipated to minimize adverse visual impacts. Cumulative impacts of related projects would be less than significant. However, since the proposed Project would have a significant impact, cumulative impacts would also be significant.

d. Level of Significance After Mitigation

The proposed Project would result in the conversion of a large undeveloped vacant site to a developed use, causing a loss of openness that contributes to the aesthetic quality of the Project site and its surroundings. This impact is a significant impact that is inherent in the development of the site, and thus cannot be mitigated or avoided. Two other potentially significant impacts were identified that could occur if development varied from that shown in the proposed Conceptual Plan. Accordingly, mitigation measures were included to address impacts that could occur if buildings taller than those shown in the Conceptual Plan were located along the Project's southern and southwestern edge, or a variation in sign placement were to occur along the Project's I-405 edge. These mitigation measures reduce the impacts to a less than significant level. Otherwise the proposed Project would not have significant impacts on aesthetic character of the surrounding area, views, shading conditions, or nighttime illumination.

9.3 Traffic, Circulation, and Parking

a. Environmental Impacts

(1) Construction Impacts

Project construction would generate traffic from construction worker travel, as well as the arrival and departure of trucks delivering construction materials to the site and the hauling of debris and exported soils generated by on-site demolition and excavation activities. The majority of the trips by construction workers would occur during hours that would avoid the A.M. and P.M. peak traffic periods. As such, impacts attributable to construction worker travel would be less than significant. Haul truck trips would be vastly reduced under the proposed RAP design since the need for the hauling of 2,000,000 cubic yards of clay, requiring approximately 150 truck trips per 10-hour day over a 1.5-year period would be eliminated. Under the proposed RAP refinements, the Project is forecasted to generate one to six truck trips per day, depending on the construction phase. Haul truck traffic on local streets would be limited due to the proximity of the Project site to the I-405 Freeway, and with the implementation of a City-approved Truck Haul Route program, which would prohibit trucks traffic on local residential streets, haul truck activity would have a less than significant traffic impact. Lane and sidewalk closures and utility line construction may affect emergency vehicle access, travel time, and pedestrian access. However, traffic management procedures would be implemented to assist in the movement of traffic that could interfere with emergency vehicles. Furthermore, Project construction activities would not impede access to nearby businesses or residential uses. As a result, construction traffic impacts for these issues would be less than significant. However, pedestrian access would be impeded if closure of both sidewalks on the north and south sides of Del Amo Boulevard were to occur concurrently. This would constitute a significant impact.

(2) Operational Impacts

(a) Study Intersections

The Project would generate an estimated 68,950 daily trips, including approximately 2,510 A.M. and 5,770 P.M. peak hour trips. At Project buildout, the Project would result in significant impacts, prior to mitigation, at 14 of the 27 study intersections. In addition, Project traffic would result in significant impacts along four segments on the San Diego Freeway (I-405) and three segments on the Harbor Freeway (I-110).

(b) Access

Access to the Project site would be provided via several new intersections and/or existing intersections. Intersection access points serving the Project site include Del Amo and Stamps

Drive, Lenardo Drive and Main Street, and Lenardo Drive and the I-405 interchange. Projected service levels at these three new access intersections would be less than significant.

(c) Public Transportation

The Project is forecasted to result in approximately 123 new transit trips during the A.M. peak hour and 282 new transit trips during the P.M. peak hour. It is estimated that the Project could add approximately five person trips on each of the 23 bus lines serving the Project area in the A.M. peak hour and 12 person trips on each of the 24 bus lines serving the Project area in the P.M. peak hour. Twelve persons per bus would represent more than 25 percent of the capacity of a typical 45-passenger bus. Since existing transit services could not readily absorb the Project's forecasted transit riders, the impact of the Project on the regional transit system would be significant.

(d) Parking

The City's General Development Standards would require 10,376 parking spaces for the Project's commercial component and 3,238 spaces for the Project's residential component, for a total of 13,614 parking spaces. In terms of parking demand, the Project's commercial component, based on a shared parking analysis, would have a peak parking demand of approximately 7,578 parking spaces during the weekday peak hour and approximately 8,335 parking spaces during a weekend peak hour; whereas, the residential component would have a separate parking demand of approximately 2,788 spaces, including 233 guest spaces. Thus, the provision of parking per the City's General Development Standards would be more than sufficient to accommodate the Project's estimated peak parking demands. The Specific Plan provides for the implementation of a shared parking program, if it can be demonstrated that the parking that is actually provided would be adequate to meet the Project's peak parking demand. As such, the Applicant may request the approval of a shared parking plan, in lieu of the City's General Development Standards. Since the Project would not provide less parking than is needed to meet the Project's parking demand, impacts relative to parking demand would be less than significant.

b. Mitigation Measures

(1) Construction

Mitigation Measure C-1: The Project shall submit a Construction Traffic Management Plan or Worksite Traffic Control Plan (WTCP) to the City and appropriate police and fire services prior to the start of any construction work phase, which includes Project scheduling and the location of any roadway closures, traffic detours, haul routes, protective devices, and warning signs, for the

purpose of minimizing pedestrian and vehicular impediment and interference of emergency vehicles from Project construction activities.

Mitigation Measure C-2: During construction, at least one sidewalk on either the north or south side of Del Amo Boulevard shall remain open and accessible to pedestrian traffic.

(2) Operation

(a) Intersection Mitigation Measures:

The Project consists of a number of different land uses that may be developed in phases. Since the Project may be implemented over a period of time, its related traffic growth and, thus, the intersection impacts would also occur over a period of time (i.e., some impacts would occur at earlier stages of development, while others would occur at later stages). Thus, an intersection phasing program has been developed to ensure that the necessary improvements are implemented when and where they are needed to achieve the requisite mitigation as development occurs. Table 1 on page 24 lists the impacted study intersections and depicts the point at which significant impacts would occur. As shown in Table 1, the Project's intersection improvement program is organized according to the percentage of P.M. peak hour trip increase at which the next level of intersection improvements is required. The following is a listing of all of the improvements that have been identified to reduce Project impacts to the extent feasible.

Mitigation Measure C-3: Vermont Avenue and Del Amo Boulevard (Intersection No. 5):

- A second left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to include two left-turn lanes, a through lane, and a right-turn lane. The improvement is feasible within the existing right-of-way.

- This mitigation measure shall be implemented at the point of development in which the Project generates 51 to 60 percent of its total trips, in accordance with Draft EIR Table 24.

Table 1

Intersection Mitigation Phasing Schedule

Percentage of Total Trips Triggering Significant Impacts [a]	Significantly Impacted Intersection
1 to 10 Percent	Intersection No. 6: Hamilton Avenue & Del Amo Boulevard
	Intersection No. 7: Figueroa Street & Del Amo Boulevard
	Intersection No. 12: Figueroa Street & I-110 NB Ramps
11 to 20 Percent	No change
21 to 30 Percent	Intersection No. 11: Hamilton Avenue & I-110 NB Ramps
	Intersection No. 25: Avalon Boulevard & Carson Street
31 to 40 Percent	Intersection No. 22: Vermont Avenue & Carson Street
41 to 50 Percent	No change
51 to 60 Percent	Intersection No. 5: Vermont Avenue & Del Amo Boulevard
	Intersection No. 8: Main Street & Del Amo Boulevard
61 to 70 Percent	Intersection No. 24: Main Street & Carson Street
71 to 80 Percent	Intersection No. 15: Figueroa Street & Torrance Boulevard
	Intersection No. 23: Figueroa Street & Carson Street
81 to 90 Percent	Intersection No. 16: Main Street & Torrance Boulevard
91 to 100 Percent	No change

[a] *Mitigation measures are phased in relation to 10 percent increases in Project trips.*

Source: Kaku Associates, October 2005

Mitigation Measure C-4: Hamilton Avenue & Del Amo Boulevard (Intersection No. 6):

- The Applicant shall install a traffic signal at this location.
- A right-turn lane shall be added to northbound Hamilton Avenue. The northbound approach shall be improved to include a left-turn lane, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-5: Figueroa Street & Del Amo Boulevard (Intersection No. 7):

- A right-turn lane shall be added to southbound Figueroa Street. The southbound approach shall be improved to include one left-turn lane, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way

- A second westbound left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to include two left-turn lanes, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.

- An eastbound through lane and a right-turn lane shall be added to eastbound Del Amo Boulevard. The eastbound approach shall be improved to include one left-turn lane, three through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.

- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-6: Main Street and Del Amo Boulevard (Intersection No. 8):

- Land shall be dedicated, as required, to add a second left-turn lane and a right-turn lane to southbound Main Street. The southbound approach shall be improved to provide two left-turn lanes, two through lanes and a right-turn lane.

- A second left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to provide two left-turn lanes, two through lanes and an optional through and a right-turn lane.

- Land shall be dedicated, as required, to add a second left-turn lane and a right-turn lane to northbound Main Street. The northbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.

- A second left-turn lane shall be added to eastbound Del Amo Boulevard. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and an optional through and a right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 51 to 60 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-7: Hamilton Avenue & I-110 Southbound Ramps (Intersection No. 11):

- The Applicant shall install a traffic signal at this location.
- The southbound approach shall be re-striped to provide for one left-turn lane and a shared left-turn/through lane. The improvement is feasible within the existing right-of way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 21 to 30 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-8: Figueroa Street & I-110 Northbound Ramps (Intersection No. 12):

- A second right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to provide two through lanes and two right-turn lanes.
- A right-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes and a right-turn lane. The improvements are feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-9: Figueroa Street & Torrance Boulevard (Intersection No. 15):

- A second southbound left-turn lane shall be added to southbound Figueroa Street. The southbound approach shall be improved to include two left-turn lanes, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 71 to 80 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-10: Main Street & Torrance Boulevard (Intersection No. 16):

- The eastbound approach shall be re-striped to provide one left-turn lane and a shared through/right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 81 to 90 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-11: Vermont Avenue & Carson Street (Intersection No. 22):

- The westbound right-turn lane shall be re-striped to provide a shared through/right-turn lane. The westbound approach shall be improved to provide one left-turn lane, two through lanes, and a shared through/right-turn lane.

- The eastbound right-turn lane shall be re-striped to provide a shared through/right-turn lane. The eastbound approach shall be improved to provide one left-turn lane, two through lanes, and a shared through/ right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 31 to 40 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-12: Figueroa Street and Carson Street (Intersection No. 23):

- A right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 71 to 80 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-13: Main Street & Carson Street (Intersection No. 24):

- A second left-turn lane shall be added to the westbound approach. The westbound approach shall be improved to provide two left-turn lanes, two through lanes, and a shared through/right-turn lane

- A second left-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and a shared through/right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 61 to 70 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-14: Avalon Boulevard & Carson Street (Intersection No. 25):[4]

- A right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to include one left-turn lane, three through lanes, and a right-turn lane.

- A right-turn lane shall be added to the westbound approach. The westbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.

- A right-turn lane shall be added to the northbound approach. The northbound approach shall be improved to provide one left-turn lane, three through lanes, and a right-turn lane

- A right-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane

- This mitigation measure shall be implemented at the point of development in which the Project generates 21 to 30 percent of its total trips, in accordance with Draft EIR Table 24.

Mitigation Measure C-15: No Certificate of Occupancy shall be issued for commercial development in District 2, or for commercial development in Districts 1 and 3 that is greater than the amount of commercial development shown in the Applicant's Conceptual Plan (i.e., 150,000 square feet and 50,000 square feet, respectively), prior to the completion of the I-405 ramp improvements at Avalon Boulevard.

[4] *Any future street widening improvements for the intersection of Avalon Boulevard and Carson Street are not feasible within the existing right-of-way and would require acquisition or dedication of right-of-way from adjacent parcels. The adjacent land uses include the Carson City Hall on the northeast corner of the intersection and commercial uses on the remaining three corners of the intersection. The necessary width can be obtained adjacent to City Hall on the north side of Carson Street through reduction of a portion of the existing landscaped area, allowing construction of the right-turn lane on the westbound Carson Street approach. Information from the City of Carson indicates that the parcels on the southeast and northwest corners may redevelop, at which point it may be possible to obtain the necessary right-of-way on the east side of Avalon Boulevard south of Carson Street and on the west side of Avalon Boulevard north of Carson Street, allowing construction of the right-turn lanes on the northbound and southbound Avalon Boulevard approaches. If the proposed right-turn lanes were provided on these three approaches but not on the eastbound Carson Street approach, it is estimated that the projected afternoon peak hour V/C would be reduced from 0.973 to 0.904. Although this would partially alleviate the Project impact, it would not fully mitigate the impact to a less than significant level.*

(b) I-405 and I-110 Freeways

No feasible mitigation measures are available to the Applicant to mitigate the Project's significant impacts on the I-110 and I-405 freeways.

(c) Site Access Mitigation Measures:

Site access impacts were determined to be insignificant as long as the main site access intersections are configured as described in Draft EIR Section IV.C.3.c(1), Project Design Features. No mitigation measures are required.

(d) Public Transportation

Mitigation Measure C-16: In coordination with the City of Carson Transit Authority and the Metropolitan Transit Authority (Metro), the Applicant shall provide additional transit stops, including benches and shelters, in and adjacent to the Project site.

c. Cumulative Impacts

(1) Construction Impacts

The majority of the related projects' construction workers are anticipated to arrive and depart the individual construction sites during off-peak hours. Excavation and grading phases for the related projects would generate the highest number of haul truck trips. The City's established review process would balance haul routes to minimize the impacts of cumulative hauling on any particular roadway. Although related projects may cause lane closures or detours, no related projects are sufficiently close to the Project site to create a cumulative access impact on the street segments near the Project site. Therefore, construction activities would have a less than significant cumulative effect relative to worker and haul truck traffic as well as emergency access.

(2) Operation Impacts

(a) Intersection Service Levels

The cumulative traffic impacts of the related projects and ambient growth have been considered for the purpose of assessing the Project's traffic impacts. Under 2010 Cumulative Base conditions, six of the 29 study intersections are projected to operate at LOS E or worse during one or both of the A.M. and P.M. peak hours. Since no guarantee exists that mitigation measures would be implemented with the identified related projects, it is conservatively concluded that cumulative traffic impact on intersection operations would be significant.

(b) Freeway Service Levels

Cumulative impacts would occur on CMP segments of the Harbor and San Diego Freeways. No feasible mitigation measures are available to the any individual project to mitigate the potentially significant impacts on these freeway segments to less than significant levels. Therefore, cumulative impacts on freeway service levels would be significant.

(c) Access

No related projects are adjacent to the Project site or share adjacent access points. Therefore, no significant cumulative impacts relative to access would occur.

(d) Public Transit

The combined Project and related projects would generate a demand for public transportation that would exceed existing transit capacity. Therefore, a significant cumulative impact relative to public transit services would occur.

d. Level of Significance After Mitigation

(1) Construction

With the implementation of mitigation measures, no significant, unavoidable construction impacts would occur.

(2) Operation

(a) Intersection Service Levels

Potentially significant impacts would be reduced at all 12 intersections to less than significant levels, with the exception of the intersection of Figueroa Street & I-110 Northbound Ramps (Intersection No. 12) during the P.M. peak hour. Therefore, the Project would generate a significant and unavoidable impact at this one intersection.

(b) Freeway Service Levels

The Project's significant impact on three segments of the Harbor Freeway (I-110) and four segments of the San Diego Freeway (I-405) cannot be reduced to less than significant levels as no feasible mitigation measures are available to the Applicant. Therefore, the Project's impact on freeway service levels would be significant and unavoidable.

(3) Access

Site access impacts were determined to be less than significant as long as the main site access intersections are configured as described in Draft EIR Section IV.C.3.c(1), Project Design Features. Therefore, no significant and unavoidable impacts relative to site access would occur.

(4) Public Transportation

Mitigation Measure C-16 would partially reduce the impact on transit services; however, no feasible mitigation exists that would reduce the potentially significant impact to a less than significant level. Therefore, the impact of the Project on regional transit would be significant and unavoidable.

(5) Parking

Procedures set forth in the Specific Plan provide that shared parking would never be less than the Project's peak demand. With the implementation of all applicable Specific Plan provisions, the Project's peak parking demand would not exceed provided parking. Therefore, no significant and unavoidable parking impacts would occur.

9.4 Hazards and Hazardous Materials

a. Environmental Impacts

The remediation of the 157-acre landfill is being implemented as part of the Project in compliance with the approved Final Remedial Action Plans (RAPs). The RAP for the Upper Operable Unit (OU) was approved by DTSC in 1995 and the RAP for the Lower OU was approved by DTSC in 2005. DTSC conducted its own environmental review as part of the approval process for the RAPs. These analyses concluded that implementation of the RAPs would result in less than significant impacts with regard to all environmental issues of concern. Therefore, the implementation of the RAPs does not require further review under CEQA and, as such, is not subject to analysis in this EIR.

With regard to the implementation of the Upper OU RAP, the Applicant proposes some refinements to the cap and the gas control and groundwater treatment methods. DTSC has conceptually approved the refinements. Changes in the design of the remediation system would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment. In addition, DTSC provided a letter dated February 9, 2005 indicating the "DTSC believes the concepts presented for the proposed development are appropriate at a conceptual level and could be protective of human health and safety, however, as is common for all projects under DTSC's authority, more detailed plans are necessary before DTSC can make

such a final determination." As a result, no residential development would occur until DTSC formally concludes that the development would be implemented in a manner that is protective of human health and the environment.

With regard to existing oil and water wells located in Districts 1 and 2, the approved RAP for the Upper OU required additional investigation to locate the three wells and to address issues such as the risk of downward migration of contaminants into the lower aquifers. As a result, DTSC would review and approve additional work in compliance with the RAP relative to the wells.

Based on the Phase I and preliminary Phase II conducted for Development District 3, no specific remediation efforts are required. However, additional Phase II activities are recommended to further evaluate potential vapor intrusion and worker health and safety concerns by completing deeper soil-vapor sampling. In addition, Development Site 3 would be subject to the provisions of California Code of Regulations, Title 27, Section 21190 that govern development activities within 1,000 feet of a closed landfill. These provisions include such measures as the installation of vapor mitigation and monitoring devices. As the construction and operation of the proposed land uses within Development Site 3 would be in compliance with all applicable regulations, potential risks would be reduced to a less than significant level.

b. Mitigation Measures

The certified CEQA documentation for the Upper OU RAP includes mitigation measures to reduce the potential construction impacts associated with the implementation of the clay cap.[5] The mitigation measures are in the environmental areas of earth, air quality, surface and groundwater, natural resources (use of nonrenewable resources), risk of upset, and energy. Mitigation measures are also discussed in Section 7.4 of the Final RAP for the Upper OU. In addition to these measures, the following mitigation measures are required to ensure that any revisions to the RAP are approved by DTSC and that access to the necessary areas for monitoring programs required in the RAPs would be provided.

Mitigation Measure D-1: To the extent the Applicant desires to refine or modify requirements in the RAP, the Applicant shall provide documentation to the City indicating DTSC approval of such refinements or modifications.

Mitigation Measure D-2: The Applicant shall provide documentation to the City indicating DTSC shall permit the proposed residential uses in Development

[5] *The Negative Declaration was prepared for the construction, operation and maintenance of the proposed landfill gas collection and treatment system and the groundwater treatment system.*

District 1 prior to issuance of any permits for such residential development in Development District 1.

Mitigation Measure D-3: The Applicant shall provide documentation to the City indicating both on- and off-site risks associated with RAP construction have been evaluated to the satisfaction of the DTSC, and at a minimum, perimeter air monitoring shall be completed for dust, particulates, and constituents determined to be Constituents of Concern (COCs).

Mitigation Measure D-4: The Applicant shall provide to the City, documentation indicating that (1) a post remediation risk assessment has been prepared by the Applicant and approved by DTSC; and (2) DTSC has certified that the remedial systems are properly functioning prior to issuance of a Certificate of Occupancy.

Mitigation Measure D-5: The Applicant shall provide documentation to the City indicating that applicable remedial systems and monitoring plans, including the location of the flare and treatment facility are in accordance with applicable SCAQMD regulations.

c. Cumulative Impacts

The analysis contained in this section focuses on the implementation of the approved RAPs for the Upper OU and the Lower OU. The purpose of the RAPs is to provide protection for human health and the environment. Development within District 3 would occur in compliance with applicable regulations regarding hazardous materials. All new development would occur in compliance with applicable regulations relative to hazardous materials. Therefore, the Project would not result in a significant impact with regard to hazards. All of the related projects would be required to comply with applicable regulations with regard to hazardous materials. Therefore, no significant cumulative hazards or hazardous materials impacts are anticipated.

d. Level of Significance After Mitigation

While the Project would not result in a significant impact with regard to hazards and hazardous materials, mitigation measures are provided to ensure that any revisions to the RAP are approved by DTSC.

9.5 Geology and Soils

a. Environmental Impacts

Site preparation for Development Districts 1 and 2 would require mass grading, deep dynamic compaction (DDC), backfill, capping and pile driving. Approximately 125 acres would be cleared and used for stockpiling during excavation and on-site storage of approximately 1.5 million cubic yards of soil. DDC would be completed on approximately 60 to 75 acres occupied by parking lots and non-pile supported areas. Grading would result in a nearly level site, taking into account the need to allow for drainage. Site preparation would be coordinated with remediation procedures approved by the DTSC. Although Development Districts 1 and 2 are potentially exposed to differential settlement due to the densification of the underlying refuse layers, exposure to settlement would be reduced to less than significant levels through the installation of driven pile foundations. Development in District 3 would require the grading of 11 acres, the removal of unsuitable materials, and the excavation and re-compaction of the existing 1 to 8 feet of disturbed and undocumented topsoil. All graded soils would be approximately "balanced" onsite. With the enforcement of City Building Code requirements, the exposure of people or other structures to settlement or other geologic hazards caused by construction or occupation of the Project site would be less than significant.

b. Mitigation Measures

The proposed Project would not result in a significant geology and soils impact. However, the following mitigation measures are recommended to assure compliance with City and State regulations.

Mitigation Measure E-1: In accordance with City of Carson Municipal Code, the Applicant shall comply with site-specific recommendations set forth in engineering geology and geotechnical reports prepared to the satisfaction of the City of Carson Building Official, as follows:

- The engineering geology report shall be prepared and signed by a California Certified Engineering Geologist and the geotechnical report shall be prepared and signed by a California Registered Civil Engineer experienced in the area of geotechnical engineering. Geology and geotechnical reports shall include site-specific studies and analyses for all potential geologic and/or geotechnical hazards. Geotechnical reports shall address the design of pilings, foundations, walls below grade, retaining walls, shoring, subgrade preparation for floor slab support, paving, earthwork methodologies, and dewatering, where applicable.

- Geology and geotechnical reports may be prepared separately or together.

- Where the studies indicate, compensating siting and design features shall be required.

- Laboratory testing of soils shall demonstrate the suitability of underlying native soils to support driven piles to the satisfaction of the City of Carson Building Official.

Mitigation Measure E-2: Due to the classification of portions of the Project site as a liquefaction zone, the Applicant shall demonstrate that liquefaction either poses a sufficiently low hazard to satisfy the defined acceptable risk criteria, in accordance with CDMG Special Bulletin 117, or (b) implement suitable mitigation measures to effectively reduce the hazard to acceptable levels (CCR Title 14, Section 3721). The analysis of liquefaction risk shall be prepared by a registered civil engineer and shall be submitted to the satisfaction of the City Building Official.

Mitigation Measure E-3: Any roads realigned from the existing configuration, or otherwise, located in areas underlain by waste soils shall comply with site-specific recommendations as set forth in engineering, geology, and geotechnical reports prepared to the satisfaction of City of Carson building officials.

c. Cumulative Impacts

Due to the high seismic activity common to the Southern California region, the potential for ground shaking and other geological hazards would be similar throughout the area that includes the identified related projects. Building permits for the related projects would involve a site-specific evaluation of slope stability, ground rupture, liquefaction, and ground movement for each of the related projects. With the implementation of City Code regulations, cumulative impacts related to geologic risk would be less than significant.

d. Level of Significance After Mitigation

The proposed Project would be in compliance with City and State regulations and is not anticipated to expose people or structures to any unstable geologic conditions or seismically related geologic hazards that would result in substantial damage to structures or infrastructure or exposure of people to risk of loss, injury, or death. Therefore, no unavoidable significant impacts would occur.

9.6 Surface Water Quality

a. Environmental Impacts

Construction would expose soils to precipitation and to water used in dust control and compaction and, as such, would potentially increase mobilization of soils into surface water runoff. A prior analysis of soils in Development District 3 found soil gas contamination in a portion of the site. Although recent testing has concluded that no soil gas is currently present, mitigation is recommended to assure compliance with applicable water quality standards. Prior testing of storm water runoff in Development Districts 1 and 2 indicated that suspended particulates exceeded State of California reporting limits. Runoff is currently controlled by a SWPPP applicable to the former landfill site. Recent testing of retained storm water in Development Districts 1 and 2, detected organic compounds and conductivity in excess of reporting limits. Discharge was conducted in accordance with a Regional Water Quality Control Board (RWQCB) Release of Stormwater Permit. During Project construction, the implementation of a NPDES Construction General Permit, including the preparation of a SWPPP to monitor and control water runoff, would prevent suspended particulates from entering the off-site drainage system or adjacent properties. With development, Districts 1 and 2 would be almost entirely impermeable and Development District 3 would have a combination of permeable and impermeable areas. No uncontrolled sheet flow from any Project location would be directed or allowed to flow onto adjacent properties or directly into the Torrance Lateral Channel. Although new impermeable surfaces would increase water runoff from the site, the impermeability that would result due to the waste cap would eliminate the exposure of surface water runoff to any contaminated soils. With the implementation of a site-specific SUSMP during operation, contaminants in surface water, such as parking lot oil and grease, would comply with state and federal water quality standards. With the implementation of the proposed mitigation measure, the Project would have a less than significant surface water quality impact.

b. Mitigation Measures

Impacts associated with surface water runoff and water quality in Development Districts 1 and 2 would be less than significant and no mitigation measures are required. However, since potential, unremediated soil contamination exists in Development District 3, the following mitigation measure is recommended:

Mitigation Measure F-1: Soils in Development District 3 shall be tested prior to the issuance of a grading permit, in accordance with the recommendation of Blasland, Bouck and Lee, Inc.'s (BBL's) Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005). If contaminants are found in excess of State of California maximum contamination levels (MCLs), the soils shall be addressed in accordance with a DTSC-approved program.

c. Cumulative Impacts

Related projects could potentially contribute point and non-point source pollutants to surface waters, resulting in a cumulative water quality impact. However, all new development and redevelopment projects over more than one acre, or meeting the City's SUSMP land use criteria, must comply with NPDES requirements during construction and operation, including the implementation of site-specific SWPPPs and SUSMPs. With the incorporation of these measures, it is anticipated that the related projects would not exceed acceptable regulatory levels. Minor projects would not substantially degrade surface water quality. Therefore, cumulative impacts to surface water quality are concluded to be less than significant based on compliance with existing regulations.

d. Level of Significance After Mitigation

Through the implementation of proposed drainage and erosion control plans required under a SWPPP's Best Management Practices, including water filtering and flood control devices, development of the proposed Project would not increase existing pollution and contamination, create a nuisance as defined in Section 13050 of the California Water Code, cause regulatory standards to be violated, or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of flow. Therefore, impacts associated with surface water quality would be less than significant.

9.7 Air Quality

a. Environmental Impacts

The air quality analysis evaluates air emissions attributable to the Project's construction and post-construction (e.g., operational) activities for criteria air pollutants, air toxics, and odors. In addition, the Project's compatibility with applicable air quality policies as set forth in the City of Carson General Plan and regional plans prepared by SCAG and the SCAQMD are also assessed.

Construction of the proposed Project would generate fugitive dust and combustion emissions from the use of heavy-duty construction equipment on-site and from construction worker trips as well as from delivery and haul truck travel to and from the Project site. Construction related daily regional emissions from both direct and indirect sources exceed the significance thresholds for CO, NO_X, and ROC. Thus, emissions of these pollutants would result in a significant regional air quality impact during the Project's construction phase. An analysis of local air quality impacts from construction operations and their impact on nearby sensitive receptors (e.g., residences, schools, etc.) has also been conducted. This analysis indicates that the Proposed Project would not result in an exceedance of the SCAQMD recommended localized thresholds for NO_2 or CO. However, localized PM_{10} concentrations would exceed the SCAQMD

recommended localized threshold at the residential uses immediately south and southwest of the Project site. Construction of the proposed Project would result in a maximum off-site individual cancer risk of 1.1 in a million from diesel particulate emissions. As the Project would not exceed the maximum individual cancer risk of ten in one million, air toxic emissions during construction would be less than significant. No construction activities are proposed which would create objectionable odors and, therefore, no significant odor impacts would occur.

Air pollutant emissions associated with occupancy and operation of the proposed Project would be generated by the consumption of electricity and natural gas, by the operation of on-road vehicles and by miscellaneous area sources (among other things, landscaping equipment, consumer/commercial solvent usage, architectural coatings, restaurant charbroilers, and emergency generators). The Project would exceed SCAQMD regional significance thresholds for CO, NO_X, PM_{10}, and ROC. Project traffic would not cause an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively and no significant impacts to local CO concentrations would occur. Potential sources of air toxic emissions associated with the Project would be limited to sources typical within the urban environment and would contribute small amounts of toxic air pollutants to the Project vicinity, and as a result, would be well below any levels that would result in a significant impact on human health. Development of the proposed Project would be compatible with the air quality policies set forth in the SCAQMD's AQMP, SCAG's RCPG and the Carson General Plan.

In addition to the above analyses, a health risk assessment (HRA) was conducted for the proposed new sensitive receptors for potential sources of toxic emissions within one-quarter mile of the Project site. Based on the analysis, the Project would result in locating sensitive receptors within an area of cancer risk in excess of the SCAQMD significance threshold of 10 in one million and, therefore, the Project would result in a significant impact. This impact is almost exclusively related to diesel exhaust emissions from I-405 Freeway. In addition, an existing composting operation is located near the proposed residential uses northwest of the intersection of Del Amo Boulevard and Main Street. As a result, this source may result in significant odor impacts that could affect proposed residential uses.

b. Mitigation Measures

The following mitigation measures are (1) intended to implement requirements of SCAQMD Rule 403 (Fugitive Dust) and (2) set forth a program of air pollution control strategies designed to reduce the proposed Project's air quality impacts to the extent feasible.

(1) Construction

Mitigation Measure G-1: General contractors shall implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403.[6]

Mitigation Measure G-2: All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

Mitigation Measure G-3: General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would turn their engines off, when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

Mitigation Measure G-4: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.

Mitigation Measure G-5: All construction vehicles shall be prohibited from idling in excess of ten minutes, both on- and off-site.

Mitigation Measure G-6: Project heavy-duty construction equipment shall use alternative clean fuels, such as low sulfur diesel or compressed natural gas with oxidation catalysts or particulate traps, to the extent feasible.

Mitigation Measure G-7: The Applicant shall utilize coatings and solvents that are consistent with applicable SCAQMD rules and regulations**.**

Mitigation Measure G-8: The Applicant shall comply with SCAQMD Rule 402 to reduce potential nuisance impacts due to odors from construction activities.

Mitigation Measure G-9: All construction vehicle tires shall be washed at the time these vehicles exit the project site.

Mitigation Measure G-10: All fill material carried by haul trucks shall be covered by a tarp or other means.

Mitigation Measure G-11: Any intensive dust generating activity such as grinding concrete for existing roads must be controlled to the greatest extent feasible.

[6] *SCAQMD Rule 403 requirements are detailed in Appendix F.*

Mitigation Measure G-12: The Applicant shall provide documentation to the City indicating both on- and off-site air-borne risks associated with RAP construction have been evaluated to the satisfaction of the DTSC, and at a minimum, perimeter air monitoring will be completed for dust, particulates, and constituents determined to be Constituents of Concern (COCs).

(2) Operation

During the Project's operational phase, regional emissions that exceed regional SCAQMD significance thresholds for CO, PM_{10}, NO_X, and ROC would occur. Emission control measures are specified for the following four sources of operational emissions: (1) service and support facilities; (2) natural gas consumption and electricity production; (3) building materials, architectural coatings, and cleaning solvents; and (4) transportation systems management and demand management.

(a) Service and Support Facilities (point sources)

Mitigation Measure G-13: All point source facilities shall obtain all required permits from the SCAQMD. The issuance of these permits by the SCAQMD shall require the operators of these facilities to implement Best Available Control Technology and other required measures that reduce emissions of criteria air pollutants.

Mitigation Measure G-14: Land uses on the Project site shall be limited to those that do not emit high levels of potentially toxic contaminants or odors.

(b) Natural Gas Consumption and Electricity Production

Mitigation Measure G-15: All residential and non-residential buildings shall meet the California Title 24 Energy Efficiency standards for water heating, space heating and cooling, to the extent feasible.

Mitigation Measure G-16: All fixtures used for lighting of exterior common areas shall be regulated by automatic devices to turn off lights when they are not needed, but a minimum level of lighting should be provided for safety.

(c) Building Materials, Architectural Coatings and Cleaning Solvents

Mitigation Measure G-17: Building materials, architectural coatings and cleaning solvents shall comply with all applicable SCAQMD rules and regulations.

(d) Transportation System Management and Demand Management

Mitigation Measure G-18: The Applicant shall, to the extent feasible, schedule deliveries during off-peak traffic periods to encourage the reduction of trips during the most congested periods.

Mitigation Measure G-19: The Applicant shall coordinate with the MTA and the City of Carson and Los Angeles Department of Transportation to provide information with regard to local bus and rail services.

Mitigation Measure G-20: During site plan review, consideration shall be given regarding the provision of safe and convenient access to bus stops and public transportation facilities.

Mitigation Measure G-21: The Applicant shall pay a fair share contribution for a low emission shuttle service between the project site and other major activity centers within the project vicinity (i.e., the MetroRail Blue Line station at Del Amo Boulevard and Santa Fe and the Carson Transfer Station at the South Bay Pavilion).

Mitigation Measure G-22: The Applicant shall provide bicycle racks located at convenient locations throughout Carson Marketplace.

Mitigation Measure G-23: The Applicant shall provide bicycle paths along the main routes through Carson Marketplace.

Mitigation Measure G-24: The Applicant shall provide convenient pedestrian access throughout Carson Marketplace.

As on-site sensitive receptors could be exposed to off-site air toxic emissions in excess of the SCAQMD significance threshold and also potential odiferous emissions (nearby composting operation), the following mitigation measure is recommended.

Mitigation Measure G-25: The Project shall include air filtration systems for residential dwelling units designed to have a minimum efficiency reporting value (MERV) of 12 as indicated by the American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. The air handling systems shall be maintained on a regular basis per manufacturer's recommendations by a qualified technician employed or contracted by the Applicant or successor. Operation and maintenance of the system shall ensure that it performs above the minimum reporting value.

c. Cumulative Impacts

Buildout of the identified related projects that would occur within a similar time frame as the Proposed Project would increase short-term emissions for concurrent activities during any day of the Project's construction period. Since emissions of criteria pollutants under peak construction activities are concluded to be significant, any additional construction activities as part of any related project occurring during this time and in the vicinity of the Proposed Project site would be adding additional air pollutant emissions to these significant levels. As emission levels associated with the Proposed Project already are forecasted to have a significant impact, a significant and unavoidable cumulative impact with respect to construction emissions would occur.

The SCAQMD has set forth both a methodological framework as well as significance thresholds for the assessment of a project's cumulative air quality impacts. Based on the SCAQMD's methodology (presented in Chapter 9 of the CEQA Air Quality Handbook), the proposed Project would have a significant cumulative impact on air quality. In addition, implementation of the Project would also result in an increase in emissions which would contribute to region-wide emissions on a cumulative basis and as such, the Project's cumulative air quality impacts are also concluded to be significant. In such cases, the SCAQMD recommends that all projects, to the extent possible, employ feasible mitigation measures which has been done with regard to the proposed Project.

d. Level of Significance After Mitigation

(1) Construction

Regional construction activities would still exceed the SCAQMD daily emission thresholds for regional NO_X, CO and ROC after implementation of all feasible mitigation measures and, as such, the Project would have a significant and unavoidable impact on regional air quality. With regard to localized emissions, construction activities would still exceed the SCAQMD daily emission threshold for PM_{10} after implementation of all feasible mitigation measures. Therefore, construction of the Project would have a significant and unavoidable impact with regard to localized emissions of PM_{10}.

(2) Operation

Regional operational emissions, after the implementation of all feasible mitigation measures, would still exceed the SCAQMD daily emission thresholds and, as such, operation of the Project would have a significant and unavoidable impact on regional air quality. With respect to potential impacts to on-site residential uses, the recommended air handling systems would substantially reduce carcinogenic exposure, but impacts would remain significant and unavoidable. Via compliance with industry standard odor control practices, SCAQMD Rule 402

(Nuisance), and SCAQMD Best Available Control Technology Guidelines, potential impacts that could result from any potential odor source would be less than significant.

9.8 Noise

a. Environmental Impacts

(1) Construction Impacts

As with most construction projects, construction would require the use of a number of pieces of heavy equipment such as impact soil compactors (for DDC operations), pile drivers, bulldozers, backhoes, cranes, loaders, and concrete mixers. Construction equipment would produce maximum noise levels of 74 dBA to 101 dBA at a reference distance of 50 feet from the noise source. The residences located to the west and south of the Project site immediately across the Torrance Lateral Channel, would occasionally experience construction noise levels of 76.5 dBA and 75.2 dBA (hourly L_{eq}), respectively, during the heaviest periods of construction. Thus, construction of the proposed Project would result in a significant impact to off-site sensitive receptors without the incorporation of mitigation measures.

Construction can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. Within the Project site, the highest vibration from typical construction equipment (i.e., exclusive of DDC activities) would be generated during pile driving operations. Residential sensitive land uses would be located at a sufficient distance (greater than 75 feet) from any potential pile driving activity so that vibration from such activities would be below the peak particle velocity threshold of 0.2 inch/sec. Construction of the proposed Project also includes DDC within those portions of the property that were formerly used as a landfill site (i.e., Districts 1 and 2) that would not be supported by pile foundations. The Applicant is proposing to implement a DDC pilot program, before the start of site-wide DDC operations, for the purpose of assuring that less than significant vibration impacts to off-site uses and/or facilities would occur once DDC operations are initiated on a site-wide basis. The testing procedures established under the Pilot Program would consist of dropping increasing weights at increasing heights with concurrent checking of monitored levels so as to assure that off-site vibration levels do not exceed the 0.2 inches per second PPV significance threshold. Based on this testing program, an optimal set of DDC parameters would be established. Once the pilot program is completed, the off-site vibration monitors would remain in place throughout the DDC process, thereby providing ongoing protections for off-site uses and/or facilities throughout this phase of the Project's construction process. Thus, impacts from this particular construction activity would be less than significant.

(2) Operational Noise

The Project's operational noise analysis addresses potential noise impacts to neighboring noise-sensitive receiver locations, as well as the proposed on-site residential uses within the Project site, related to the long-term operations of the proposed Project. Specific noise sources addressed in the analysis included roadway noise, mechanical equipment/point sources (i.e., loading dock and trash pick-up areas), and parking facilities.

The largest Project-related traffic noise impact is anticipated to occur along the segments of Del Amo Boulevard, between Stamps Drive and Figueroa Street (2.8 to 3.1 dBA increase in CNEL). However, no sensitive uses are located along these segments and impacts would be less than the 5 dBA significance threshold. Furthermore, impacts from Project-related traffic noise along all other local roadway segments, within proximity of the identified sensitive receptors, would be lower than the significance threshold of 3 dBA CNEL for sensitive receptors exposed to or within the "normally unacceptable" or "clearly unacceptable" categories. Thus, the Project's roadway noise impacts would be less than significant.

The proposed on-site residential uses would be located to the south and north of Del Amo Boulevard, within Development Districts 1 and 3, respectively. Due to the proximity of the Project site to the I-405 Freeway, measured noise levels within the Project site reach levels of up to approximately 74 dBA CNEL. As such, I-405 Freeway traffic volumes would result in a significant noise impact to the proposed on-site residential uses without the incorporation of mitigation measures.

Noise levels associated with on-site sources (e.g., loading docks, parking facilities, and mechanical equipment) would include noise control measures to meet City of Carson Municipal Code noise standards. Therefore, impacts are anticipated to be less than significant and no mitigation measures are required. Some of the land uses that are permitted by the Carson Marketplace Specific Plan have noise characteristics that are potentially problematic (i.e., outdoor theater, passenger station (bus station, rail station, taxi stand), or small recycling facility). If these land uses are developed as part of the proposed Project, while they would be required to meet the City's Noise Ordinance standards, there is a potential that they may result in a significant noise impact if the uses were to be located in proximity of the proposed on-site residences or off-site residences to the south and west.

As Project operations would not result in any additional long-term ground-borne vibration sources, operation of the proposed Project would result in less than significant vibration impacts and no mitigation measures are required.

b. Mitigation Measures

(1) Construction

Mitigation Measure H-1: Prior to the issuance of any grading, excavation, haul route, foundation, or building permits, the Applicant shall provide proof satisfactory to the Building and Safety Division of the Development Services Department that all construction documents require contractors to comply with City of Carson Municipal Code Sections 4101 (i) and (j), which requires all construction and demolition activities including pile driving, to occur between 7:00 A.M. and 8:00 P.M. Monday through Saturday and that a noise management plan for compliance and verification has been prepared by a monitor retained by the Applicant. At a minimum, the plan shall include the following requirements:

1. Noise-generating equipment operated at the Project site shall be equipped with effective noise control devices (i.e., mufflers, intake silencers, lagging, and/or engine enclosures). All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

2. Pile drivers used within 1,500 feet of sensitive receptors shall be equipped with noise control techniques (e.g., use of noise attenuation shields or shrouds) having a minimum quieting factor of 10 dBA.

3. Effective temporary sound barriers shall be used and relocated, as needed, whenever construction activities occur within 150 feet of residential property, to block line-of-site between the construction equipment and the noise-sensitive receptors (i.e., residential uses located on the west and south of the Project site).

4. Loading and staging areas must be located on site and away from the most noise-sensitive uses surrounding the site as determined by the of Building and Safety Division of the Development Services Department.

5. An approved haul route authorization that avoids noise-sensitive land uses to the maximum extent feasible.

6. A construction relations officer shall be designated to serve as a liaison with residents, and a contact telephone number shall be provided to residents.

Mitigation Measure H-2: The Applicant, prior to initiating DDC activities on a site-wide basis, shall conduct a DDC Pilot Program (Pilot Program). The Pilot Program shall be implemented via the following guidelines:

- Prior to the initiation of the Pilot Program, the Applicant shall locate vibration monitors at the following locations: (1) along the Project's fenceline opposite the off-site residential uses located to the south and southwest of the Project site (i.e., within the Project site), and (2) along the far side of the Torrance Lateral Channel in line with the monitors placed within the Project site itself.

- Continuous monitoring shall be conducted on an ongoing basis during the Pilot Program. All vibration levels measured by the monitors shall be logged with documentation of the measurements provided to the City.

- Initial DDC drops shall be limited in weight, height and/or location dictated by calculations which demonstrate that the potential vibration levels are below the 0.02 inches per second PPV threshold limit.

- Increases in DDC weight, height and/or location shall incur in small increments, with continuous monitoring to assure compliance with the 0.02 inches per second PPV threshold limit.

- If vibration levels at any time during the Pilot Program exceed the 0.02 inches per second PPV threshold level, DDC activity shall immediately stop, until new drop parameters are established that would reduce the vibration levels to less than the 0.02 inches per second PPV threshold level.

Mitigation Measure H-3: The monitors located on the far side of the Torrance Lateral Channel as part of the Pilot Program shall remain in place throughout the DDC phase of Project construction. Continuous monitoring shall be conducted on an ongoing basis. All vibration levels measured by the monitors shall be logged with documentation of the measurements provided to the City. If DDC vibration levels at any time exceed the 0.02 inches per second PPV threshold level, DDC activity shall immediately stop, until new drop parameters are established that would reduce the vibration levels to less than the 0.02 inches per second PPV threshold level.

Mitigation Measure H-4: A construction and construction-related monitor satisfactory to the Department of Development Services General Manager shall be retained by the Applicant to document compliance with the mitigation measures. Said Monitor's qualifications, identification, address and telephone number shall be listed in the contracts and shall be placed in the pertinent files

of the Department of Development Services Department. The Monitor will be required to monitor all construction and construction-related activities on the site on a periodic basis; keep all written records which shall be open for public inspection; and to file monthly reports with City and appropriate permit granting authorities. In addition:

1. Information shall be provided on a regular basis regarding construction activities and their duration. A Construction Relations Officer shall be established and funded by the Applicant, and approved by the Department of Development Services General Manager, to act as a liaison with neighbors and residents concerning on-site construction activity. As part of this mitigation measure, the Applicant shall establish a 24-hour telephone construction hotline which will be staffed between the hours of 8:00 A.M. and 5:00 P.M. on a daily basis throughout the Project's entire construction period for the purposes of answering questions and resolving disputes with adjacent property owners. The hotline number shall be posted on site.

2. The Applicant shall require in all construction and construction-related contracts and subcontracts, provisions requiring compliance with special environmental conditions included in all relevant entitlement approval actions of the City of Carson. Such provisions shall also include retention of the power to effect prompt corrective action by the applicant, its representative or prime contractor, subcontractor or operator to correct noticed noncompliance.

3. During construction loading and staging areas must be located on-site and away from the most noise-sensitive uses surrounding the site as determined by the Planning Manager.

(b) Operation

Mitigation Measure H-5: All parking lots near residential areas shall be located a minimum of 150 feet from an off-site residential use unless a minimum eight foot wall is provided along the property boundary to limit noise levels associated with parking lot activities.

Mitigation Measure H-6: All parking structures near residential areas shall be located a minimum of 150 feet from an off-site residential use unless the exterior wall of the parking structure that faces the off-site residential use is a solid wall or provides acoustical louvers (or equivalent noise reduction measures).

Mitigation Measure H-7: During operation of a building (following construction), truck delivery should be limited to non-peak traffic periods between 7:00 A.M. and 8:00 P.M., if feasible.

Mitigation Measure H-8: For the residential uses immediately south and north of Del Amo Boulevard, within Development Districts 1 and 3, all exterior walls and floor-ceiling assemblies (unless within a unit) shall be constructed with double-paned glass or an equivalent and in a manner to provide an airborne sound insulation system achieving a Sound Transmission Class of 50 (45 if field tested) as defined in the UBC Standard No. 35-1, 1982 edition. Sign-off by the Department of Development Services General Manager, or his/her designee, is required prior to the issuance of the first building permit. The Applicant, as an alternative, may retain an engineer registered in the State of California with expertise in acoustical engineering, who would submit a signed report for an alternative means of sound insulation satisfactory to the City of Carson which achieves a maximum interior noise of CNEL 45 (residential standard).

Mitigation Measure H-9: The balconies of the first row of residential units facing Del Amo Boulevard or I-405 Freeway, should any such balconies be constructed, shall have a solid fence/wall with an appropriate height to reduce the noise received from traffic traveled on the adjacent Boulevard.

Enforcement Agency: City of Carson Department of Development Services, Planning and Building and Safety Divisions

Monitoring Agency: City of Carson Department of Development Services, Planning and Building and Safety Divisions

Monitoring Phase: Pre-Construction

Mitigation Measure H-10: If any noise intensive uses (i.e., outdoor theater, passenger station (bus station, rail station, taxi stand), small recycling facility, or commercial uses (outdoor activities, amplified music, outdoor patios, etc)) are proposed within 300 feet of an on-site or off-site residential use, then as part of the site plan review process, a community noise study shall be completed and the study shall demonstrate that the use would not exceed the City of Carson Municipal Code noise standards and/or the standards established in this EIR.

Enforcement Agency: City of Carson Department of Development Services, Planning Division

Monitoring Agency: City of Carson Department of Development Services, Planning Division

Monitoring Phase: Post-Construction

c. Cumulative Impacts

(1) Construction

Noise impacts during construction of the proposed Project and each related project (that has not already been built) would be short-term, limited to the duration of construction and would be localized. In addition, it is anticipated that each of the related projects would have to comply with the applicable provisions of the City's noise ordinance, as well as mitigation measures that may be prescribed by the City pursuant to CEQA provisions that require significant impacts to be reduced to the extent feasible. However, since noise impacts due to construction of the proposed Project would be significant on its own, noise impacts due to construction of the proposed Project in combination with any of the related projects would also be significant without mitigation.

(2) Operation

Cumulative traffic volumes would result in a maximum increase of 4.5 dBA CNEL along Del Amo Boulevard, between Main Street and Figueroa Street. As this noise level increase would be below the 5 dBA CNEL significance threshold for "normally acceptable" land uses, roadway noise impacts due to cumulative traffic volumes would be less than significant along segments of Del Amo Boulevard. Furthermore, impacts from Project-related traffic noise along all other local roadway segments with sensitive receptors would be lower than the significance threshold of 3 dBA CNEL for sensitive receptors exposed to or within "normally unacceptable" or "clearly unacceptable" categories and, thus, less than significant.

Due to Carson Municipal Code provisions that limit noise from stationary sources such as roof-top mechanical equipment and emergency generators, noise levels would be less than significant at the property line for each related project. For this reason on-site noise produced by any related project would not be additive to Project-related noise levels. As such, stationary-source noise impacts attributable to cumulative development would be less than significant.

d. Level of Significance After Mitigation

(1) Construction

The mitigation measures recommended above would reduce the noise levels associated with construction activities to some extent. However, these activities would continue to increase the daytime noise levels at nearby noise-sensitive uses by more than the 5-dBA significance threshold. As such, noise impacts during construction would be considered significant and unavoidable. Furthermore, noise impacts during pile driving are concluded to be significant due to the frequency with which this impact is going to occur and the circumstance in which this impact cannot be mitigated given the construction techniques that are required for the Project

site. Vibration impacts associated with DDC operations during Project construction are concluded to be less than significant with the implementation of Mitigation Measures H-2 and H-3.

(2) Operations

With implementation of Mitigation Measures H-4 through H-10 described above, operational noise impacts to the off-site existing residential uses located to the south and west of the Project site, as well as on-site residential development, would be reduced to less than significant levels. In addition, the Project site would provide some noise-attenuation/shielding characteristics from I-405 Freeway traffic noise to the area, particularly for residential uses located south and west of the Project site.

9.9 Fire Protection

a. Environmental Impacts

Construction activities could temporarily increase demand on fire services due to the occasional exposure of combustible building materials to on-site heat sources or vandalism. The existing perimeter fence would remain in place throughout construction to reduce the potential for hazards associated with trespassing and vandalism. The Project would comply with OSHA and City Fire and Building Codes regarding building site and workplace safety. From the nearest fire station, the Project's internal streets would be accessed via the intersections of Main Street and Del Amo Boulevard and Main Street and Lenardo Drive. The Project's access plan would not facilitate optimum response to all areas of the site, since Fire Station 36 is located to the south of the Project Site. The construction and occupancy of the Project would increase the demand for LACoFD staffing, equipment, and facilities and, as such, would be potentially significant. With the incorporation of recommended mitigation measures, impacts on LACoFD facilities would be reduced to a less than significant level.

b. Mitigation Measures

The Project's potentially significant demand on existing fire service facilities would be reduced to a less than significant level through the implementation of all applicable fire code regulations and mandatory fee payments. To ensure that all applicable fire code regulations, mandatory fee payments and recommended fire safety measures are incorporated into the Project, the following mitigation measures are recommended:

Mitigation Measure I.1-1: Prior to construction, the Applicant shall submit buildings plans to the Los Angeles County Fire Department (LACoFD) for review. Based on such plan check, any additional fire safety recommendations shall be implemented to the satisfaction of the LACoFD.

Mitigation Measure I.1-2: The Applicant shall provide adequate ingress/egress access points for emergency response to the satisfaction of the LACoFD.

Mitigation Measure I.1-3: The Applicant shall comply with all applicable fire code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants as required by the LACoFD.

Mitigation Measure I.1-4: Every building shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than the width prescribed by the LACoFD. The roadway shall extend to within 150 feet of all portions of exterior building walls when measured by an unobstructed route around the exterior of the building.

Mitigation Measure I.1-5: Requirements for access, fire flows, and hydrants, shall be addressed during the City's subdivision tentative map stage.

Mitigation Measure I.1-6: Fire sprinkler systems shall be installed in all residential and commercial occupancies to the satisfaction of the LACoFD.

Mitigation Measure I.1-7: The Applicant shall assure that adequate water pressure is available to meet Code-required fire flow. Based on the size of the buildings, proximity of other structures, and construction type, a maximum fire flow up to 5,000 gallons per minute (gpm) at 20 pounds per square inch (psi) residual pressure for up to a four-hour duration may be required.

Mitigation Measure I.1-8: Fire hydrant spacing shall be 300 feet and shall meet the following requirements:

- No portion of a lot's frontage shall be more than 200 feet via vehicular access from a properly spaced fire hydrant;
- No portion of a building shall exceed 400 feet via vehicular access from a properly spaced fire hydrant;
- Additional hydrants shall be required if spacing exceeds specified distances;
- When a cul-de-sac depth exceeds 200 feet on a commercial street, hydrants shall be required at the corner and mid-block;
- A cul-de-sac shall not be more than 500 feet in length, when serving land zoned for commercial use; and
- Turning radii in a commercial zone shall not be less than 32 feet. The measurement shall be determined at the centerline of the road. A turning area

shall be provided for all driveways exceeding 150 feet in length at the end of all cul-ce-sacs, to the satisfaction of the LACoFD.

Mitigation Measure I.1-9: All onsite driveways and roadways shall provide a minimum unobstructed (clear-to-sky) width of 28 feet. The onsite driveways shall be within 150 feet of all portions of the exterior walls of the first story of any building. The centerline of the access driveway shall be located parallel to, and within 30 feet of an exterior wall on one side of the proposed structure.

Mitigation Measure I.1-10: All onsite driveways shall provide a minimum unobstructed, clear-to-sky width of 28 feet. Driveway width shall be increased under the following conditions:

- If parallel parking is allowed on one side of the access roadway/driveway, the roadway width shall be 34 feet; and
- If parallel parking is allowed on both sides of the access roadway/driveway, the roadway width shall be 36 feet in a residential area or 42 feet in a commercial area.

Mitigation Measure I.1-11: The entrance to any street or driveway with parking restrictions shall be posted with LACoFD approved signs stating "NO PARKING – FIRE LANE" in 3-inch-high letters, at intermittent distances of 150 feet. Any access way that is less than 34 feet in width shall be labeled "Fire Lane" on the final tract map and final building plans.

Mitigation Measure I.1-12: The following standards apply to the Project's residential component only:

- A cul-de-sac shall be a minimum of 34 feet in width and shall not be more than 700 feet in length;
- The length of the cul-de-sac may be increased to 1,000 feet if a minimum 36-foot-wide roadway is provided; and
- A LACoFD approved turning radius shall be provided at the terminus of all residential cul-de-sacs.

Mitigation Measure I.1-13: The Applicant shall pay a fair share contribution for the improvement of fire service facilities that are required to off-set impacts of the Project, subject to approval of the County of Los Angles Fire Department.

c. Cumulative Impacts

The Project and related projects would increase demand on fire services. As with the Project, most of the related projects would be subject to discretionary review, including an evaluation of the adequacy of fire services and the need for mitigation measures. With the implementation of Fire Department recommendations and existing Fire Code requirements. The Project would mitigate its impacts through a fair share contribution for new facilities and therefore not contribute to a cumulative impact. However, since it is unknown what fees would be paid by other projects, it is conservatively concluded that the impacts of the related projects on fire services would be significant.

d. Level of Significance After Mitigation

The Project's potentially significant demand on existing fire service facilities would be reduced to a less than significant level through the implementation of all applicable fire code regulations and recommended mitigation measures. Thus, no unavoidable significant impacts relative to fire services would occur.

9.10 Police

a. Environmental Impacts

(1) Construction Impacts

The Project's construction activities would constitute a less than significant impact with regard to emergency access, since blockage or a substantial slowing of emergency vehicles is not anticipated. Furthermore, implementation of a Construction Management Plan and coordination between the Project's construction managers and the Sheriff's Department, the potential impact of construction on emergency access would be reduced to a less than significant level. As it is anticipated that the existing chain-link fence that secures the perimeter of the Project site would be maintained throughout construction and that an on-site security force would be on duty at the Project site throughout construction, construction impacts would be less than significant.

(2) Operational Impacts

Implementation of the Project would increase the demand for police services provided by the Sheriff's Department due to the Project's permanent on-site residential population and increased traffic, employees, and patrons. The Project's increase in demand could be met through current authorized sworn personnel. Notwithstanding, based upon currently deployed personnel, Project impacts are concluded to be significant, prior to mitigation. Crimes such as shoplifting and burglaries to vehicles that are generally associated with shopping and entertainment areas are anticipated to occur on-site. However, the proposed Project is

anticipated to provide on-site security personnel in support of the proposed on-site commercial uses. Emergency access during Project operations would be provided via several new intersections and/or existing intersections and would not be impeded. Thus, no significant impacts related to emergency access would occur. As detailed design drawings of the Project are not currently available, impacts due to the Project's design are conservatively concluded to be significant.

b. Mitigation Measures

The following mitigation measures are based on the recommendations provided by Sheriff's Department regarding the proposed Project as well as a requirement regarding the provision of private security service within Districts 1 and 2:

Mitigation Measure I.2-1: The Applicant shall provide private security services within the areas of Districts 1, 2, and 3 that are occupied by commercial development. On-site security services shall maintain an ongoing dialogue with the Sheriff's Department so as to maximize the value of the security service that are provided.

Mitigation Measure I.2-2: The Applicant shall incorporate into the Project design a Community Safety Center for use by the Project's private security force and the Los Angeles County Sheriffs Department. It shall include the following features at a minimum: a front desk/reception area, a community meeting room, work space for law enforcement and public safety personnel, a video monitoring console, and restrooms. The Center shall be staffed by either a Sheriff's Department Community Services Officer or personnel approved by the Sheriff's Department.

Mitigation Measure I.2-3: The Applicant shall install video cameras throughout the commercial development within Districts 1, 2, and 3 with a digitally recorded feed to the Community Safety Center that is also accessible via the internet at the Carson Sheriff's Station.

Mitigation Measure I.2-4: The Applicant shall provide the Project's fair share of a budget for the deployment of a one person patrol unit, which is dedicated to providing preventative patrol on the commercial portions of the Project site.

Mitigation Measure I.2-5: The Applicant shall fund Deputy Sheriffs on an overtime basis to augment security during peak periods, as jointly determined by the Applicant or its successor, and the Sheriff's Department.

Mitigation Measure I.2-6: The management of the entertainment venues located within the Project site shall notify the Sheriff's Station in advance of planned activities (i.e. movie schedules).

Mitigation Measure I.2-7: The Sheriff's Department Crime Prevention Unit shall be contacted for advice on crime prevention programs that could be incorporated into the proposed Project, including Neighborhood Watch.

c. Cumulative Impacts

(1) Construction Impacts

Since no related projects are sufficiently close to the Project site to create a cumulative impact on adjoining street segments, the cumulative effects of construction activities on emergency access would be less than significant. In addition, the related projects are also anticipated to maintain secure sites during the respective construction periods, so that cumulative construction activities would not result in a demand on police services greater than the existing capability of the Sheriff's Department.

(2) Operational Impacts

As with the Project, most of the related projects would be subject to discretionary review, including an evaluation of the adequacy of police services and the need for mitigation measures. As the Project's impacts would be addressed via the identified migration measures, the Project would not contribute to a significant cumulative impact. Furthermore, the Sheriff's Department would have input regarding mitigation for each of the related projects. Thus, cumulative impacts are concluded to be less than significant.

d. Level of Significance After Mitigation

With the implementation of the recommended mitigation measures, impacts to police services and facilities provided by the Sheriff's Department would be less than significant.

9.11 Schools

a. Environmental Impacts

The Project would generate approximately 489 students, consisting of 213 elementary school students, -119 middle school students, and 157 high school students. While Project-generated middle school students could be accommodated by existing facilities at White Middle School, increased enrollment attributable to the proposed Project would exceed existing school capacities at Carson Elementary School and Carson High School. However, the payment of the

requisite school facility development fees would offset the Project's potential impacts to these schools. As a result, Project development would result in an impact that is less than significant to the LAUSD schools that serve the Project site.

b. Mitigation Measures

The Applicant would be required to pay new school facility development fees at the time of building permit issuance. Pursuant to California Government Code Section 65995, payment of the developer fees required by State law provides full and complete mitigation of the Project's impacts on school facilities. Therefore, no other mitigation measures are required.

c. Cumulative Impacts

Cumulative impacts related to schools were considered only for projects within the same attendance boundaries as the schools identified to serve the Project. The related projects identified would generate approximately 197 students: 15 Elementary, 76 Middle, and 106 High School. The generation of students from the related projects in combination with students generated by the proposed Project would result in a potentially significant impact to all of the identified LAUSD schools as existing school capacities would be exceeded. School capacity can be increased by the use of portable or modular classrooms and the implementation of year-round or multi-track school calendar. Portable classrooms are generally used to relieve overcrowded schools and are designed to accommodate 25 students per portable unit for elementary schools and 30 students per portable unit for middle and high schools. Implementing year-round and multi-track calendars also serve to increase school capacity by roughly one-third. However, the school facility development fees that would be paid by all new development, under the provisions of Government Code Section 65995, would constitute full mitigation of the impacts of these new developments, thereby reducing individual and cumulative Project impacts to a level that is less than significant.

d. Level of Significance After Mitigation

Potential impacts to LAUSD middle and high schools associated with the proposed Project, based on available forecasted capacity within existing facilities, would be potentially significant. While the students generated by the proposed Project would increase the forecasted over-capacity conditions at Carson Elementary School and Carson Senior High School, pursuant to the provisions of Government Code Section 65995, the Project's impact on school facilities is fully mitigated through the payment of the requisite school facility development fees current at the time building permits are issued. As the Project applicant is required to pay school facility development fees, potential Project impacts to schools are concluded to be less than significant. Therefore, potential impacts to all LAUSD school facilities attributable to the proposed Project would be less than significant.

9.12 Parks and Recreation

a. Environmental Impacts

Common and private open space would be provided throughout the residential areas of the Project site. Per the requirements of the Specific Plan, a minimum of 60 square feet of private open space would be provided per dwelling unit with a minimum dimension of five feet in any direction. Also pursuant to the Specific Plan, a minimum of 300 square feet of common open space would be provided per dwelling unit in District 3; a minimum of 200 square feet per ownership unit in District 1; and a minimum of 150 square feet minimum per rental unit in District 1. Common open space for each unit would have a minimum dimension of 10 feet in any direction. With 1,550 dwelling units, this would equate to 315,000 sq.ft., or 7.23 acres. In addition, the Project includes approximately 9.0 acres of open space along the southern and southwestern edges of the Project site. Recreational amenities that would also be available for use by the Project's residents would also contribute to the Project's common open space provisions. Specifically, to meet the recreational needs of Project residents, health clubs on the ground floor of the multi-family apartment buildings are proposed as well as bicycle and pedestrian routes throughout the Project site. The Project would meet the Carson Municipal Code requirements for the provision of park space through a combination of land dedication, on-site improvements, and/or, the payment of in-lieu fees, and thus, would have a less than significant impact with regard to the provision of park space. While the Project provides less private open space than that required by the Carson Municipal Code, to assure that the intent of these requirements are met, a mitigation measure is proposed to address this potentially significant impact. While the Applicant has proposed various features to contribute to meeting the City's common open space requirement, the amount of such space has not been determined at this time. Therefore, it is concluded that a significant impact may occur regarding the provision of common open space, and a mitigation measure is recommend below, to require that the common open-space standard be met. Project impacts would be potentially significant. Mitigation measures are proposed to reduce the impact to a less than significant level

b. Mitigation Measures

Two mitigation measures are proposed to address potential impacts on parks and recreation services. The first measure addresses impacts on public recreation facilities. Even though a significant impact on such facilities is not anticipated, the related measure ensures that the Project's contribution to parks and recreation facilities meets the City's Quimby requirements. The second measure addresses a potentially significant impact that could occur regarding the provision of private open space.

Mitigation Measure I.4-1: The Project shall provide park and recreation facilities pursuant to Section 9207.19, equivalent to three acres per 1,000 population,

that would be met through the provision of park space, on-site improvements, and/or, the payment of in-lieu fees.

Mitigation Measure I.4-2: The Project shall meet the intent of Municipal Code Sections 9128.54 and 9128.15 through the provision of private open space as defined therein and/or the provision of additional amenities that meet the recreational needs of Project residents, e.g., health clubs.

Mitigation Measure I.4-3: The Project shall meet the requirements of Municipal Code Section 9126.28 by demonstrating that the Project's common open space area meets the 40% standard established therein.

c. Cumulative Impacts

Of the 36 related projects, 17 are residential in nature or contain a residential component. A total of 609 dwelling units are anticipated to be constructed with implementation of these projects; 163 single-family and 446 multiple-family units. Land dedication requirements for the related projects were calculated base on the land dedication factors set forth in the Carson Municipal Code for each dwelling unit type. As each related project would comply with the requirements established in the Carson Municipal Code, the potential park and open space impacts of the related projects would be reduced to levels that are less than significant.

d. Level of Significance After Mitigation

Potential significant impacts to park and recreational facilities associated with the proposed Project, based on the maximum requirements established via the Carson Municipal Code, would be reduced to a less than significant level via compliance with Mitigation Measure I.4-1. A potentially significant impact with regard to the provision of private open space would be reduced to a less than significant level via Mitigation Measure I.4-2. A potentially significant impact with regard to the provision of common open space would be reduced to a less than significant level via Mitigation Measure I.4-3. Project impacts would result in less than significant impacts with regard to the adopted General Plan goals, policies and implementation measures, nor open space requirements established in the Municipal Code. Thus, the Project would meet the demand for services as addressed through those provisions. Therefore, potential impacts to park and recreational facilities attributable to the proposed Project would be less than significant.

9.13 Libraries

a. Environmental Impacts

Project-generated residents would cause an increase in the Carson Regional Library's service population and create a significant impact on its services and facilities. The Carson

Regional Library is currently underserved in terms of facility size and library material items, providing approximately 0.34 square feet of facility space and 2.6 library items per capita, thereby, not meeting the County Library minimum guidelines of 0.5 square feet of facility space and 2.75 library items per capita. The proposed Project would generate the need for 3,485 square feet of library facility space, 19,165 library collection items, 17 reader seats, 75 meeting room seats, 7 public access computers, and 14 standard size parking spaces. Thus, a significant impact would result.

b. Mitigation Measures

To address the Project's significant impact, the following mitigation measure will apply:

Mitigation Measure I.5-1: The Applicant shall pay a fair share contribution for the improvement of library facilities that are required to off-set impacts of the Project, subject to approval of the County of Los Angles Public Library.

c. Cumulative Impacts

Approximately half of the 609 dwelling units proposed by related projects are located both within the City of Carson and in the Carson Library service area. The development of the related projects would create additional demand on the Carson Library's facilities and services and cause the Library to further exceed the County guidelines for the provision of library facilities. In sum, the combined residential population would create the need for an additional 4,023 square feet of facility space, 22,127 library material items, 20 reader seats, 16 meeting room seats, 8 computers, and 16 parking spaces. Thus, without mitigation, the development of the identified related projects would result in a significant impact on library services due to lack of available capacity to meet the demand for library services. The Project, via the implementation of the recommended mitigation measure, would not increase the cumulative impact that would be generated by the identified related projects. Notwithstanding, since it is unknown what fees would be paid by other projects, it is conservatively concluded that the impacts of the identified related projects on library services would be significant.

d. Level of Significance After Mitigation

Through the payment of fees Project impacts would be reduced to a less than significant level.

9.14 Water Supply

a. Environmental Impacts

Water would be used for dust suppression and other construction activities. Such demand would be limited and, as such, would be less than significant. New tie-ins to the existing water mains in Main Street and Del Amo Boulevard may be required to serve the existing on-site system. During operation, water demand is estimated to be 795,470 gallons per day, which represents 42.3 percent of the forecasted growth for the Dominguez District through 2010. Based on the Project's Water Supply Assessment (WSA), the City's water supplier, California Water Services Company (CWS), has concluded that the needed quantity of water, and its conveyance to the Project site, are sufficient to meet Project needs. The development of commercial/high-density residential development may require fire flows up to 5,000 gallons per minute at 20 pounds per square inch residual pressure for up to a five-hour duration. The existing water mains are anticipated to be sufficient to meet fire flow requirements, as they were originally sized to meet future development needs in the Project area. Fire flow would be determined at the time a specific development application is submitted and any new lines would be sized to meet the Project's fire flow requirements. Since the Project's demand would not exceed the available water supply or the fire flow capacity of the existing conveyance system, the Project's impact on water supply would be less than significant.

b. Mitigation Measures

Although development of the proposed Project is not anticipated to result in significant impacts to water supply services, the following measures would ensure that water resources would be conserved to the extent feasible:

Mitigation Measure J.1-1: The Building Department and the Planning Division shall review building plans to ensure that water reducing measures are utilized, as required by Title 20 and Title 24 of the California Administrative Code. These measures include, but are not limited to, water conserving dishwashers, low-volume toilet tanks, and flow control devices for faucets.

Mitigation Measure J.1-2: The Project shall comply with the City's landscape ordinance, "A Water Efficient Landscape Ordinance," as required by the State Water Conservation Landscape Act.

Mitigation Measure J.1-3: The Applicant shall provide reclaimed water for the Project's non-potable water needs, if feasible.

Mitigation Measure J.1-4: Landscaping of the Project site shall utilize xeriscape (low-maintenance, drought-resistant) plantings.

Mitigation Measure J.1-5: Automatic irrigation systems shall be set to insure irrigation during early morning or evening hours to minimize water loss due to evaporation. Sprinklers must be reset to water less in cooler months and during rainfall season so that water is not wasted on excessive landscape irrigation.

Mitigation Measure J.1-6: The Project shall be designed to recycle all water used in cooling systems to the maximum extent possible.

Mitigation Measure J.1-7: To the maximum extent feasible, reclaimed water shall be used during the grading and construction phase of the Project for the following activities: (1) dust control, (2) soil compaction, and (3) concrete mixing.

Mitigation Measure J.1-8: Water lines and hydrants shall be sized and located so as to meet the fire flow requirements established by the Los Angeles County Fire Department.

c. Cumulative Impacts

The total consumption of water, inclusive of the Project, and the related projects, would be approximately 1,808,282 gallons of water per day, constituting approximately 96 percent of the forecasted Dominguez District growth to year 2010. Without monitoring and planning pursuant to existing regulations, a significant cumulative impact could occur. The Urban Water Management Plan (UWMP) prepared by CWS accounts for projected growth, and State regulations provide the means to ensure that the water needs of notable development projects are considered relative to the ability of the CWS to adequately meet future demand. The CWS anticipates that it would be able to supply regional growth, including the Project and related projects, through the foreseeable future. With implementation of mitigating State regulatory protections, no significant cumulative impacts related to water demand are anticipated.

d. Level of Significance After Mitigation

The total estimated water demand for the Project is anticipated to exceed available supplies and distribution infrastructure capabilities, or exceed the projected demand assumed in the planning for future water infrastructure needs. No local or regional upgrading of water conveyance systems is anticipated and, as such, no significant construction impacts from the development of additional off-site water lines are anticipated. Therefore, no significant unavoidable impacts relative to water supply would occur.

9.15 Wastewater

a. Environmental Impacts

Construction activities would generate a negligible amount of wastewater. The Project's on-site wastewater system would be developed during the construction of the Project and may require new tie-ins to the existing sewer lines in Main Street and Del Amo Boulevard. The Project's wastewater generation would be approximately 721,113 gallons per day (gpd). Wastewater would be treated at the Joint Water Pollution Control Plant (JWPCP), which has a design capacity of 385 million gallons per day (mgd). Since the JWPCP currently processes an average flow of 324.9 mgd, the Project's additional waste flow would require the use of 1.2 percent of the remaining 60.1 mgd capacity. The District's review of sewer lines serving the Project site indicate that no known limitations exist at this time. However, the District notes that significant impacts on downstream portions of the District's sewerage system can occur and capacities need to be verified. The District reviews sewer connection permits and requires payment of connection fees to construct any needed incremental expansion of the sewer system. Such fees would mitigate the impact of the Project on the conveyance system. Wastewater conveyance and treatment systems are designed to serve SCAG's regional growth forecasts and, since the Project is consistent with SCAG forecasts for the South Bay Cities sub-region, no significant impacts in relation to regional treatment capacity would occur.

b. Mitigation Measures

Although development of the proposed Project is not anticipated to produce significant impacts to sanitary sewers, the following measures would ensure that the increase in sewage generation attributable to the Project would result in a less than significant impact.

Mitigation Measure J.2-1: All required sewer improvements shall be designed and constructed according to the standards of the City of Carson and County of Los Angeles.

Mitigation Measure J.2-2: Fee payment is required prior to the issuance of a permit to connect to district sewer facilities.

Mitigation Measure J.2-3: The Building and Safety and Planning Divisions of the Development Services Department shall review building plans to ensure that water reducing measures are utilized, as required by Title 24 of the California Administrative Code. These measures include, but are not limited to, water conserving dishwashers, low-volume toilet tanks, and flow control devices for faucets.

Mitigation Measure J.2-4: The project shall include a dual plumbing system designed to utilize reclaimed water for non-potable uses.

c. Cumulative Impacts

Wastewater generated by related projects in conjunction with the proposed Project is estimated to be 1,610,491 gallons of wastewater per day. The additional waste flow would constitute 2.7 percent of the JWPCP's remaining 60.1 mgd capacity and, as such, would not exceed existing capacity. As with the Project, the capacity of downstream mains would be determined through the review of connection permits, prior to approval of related projects' building plans. Required connection fees would provide for needed incremental expansion of sewer lines. Therefore, related projects would not exceed the capacity of the treatment and conveyance system and cumulative impacts on the wastewater facilities would be less than significant.

d. Level of Significance After Mitigation

With the implementation of the recommended mitigation measures, any local deficiencies in sewer lines would be identified and remedied. No unavoidable significant impacts on wastewater conveyances or the capacity of the Joint Water Pollution Control Plant would occur.

9.16 Solid Waste

a. Environmental Impacts

Construction and demolition debris would be generated during the construction of the proposed Project. With the implementation of the City's Construction and Demolition Debris Recycling Program, the actual amount of construction debris disposed of at a landfill would be approximately 6,222 tons. However, as Project construction debris would represent approximately .0009 percent of remaining inert landfill capacity, impacts attributable to the Project's construction debris are concluded to be less than significant. Municipal solid waste generated by the residential and commercial uses proposed under the Project would require the disposal of approximately 10,064 tons of solid waste per year. Through a combination of compliance with City recycling requirements, the limited proportion of Countywide solid waste generation attributable to the proposed Project, available capacity within the El Sobrante Landfill, and the ongoing legally required solid waste planning programs, it is concluded that Project operations would have a less than significant impact with regard to landfill disposal capacity. As the Project would comply with City-required recycling programs, Project operations would be consistent with the applicable provisions of the SRRE. As such, a less than significant impact would result.

b. Mitigation Measures

Mitigation Measure J.3-1: All structures constructed or uses established within any part of the proposed Project site shall be designed to be permanently equipped with clearly marked, durable, source sorted recycling bins at all times to facilitate the separation and deposit of recyclable materials.

Mitigation Measure J.3-2: Primary collection bins shall be designed to facilitate mechanized collection of such recyclable wastes for transport to on- or off-site recycling facilities.

Mitigation Measure J.3-3: The Applicant shall coordinate with the City of Carson to continuously maintain in good order for the convenience of patrons, employees, and residents clearly marked, durable and separate recycling bins on the same lot, or parcel to facilitate the deposit of recyclable or commingled waste metal, cardboard, paper, glass, and plastic therein; maintain accessibility to such bins at all times, for collection of such wastes for transport to on- or off-site recycling plants; and require waste haulers to utilize local or regional material recovery facilities as feasible and appropriate.

Mitigation Measure J.3-4: Any existing on-site roads that are torn up shall be ground on site and recycled into the new road base.

Mitigation Measure J.3-5: Compaction facilities for non-recyclable materials shall be provided in every occupied building greater than 20,000 square fee in size to reduce both the total volume of solid waste produced and the number of trips required for collection, to the extent feasible.

Mitigation Measure J.3-6: All construction debris shall be recycled in a practical, available, accessible manner, to the extent feasible, during the construction phase.

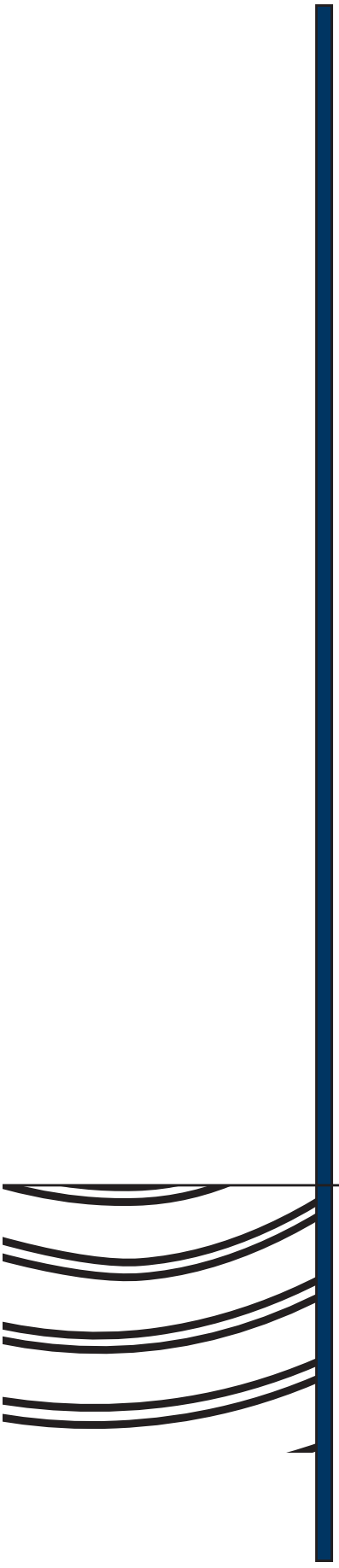
c. Cumulative Impacts

Development of the identified related projects would generate 23,052 tons of solid waste during construction. As with the proposed Project, pursuant to the City's Construction and Demolition Debris Recycling Program, at least 50 percent of the construction debris generated by the related projects would be required to be recycled. In comparison to a remaining inert landfill disposal capacity of 69.94 million tons, cumulative construction debris, incorporating the conservative assumption that there is no recycling of construction wastes, constitutes 0.03 percent of the remaining inert landfill capacity. Based on this small percentage, cumulative impacts on inert landfill capacity are concluded to be less than significant.

During operations, cumulative solid waste disposal for the related projects is forecasted to be approximately 36,630 tons on an annual basis. It is anticipated that the proposed Project and other related projects would not conflict with solid waste policies and objectives in the City's SRRE or Construction and Demolition Debris Recycling Program. Impacts to solid waste policies and objectives intended to help achieve the requirements of AB 939 from implementation of the proposed Project and related projects would not be cumulatively significant. Cumulative annual solid waste generation represents 0.15 percent of the total solid waste generated in Los Angeles County in 2003. Based on this small percentage as well as the City's recycling programs and ongoing planning efforts at a Countywide level assuring 15 years of landfill capacity on an ongoing basis, cumulative impacts on municipal landfill capacity are concluded to be less than significant.

d. Level of Significance After Mitigation

Impacts associated with the Project's solid waste generation are concluded to be less than significant. Furthermore, the County via its established planning programs, has concluded that landfill disposal capacity would be available for the next 15 years, and in the long-term. The proposed Project would not conflict with the solid waste policies and objectives in the SRRE or the City's Construction and Demolition Debris Recycling Program and impacts relative to adopted solid waste diversion programs and policies would be less than significant.



II. Project Description

II. PROJECT DESCRIPTION

A. INTRODUCTION

Carson Marketplace, LLC (the "Applicant") is proposing the Carson Marketplace (the "Project"), a 168-acre development located southwest of the I-405 Freeway at and north of the Avalon Boulevard interchange, in the City of Carson. The proposed Project would include some or all of the following uses: neighborhood commercial, regional commercial, commercial recreation/entertainment, restaurant, hotel, and residential. Specifically, the Applicant's proposal consists of a total of 1,550 residential units (1,150 for-sale units and 400 rental residential units), a 300-room hotel, and 1,995,125 square feet (sq.ft.) of commercial floor area.[7] The Applicant is proposing a wide range of land uses in order to create a diversity of on-site activity that responds to the future needs and demands of the southern California economy. In order to fully respond to these demands, the proposed Project includes an Equivalency Program that would allow the composition of on-site development to be modified in a manner that does not increase the Project's impacts on the environment. For example, office uses might be developed in place of a portion of the above proposed uses subject to the provisions of the Equivalency Program as set forth in the Carson Marketplace Specific Plan.

The proposed Project, as analyzed in this Draft EIR, is defined by a series of development standards that would regulate the amount and types of development, the size and arrangement of buildings, on-site circulation and open space, as well as the general appearance of the development occurring on the Project site. These standards would be implemented through the Carson Marketplace Specific Plan upon adoption by the City Council.

The remainder of this Project Description includes five sections that describe the features of the proposed Project in more detail. They are as follows:

B. Project Location—Describes the location of the Project site in a regional and local context.

C. Project Objectives—Identifies the objectives to be achieved through Project implementation.

D. Project Characteristics—Describes the characteristics of the proposed Project, including the Project's proposed land uses, the development standards set forth in the Carson Marketplace Specific Plan, the proposed land use equivalency program, and

[7] *The total amount of commercial floor area includes 200,000 sq. ft. for the development of the 300-room hotel.*

an overview of the past use of the portion of the Project site that was used as a landfill and the resultant need for remediation.

E. Project Construction and Schedule—Discusses the sequencing of on-site construction and the anticipated time frame for the development as a whole.

F. Use of the EIR—Describes the use of the EIR, as well as the responsible agencies and the discretionary actions required to implement the proposed Project.

B. PROJECT LOCATION

The Project site is located in the City of Carson, within the City's Redevelopment Project Area No. One, Merged and Amended. It is in the South Bay area of Los Angeles County and is currently undeveloped. The site is located approximately 17 miles south of downtown Los Angeles and approximately 6.5 miles east of the Pacific Ocean. The Project site is comprised of approximately 168 acres located southwest of the San Diego Freeway (I-405) at and north of the Avalon Boulevard interchange. The Project site consists of two components. The majority of the Project site, consisting of 157 acres, is located south of Del Amo Boulevard, while the remaining 11 acres are located north of Del Amo Boulevard. Figure 1 on page 68 places the Project site in a regional and local context, whereas an aerial photograph of the Project site and adjacent areas which also shows the nearby land uses is presented in Figure 2 on page 69.

The San Diego Freeway (I-405), Harbor Freeway (I-110), Artesia Freeway (SR-91), and Long Beach Freeway (I-710) provide regional access to the Project site. The I-405 Freeway is located adjacent to the Project site's eastern boundary, the I-110 Freeway is located directly west of the Project site, and the SR-91 Freeway is located approximately 2.5 miles north of the Project site. The I-710 Freeway, which is located on Carson's eastern boundary, links the City with the Long Beach and Harbor areas. Locally, access to the Project site is available via Main Street (a north-south thoroughfare on the western side of the Project site), Avalon Boulevard (an exit from the I-405 Freeway and a major north-south arterial, with a proposed direct link into the Project site), and Del Amo Boulevard (an east-west arterial which bisects the northern portion of the Project site).

The Project site is bounded by a nursery and the Dominguez Hills Golf Course to the north, the Torrance Lateral Flood Control Channel and residential uses to the south and west, industrial uses to the west and the I-405 Freeway to the east. In a larger context, the Project site is surrounded by various uses. East of the I-405 Freeway, land uses include neighborhood and regional retail shopping, most notably the South Bay Pavilion. To the north and east of the Project site and the I-405 Freeway is the Victoria golf course, with single-family residential uses located to the east. To the west of the Project site extending away from the site on Torrance and Del Amo Boulevards are commercial and light industrial uses. Further north on Main Street are several light industrial uses.

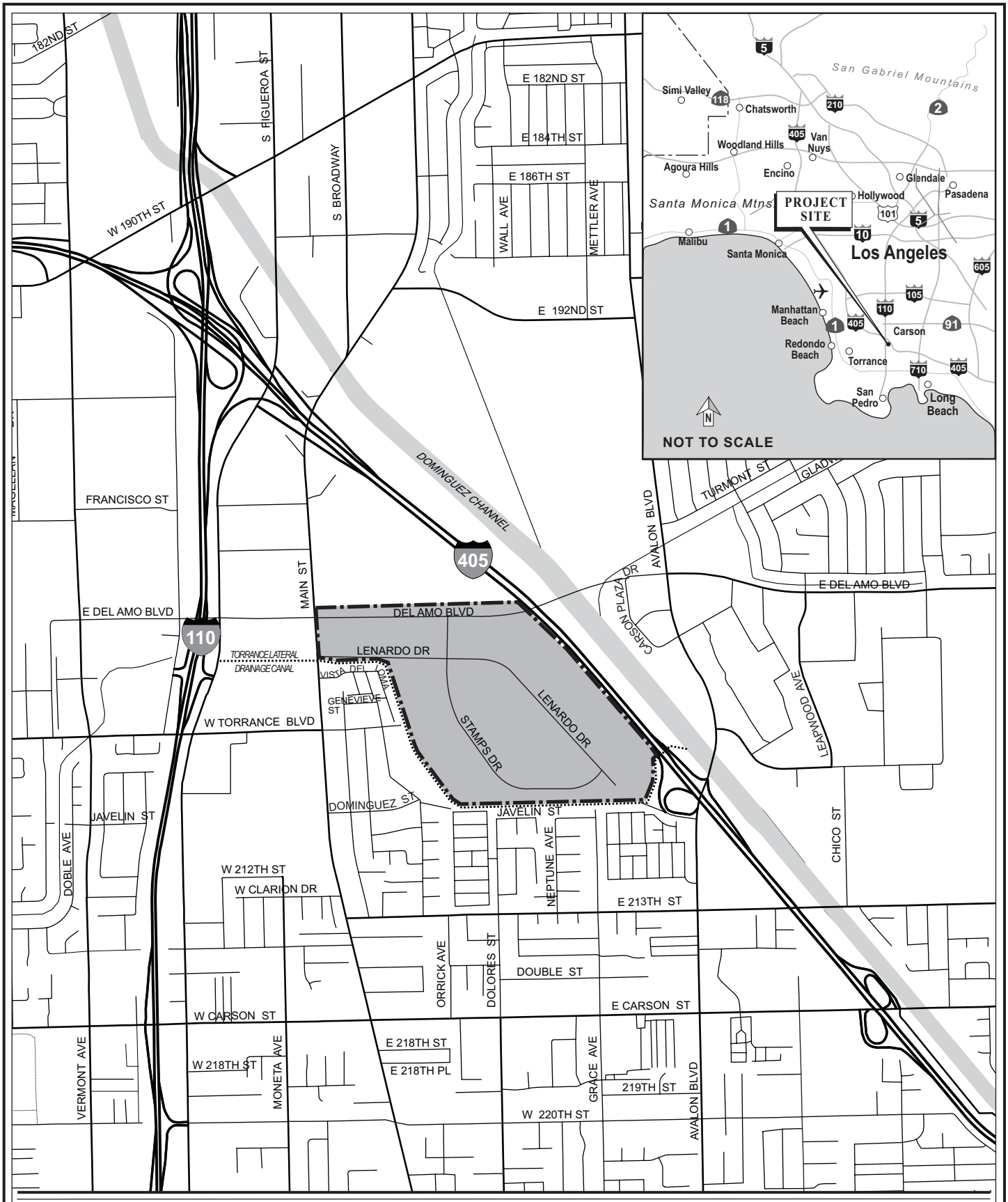


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Figure 1
Regional and Project Vicinity Map

Source: Thomas Guide 2004 and PCR Services Corporation

Figure 2
Existing Land Uses

C. PROJECT OBJECTIVES

Section 15124(b) of the State of California Environmental Quality Act (CEQA) Guidelines states that the Project Description shall contain "a statement of the objectives sought by the proposed project." Section 15124(b) of the CEQA Guidelines further states that "the statement of objectives should include the underlying purpose of the project." In the case of the proposed Project, the underlying purpose is to redevelop the Project site with a project that would pay for the successful remediation of the site, serve as a distinct gateway to the City, and provide for long term stability and economic benefit to the City of Carson as well as the current and future property owners.

The Project's objectives are listed below, with the Basic Objectives listed first, and the remaining objectives following:

Basic Project Objectives

- Achieve productive reuse of a large brownfield site by approving a Project capable of generating the revenue necessary to pay for and effectuate remediation of the environmental conditions on the Project site.

- Promote the economic well being of the Redevelopment Project Area by encouraging the diversification and development of its economic base, and assist in creating both short and long term employment opportunities for the residents of the Redevelopment Project Area and the City.

- Maximize shopping and entertainment opportunities to serve the population and maintain a sustainable balance of residential and non-residential uses by approving a mixed use Project that includes entertainment, retail shopping, restaurants, and residential units.

- Provide a diversity of both short term and long term employment opportunities for local residents by approving a Project that will generate substantial construction work opportunities and long-term jobs in the commercial and hospitality industries.

- Improve the housing stock, including affordable housing, by approving a Project that includes a substantial residential component with rental and for sale units.

- Provide a signature/gateway Project that contributes to the creation of a vibrant urban core for the City, taking advantage of the site's proximity to the San Diego Freeway.

Additional Project Objectives

- Stimulate private sector investment in the Project site by implementing a Project that is fiscally sound and capable of financing the construction and maintenance of necessary infrastructure improvements.

- Develop the Project site in a manner that enhances the attractiveness of the City's freeway corridor and the major arterials that adjoin the Project site.

- Increase revenues to the City by approving a Project that provides for a variety of commercial and retail activities with the potential to generate substantial sales and property tax revenue.

- Promote the economic well being of the Project site by approving a Project that is attractive to consumers and residents and that would ensure long-term success of the development.

- Provide hotel rooms to meet an identified market need, and in so doing serve nearby businesses, community activities, and proposed on-site uses

- Consistent with other objectives, provide a Project design that interfaces with surrounding uses in a manner that provides for a transition between the Project and adjacent areas.

D. PROJECT CHARACTERISTICS

1. Background and Context for the Proposed Project

a. Former On-Site Landfill Operations

The 157-acre portion of the Project site that is located south of Del Amo Boulevard was used as a Class II landfill under an Industrial Waste Disposal Permit issued to Cal Compact, Inc. by the County of Los Angeles. Landfilling on the 157-acre site began in 1959, shortly after the banning of incinerators in Los Angeles County in 1957. Landfilling occurred from April 1959 to December 1964 with an approximate closing date of February 1965.

During the life of the landfill, approximately 6 million cubic yards (cy) of solid municipal waste and 2.6 million barrels of industrial liquid waste were received at the landfill. Waste received included organic wastes, such as solvents, oils, and sludges, as well as heavy metals, paint sludges, and inorganic salts.

As a result of contamination on and adjacent to the landfill, the 157-acre site is listed by the State of California Department of Toxic Substances Control (DTSC) as a hazardous substances site. On March 18, 1988, Remedial Action Order No. HSA87/88-040 was issued for the Project site requiring the implementation of remedial activities.

Due to the size and complexity of the former landfill site, DTSC divided its remediation into two operable units.[8] The Upper Operable Unit (Upper OU) consists of the site soils, the waste zone above and within the Bellflower Aquitard, and the Bellflower Aquitard down to but not including, the Gage Aquifer. The Lower Operable Unit (Lower OU) is composed of the Gage, Lynwood, and Silverado Aquifers, and all other areas impacted by the geographic extent of any hazardous substances which may have migrated or may migrate from the aforementioned areas or from the Upper OU. The operable units are also established to prioritize the remedial response to the areas of known impacts (Upper OU) versus potential impacts (Lower OU).

Investigations of the Upper OU documented the presence of landfill gases (methane and carbon dioxide) as well as volatile organic compounds (VOCs) and metals in the landfill's soil and groundwater. A Remedial Action Plan (RAP) was prepared and approved by DTSC for the Upper OU in 1995. A RAP for the Lower OU was prepared to address the Lower OU. The RAP for the Lower OU was approved by DTSC on January 24, 2005.

Implementation of the Upper OU RAP is required to make the site safe for the proposed Project. Implementation of the Lower OU RAP would be protective of groundwater resources but is not required to make the site safe for the proposed Project. The two RAPs are discussed further in the discussion of Project Characteristics below.

b. Previous Development Proposal—Metro 2000

The Project site was the subject of a previous development proposal in the early 1990s. Specifically, in 1993, a project known as Metro 2000 was proposed as a multi-phase development. Phase I of the Metro 2000 project included the development of L.A. MetroMall, a 1.83-million–sq.ft. regional mall consisting exclusively of outlet retail stores. Phase II of the Metro 2000 project included an additional 687,400 sq.ft. of regional commercial retail uses and 600,000 sq.ft. of office floor area. Therefore, buildout of the Metro 2000 project consisted of a

[8] *Federal regulations at 40 CFR 300.5 define an operable unit as "…a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of release, or pathway of exposure. The cleanup of the site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site."*

total of approximately 3.1 million sq.ft. of gross buildable area. A Draft and Final EIR for Metro 2000 were prepared and certified by the Carson City Council. In addition, the City Council approved Phase I of Metro 2000. Following certification of the Metro 2000 EIR by the Carson City Council in 1995, the State Department of Toxic Substances Control (DTSC) approved the RAP for the remediation of the site. However, the Metro 2000 project never went forward.

2. Overview of Project Characteristics

The proposed Project includes the remediation of the Project site and the subsequent development of urban uses. A description of the proposed Project and an overview of the remediation program for the Project site is provided below under separate subheadings.

a. Urban Land Use Development

The proposed Project would include up to 1,550 residential units (1,150 for-sale units and 400 rental units), a 300-room hotel, and 1,995,125 square feet (sq.ft.) of commercial floor area, as shown in Table 2 on page 74.[9] The residential development would be limited to a maximum density of 60 dwelling units per acre (du/acre); and commercial development would be limited to a maximum site-wide floor area ratio (FAR) of 0.33. The precise number, size, shape, and location of buildings has not been determined; however, the development would occur under the development standards and regulations set forth in the Carson Marketplace Specific Plan. These regulations identify permitted uses and development and design standards. These regulations, in combination with the development limits, would define the extent and nature of future on-site development. The Carson Marketplace Project is located within the City's Redevelopment Area One. The City's Redevelopment Agency has determined that the construction of affordable housing in accordance with the provisions of the Redevelopment Plan and applicable State law would occur via an Owner Participation Agreement.

The Specific Plan divides the Project site into three Development Districts. Each District has a distinct character and identity, and includes regulations appropriate to the mix of uses within its boundaries, as well as the role of the District within the overall site plan. The three Development Districts are shown in Figure 3 on page 75, and are described as follows:

- **Development District 1** is located just south of Del Amo Boulevard. It extends between Main Street on the west and the I-405 Freeway on the east, and to the Corridor Road on the south (approximately 480 feet south of Del Amo boulevard for most of the District edge). This District consists of 31 acres and includes commercial and residential uses.

[9] *The total amount of commercial floor area includes 200,000 sq. ft. for the development of the 300-room hotel.*

Table 2

Proposed Project Land Use Program

Land Uses	Square Footage/Dwelling Units
Residential	
For Sale	1,150 units
Rental	400 units
Neighborhood Commercial	130,000 sq.ft.
Restaurant	81,125 sq.ft.
Hotel (300 rooms)	200,000 sq.ft.
Commercial Recreation/Entertainment	214,000 sq.ft.
Regional Commercial	1,370,000 sq.ft.
Total Residential	**1,550 units**
Total Commercial [a]	**1,995,125 sq.ft.**

N/A = Not Applicable

[a] *The total amount of commercial floor area includes 200,000 sq. ft. for the development of the 300-room hotel.*

Source: Carson Marketplace, LLC, 2005

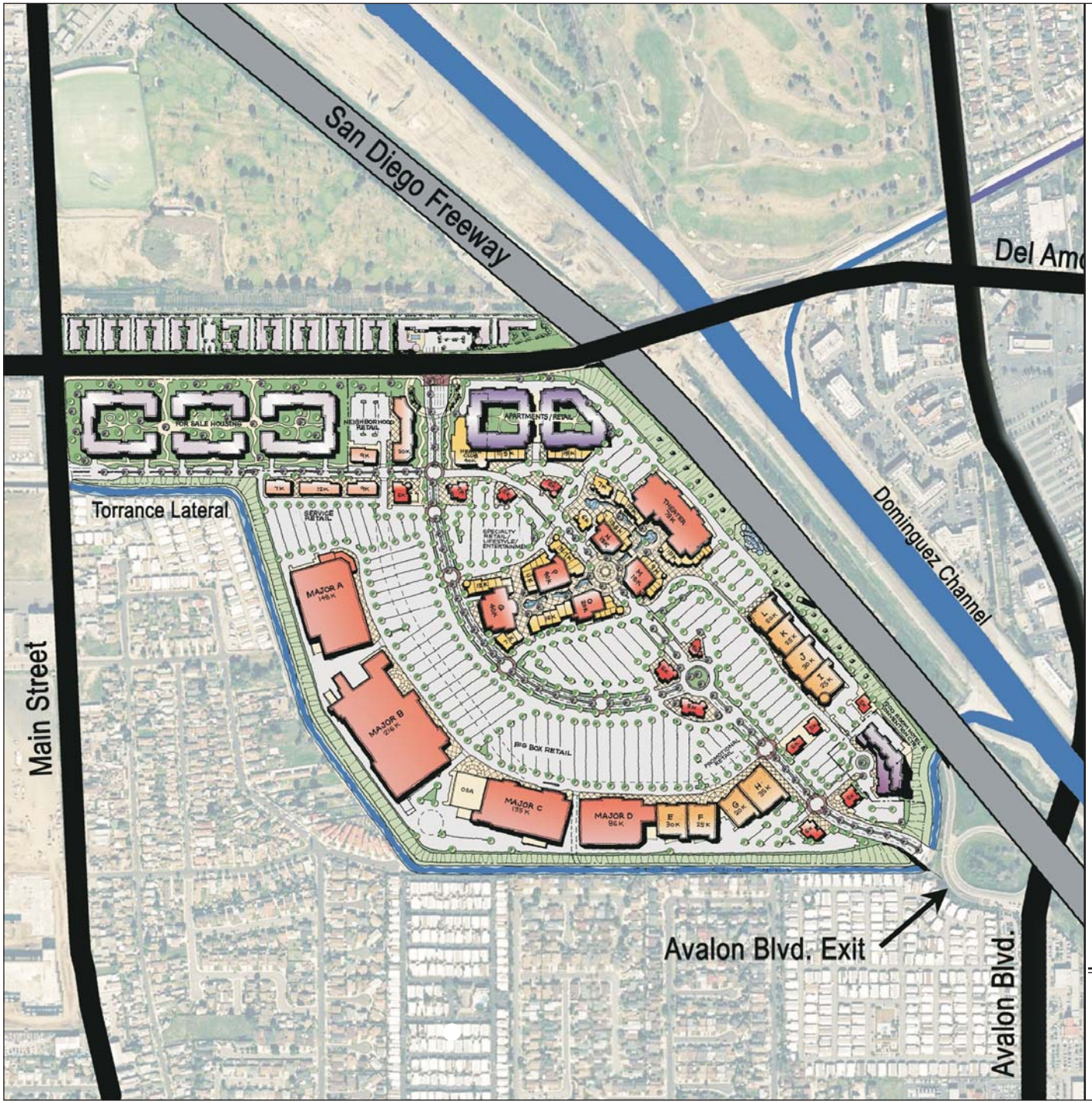
- **Development District 2** is located south of District 1 and along the Project site's freeway frontage. It is the largest of the Development Districts, occupying a majority of the site, and it includes a total of 126 acres. Land uses proposed in Development District 2 include hotel, restaurant and other commercial uses.

- **Development District 3** is located just north of Del Amo Boulevard. This Development District is 11 acres in size and includes commercial and residential uses.

While the precise number, size, shape, and location of buildings have not been determined, a Conceptual Plan for the site has been prepared to illustrate the general nature of the development, and provide an indication of the type of development that would result under the Specific Plan regulations. The Conceptual Plan is illustrated in Figure 4 on page 76 and summarized in Table 3 on page 77. The Conceptual Land Use Plan and its Development Program has been developed for illustrative purposes only. They provide a reasonably probable illustration of how the proposed set of land uses may be developed on the Project site.

(1) Specific Plan

The proposed Project would be implemented through the provisions of the Carson Marketplace Specific Plan. In addition, the Specific Plan regulations pertaining to Development



Proposed Project Components

Development District One

Commercial:	150,000 square feet
Residential:	1,300 units

Development District Two

Commercial:	1,595,125 square feet
Hotel:	200,000 square feet (300 rooms)

Development District Three

Commercial:	50,000 square feet
Residential:	250 units

Total

Residential:	1,550 units
Hotel:	200,000 square feet (300 rooms)
Commercial:	1,795,125 square feet

N

0 1,000 Feet

Scale in approximate feet

Source: The Planning Center, 2005

Figure 4
Proposed Conceptual Plan

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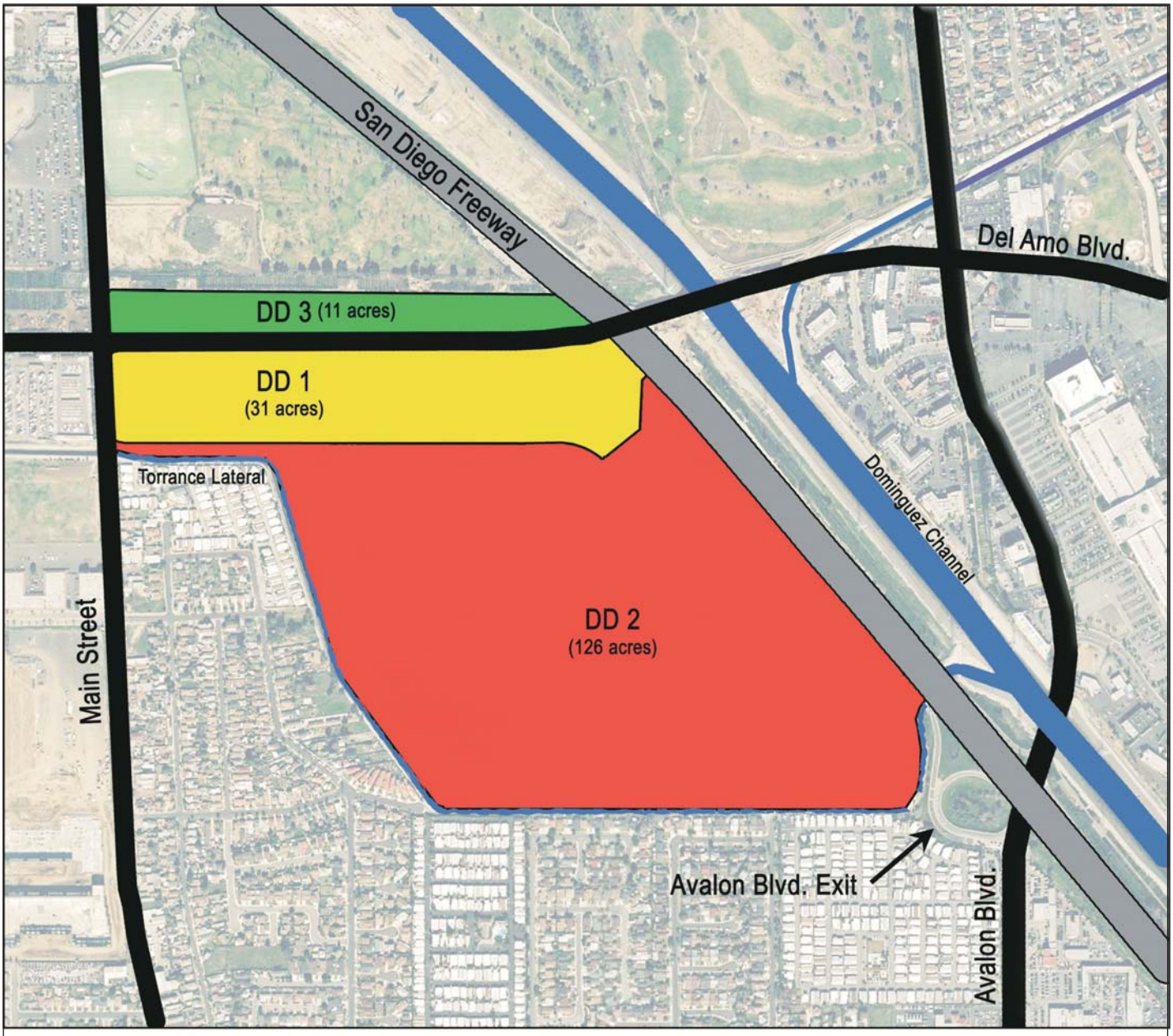
Source: The Planning Center, 2005



LEGEND

——— Development District Boundary

DD Development District

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0 1,000 Feet

Scale in approximate feet

Source: The Planning Center, 2005

Figure 3
Development Districts

Table 3

Conceptual Development Program

Development District	Acres	Residential Units	Commercial Square Footage	Hotel Rooms	Maximum Density	Conceptual Plan—Potential FAR at Buildout (Residential Plus Commercial) [a]
Development District 1	31	1,300	150,000	—	Residential: 60 du/ac	2.72
Development District 2	126	—	1,795,125	300		
Subtotal Districts 1–2	*157*	*1,300*	*1,945,125*	*300*		
Development District 3	11	250	50,000	—	Residential: 60 du/ac	0.94
Total	**168**	**1,550**	**1,995,125**	**300**	**Commercial: 0.33 FAR**	

[a] *Combined, total development per land use arrangement presented in Figure 4.*

Source: The Planning Center, February 2005.

District 3 are proposed to be implemented by an overlay zone to the existing Commercial Regional (CR) zone. As such, all of the regulations and development standards for the CR zone as set forth in Chapter 1 (Sections 9131.1 through 9138.71) of the Carson Municipal Code also apply to Development District 3. Thus, the property owner of Development District 3 may choose to process a development permitted pursuant to either the regulations and development standards for the CR zone or the regulations and development standards for the Carson Marketplace Specific Plan. The development summary described in Table 3 for Development District 3 reflects the development intensities and types under the Applicant's proposal to develop this portion of the Project site pursuant to the Carson Marketplace Specific Plan. If the property owner of District 3 chooses to pursue a development program different than the one analyzed in this Draft EIR, additional CEQA review may be required

(a) Development and Design Principles

The Carson Marketplace Specific Plan sets forth the types of development that would be permitted to occur within the Project site as well as the development guidelines under which this development would occur. The Specific Plan upon adoption by the City Council would replace the existing zoning on the 157-acre parcel south of Del Amo Boulevard and establish an overlay zone for the 11-acre parcel north of Del Amo Boulevard. Accordingly, the Carson Marketplace Specific Plan sets forth the parameters and limits with regard to permitted land uses, development density, development intensity, building height restrictions, setback standards, parking standards, and conditions for public art. The Specific Plan also sets forth Landscape Plans, Lighting Plans, and Signage Plans that would apply to future Project development.

The Specific Plan permits a variety of uses for the Project site in order to promote a vibrant mixed-use development. A proposed list of the permitted land uses that are set forth in the Specific Plan are identified in Table 4 on page 79. Table 5 on page 83 identifies Specific Plan standards for density/intensity, building setbacks, encroachments, walkways/parkways, open space and parking. The Specific Plan height limits are shown in Table 6 on page 85.

The land uses proposed to occur within the three Development Districts are categorized into the following two categories: (1) Commercial Marketplace (CM) and (2) Mixed-Use Marketplace (MU-M). A brief description of the two proposed Specific Plan categories proposed for the Carson Marketplace is provided below under separate subheadings.

Commercial Marketplace (CM)

Land uses within the Commercial Marketplace category are intended to contribute to the City's regional shopping areas, as well as the other major retail areas in the City. The uses that would be located within the Commercial Marketplace category are intended to serve a broad population base and offer a wide range of services to both the community and the region.

Table 4

Permitted Uses

Use Category	Typical Permitted Uses	Development District 1	2	3
Regional Commercial				
Food Sales and Service	Dog or cat food catering (retail only)	P	P	P
	Food catering (only direct retail sales or retail distribution)	P	P	P
	Food store – grocery, fish, meat, fruits and vegetables, retail bakery, pastry, candy, health food, take-out food, tobacco shop	L	L	L
	Poultry shop (no live poultry or slaughtering)	P	P	P
	Restaurant (including refreshment stands, soda fountain, drive-in or drive-through restaurants)	P	P	P
Health Services	Medical or dental laboratory (as an incidental use in a medical/dental office building or clinic)		L	
	Medical or dental office or clinic, public health center	P	P	P
	Optical services (for the fitting, grinding or mounting of eyeglasses)	P	P	P
	Pharmacy	P	P	P
Office	Business, professional, financial, insurance, real estate, utility payments, telegraph, telephone answering service, messenger service, advertising, newspaper or publishing (no printing), ticket agency, travel agency, employment agency, collection agency, detective agency, security service, bail bondsman	P	P	P
	Wholesale business, manufacturer's agent, broker (no storage or deliveries other than samples.)		L	
Public Assembly	Arcade, drive-through, pool hall, night club		C	
	Auditorium, meeting hall, wedding chapel	P	P	P
	Community center, lodge hall, private club	P	P	P
	Indoor theater (motion picture or live stage)		P	
	Outdoor theater (live stage, not a drive-in)	C	C	C
Public and Quasi-Public Uses	Church, temple, or other place of religious worship[a]	C	C	C
	Fire station, police station, post office, library, museum	P	P	P
Retail Sales and Service	Animal services – dog clip and wash, veterinary office or clinic (no animal hospital or kennel)	P	P	P
	Barber shop, beauty shop, reducing salon, manicure parlor	P	P	P
	Big box retail (stand-alone retail stores with 50,000 square feet or more)		P	

Table 4 (Continued)

Permitted Uses

Use Category	Typical Permitted Uses	Development District 1	2	3
	Copying, addressographing, mimeographing, photostating, instant printing, blueprinting, silk screening, photography, picture framing	P	P	P
	Clothing services – laundry or dry cleaning agency, self-service laundry or dry cleaning, hand laundry, sponging and pressing, tailor, dressmaker, seamstress, shoe repair	P	P	P
	Fix-it shop		P	
	Furniture redecorating, restoration and upholstering; glass repair, installation or glazing; screen repair; plumbing shop; lawnmower sharpening		P	
	Gas Station	C	C	C
	Hotel		P	
	Indoor mini-mart, auction house[b]		C	
	Locksmith, watch repair, small appliance repair, radio and television repair, bicycle repair	P	P	P
	Parcel delivery service	P	P	P
	Photo-finishing, film developing	P	P	P
	Secondhand store, pawn shop		C	
	Specialized stores for apparel, household supplies, and business supplies, promotional retail, and service retail	P	P	P
Studios	Costume design, interior decoration, photography, writing, drama, dance, music, arts and crafts (including stained glass)	P	P	P
	Motion pictures – indoor[c]		C	
	Radio, television, recording	P	P	P
Mixed Use				
Mixed-Use	At-grade apartments, townhomes, condominiums			P
	Elevated apartments, townhomes, condominiums	P		P
	Vertically integrated uses: Supermarket, food store, variety store, service retail, restaurant, health club/gym	P		P
	All uses permitted in Regional Commercial except theaters and stand-alone stores greater than 50,000 square feet	P		P
Parking				
Automobile Parking Structure	Parking lot, parking building/structure, shared parking	P	P	P

Table 4 (Continued)

Permitted Uses

Use Category	Typical Permitted Uses	Development District 1	2	3
	facilities			
Accessory Uses[d]				
Public Park or Playground	Park, playground	P	P	P
Private Recreational Facilities	Swimming pool, tennis court, skating rink	P	P	P
Passenger Station	Bus station, rail station, taxi stand	LD	P	LD
Alcoholic Beverage Sales and Service	Alcoholic beverage sales and service in conjunction with a restaurant, department store, or supermarket	LD	P	LD
	Alcoholic beverage sales and service in conjunction with a variety store, drug store, take-out food, mini market, liquor store, bar, billiards, indoor theater	C	C	C
Communication and Utilities Stations	Transmitter, receiver, or repeater station; gas distribution, control, or measurement station; electric distribution substation; pumping station	C	C	C
Storage[e]	Space and facilities to house the inventories, supplies and equipment needed to conduct permitted activities.	P	P	P
Recycling	Small collection recycling facility	L	P	L
Temporary Uses				
Signage	Subdivisional directional sign, grand opening sign	LD	LD	LD
Offices	Contractor office, Real estate office, election campaign office, construction storage	L	L	L
Outdoor Sales	Sidewalk, parking lot, and tent sales; Christmas tree sales; pumpkin sales	LD	LD	LD
Outdoor Festivals	Farmer's market, carnival, pony rides, swap meet; flea market		CC	
	Fireworks stand	P[f]	P[f]	P[f]
Prohibited Uses				
Sexually oriented business establishments				
Vehicle sales and service				

[a] *CMC 9138.22 and 9182.25*

[b] *Ord. 86-763U, Section 1; Ord. 87-813, Section 1*

[c] *CMC 9133*

[d] *Accessory use: A use of the land or of a building which is: (1) clearly incidental and subordinate to the principal use of the land or building: (2) located on the same lot with the principal use: (3) not a generator of additional auto trips parking needs, or adverse environmental impacts: and (4) occupies equal to or less than ten percent of the area of the principal use. Where more than one accessory use occurs on a site, the total aggregate of all accessory uses must be equal to or less than ten percent.*

Table 4 (Continued)

Permitted Uses

Use Category	Typical Permitted Uses	Development District 1	2	3

[e] *No on-site storage shall be allowed in temporary or permanent cargo containers.*
[f] *Fireworks stands are permitted per Section 3101.0 – 3101.10 of the Carson Municipal Code.*

Source: The Planning Center, August 2005.

Businesses in this designation include major department stores, promotional retail type stores, lifestyle and entertainment specialty shops, hotel, and restaurants, as well as highway-oriented and smaller neighborhood retail and service uses. The Commercial Marketplace category applies to all of Development District 2.

Mixed-Use Marketplace (MU-M)

The "Mixed Use Marketplace" category provides opportunities for combining housing with smaller commercial services either within a single building or in separate buildings that would be located in close proximity to one another. Notwithstanding, development within the MU-M category does not, however, require a mix of uses and development can consist entirely of either residential or commercial uses. This category applies to all of Development Districts 1 and 3.

The densities and intensities of uses would vary within this Specific Plan category and would ultimately be based on the actual uses proposed. All of the uses allowed in the Commercial Marketplace category as described above, are also permitted within the MU-M category except for stand-alone retail stores greater than 50,000 square feet of floor area. Furthermore, the MU-M category does not allow business park/limited industrial uses, except for the types of commercial uses described in Table 4 on page 79. Residential densities within the MU-M category are proposed to be up to 60 dwelling units per acre.

(b) Circulation and Parking

(i) On-Site Circulation

The Project site would be accessed at the following four locations; Main Street, Del Amo Boulevard (two locations), and the Avalon Boulevard/I-405 interchange. The Project's circulation plan for motor vehicles is shown in Figure 5 on page 86, whereas the circulation plan for bicycles and pedestrians is shown in Figure 6 on page 87. The Avalon Boulevard access to

Table 5

General Development Standards

TOPIC	MIXED-USE MARKETPLACE (MU-M)	COMMERCIAL MARKETPLACE (CM)
DENSITY/INTENSITY		
At-grade multi-family	60 du/ac max.	n/a
Elevated multi-family	60 du/ac max.	n/a
Vertical mix of uses[a]	1.50 min., 4.0 FAR max.	n/a
Commercial uses	--	--
Hotel[b]	1.0 FAR max.	1.0 FAR max.
Overall Project	0.33 FAR (commercial uses only)	
BUILDING SETBACKS[c]		
Perimeter Setbacks:		
Interstate 405	110 feet min.	110 feet min.
Del Amo Boulevard	10-20 feet min.[c]	n/a
Main Street	10-20 feet min.[c]	n/a
Northern Border[d]	20 feet min. from property line	n/a
Storm Channel	n/a	70 feet min. from property line
Internal Setbacks:		
Building to Stamps Drive at Del Amo Entry [e]	20 feet min from back of curb for buildings with base building height up to 28 ft. 30 feet min. from back of curb for buildings with base building height greater than 28 feet.	n/a
Commercial building to Loop/Corridor Roads	10 feet min. from the back of curb	n/a
Residential building to Loop/Corridor Roads	15 feet min. from the back of the sidewalk	n/a
Commercial building to commercial building (if detached)	20 feet min. from building to building	n/a
Residential building to commercial building or parking structure (if detached)	25 feet min. from building to building	n/a
ENCROACHMENTS[f]		
Encroachments	See Municipal Code §9126.29	See Municipal Code §9136.29
WALKWAYS/PARKWAYS		
Internal	5 feet min.	5 feet min.
Adjacent to:		
Corridor Road	8 feet min. with at least 3 feet of landscaping	8 feet min. with at least 3 feet of landscaping
Loop Road	5 feet min.	8 feet min. with at least 3 feet of landscaping
Multipurpose Path (See Figure 6).	8 feet min. of sidewalk plus an addition 4 feet of landscaping.	8 feet min. of sidewalk plus an addition 4 feet of landscaping.
OPEN SPACE[g]		
Private Open Space	60 square feet min. per unit, with a minimum dimension of 5 feet in any direction.	--
Common Open Space [h]	300 square feet min. per unit in District 3, with a minimum dimension of 10 feet in any direction	--

Table 5 (Continued)

General Development Standards

TOPIC	MIXED-USE MARKETPLACE (MU-M)	COMMERCIAL MARKETPLACE (CM)
	200 square feet min. per ownership unit in District 1, with a minimum dimension of 10 feet in any direction 150 square feet min. per rental unit in District 1, with a minimum dimension of 10 feet in any direction	
Public Plazas	--	Each commercial use shall provide or contribute towards public plaza space equal to 20 percent of the total square feet (GLA) of building. This standard applies only to those buildings within the Lifestyle/Entertainment areas.
PARKING		
Auto Parking [i]	Residential: 0 bedrooms (not more than 450 square feet.) – 1 space per unit; 1 bedroom, and zero bedroom units that are larger than 450 square feet, – 1.5 spaces per unit; 2 bedrooms or more – 2 spaces per unit. Guest parking – 1 space per 4 units Commercial: 5 spaces per 1,000 gross leasable area, except: Theatre = 1 space/3 seats Hotel = 1.5 space/room	5 spaces per 1,000 gross leasable area, except: Theatre = 1 space/3 seats Hotel = 1.5 space/room
Preferential Auto and Bicycle Parking	Per City Code Section 9165.3	Per City Code Section 9165.3

[a] *The FAR for vertically-integrated mixed-use is to be calculated using the total square footage of all residential and commercial uses, divided by the total area of the parcel. The 1.50 minimum FAR applies only to projects that incorporate residential uses.*

[b] *Hotel FAR is to be calculated based upon a 5 acre site.*

[c] *Development north of Del Amo Boulevard shall not be closer than 10 feet from Del Amo Boulevard or Main Street, as measured from the back of sidewalk. Development south of Del Amo Boulevard shall not be closer than 20 feet from Del Amo Boulevard or Main Street, as measured from the back of the sidewalk.*

[d] *The "Northern Boundary" refers to the northern boundary of Development District 3.*

[e] *Standard applies to buildings adjacent to Loop Rod between Del Amo Boulevard and the Corridor Road (see Table 6 for base building height standards.*

[f] *Outdoor dining, benches, outdoor displays, or any other ancillary uses as approved by the Planning Manager may encroach into the 15 foot sidewalk area a maximum of 8 feet from the building frontage.*

[g] *At least 40 percent of common and private open space must be usable for recreation, which is defined as open space with an average gradient of not more than five percent and excludes sidewalks within the public right-of-way and landscaped areas other than turf. Usable open space may include, but is not limited to, balconies, terraces, roof gardens, children's playgrounds, pools, clubhouses, and landscaped setbacks.*

[h] *Common open space includes accessible walkways, landscaping areas, and non-private courtyards. Common areas such as clubhouses, pools, and spas can satisfy up to 50 percent of the common open space requirement.*

[i] *Shared parking will be allowed per the Planning Manager's approval and subsequent to a parking study if deemed necessary by the Planning Manager.*

Source: The Planning Center, October 2005.

Table 6

Building Height Development Standards

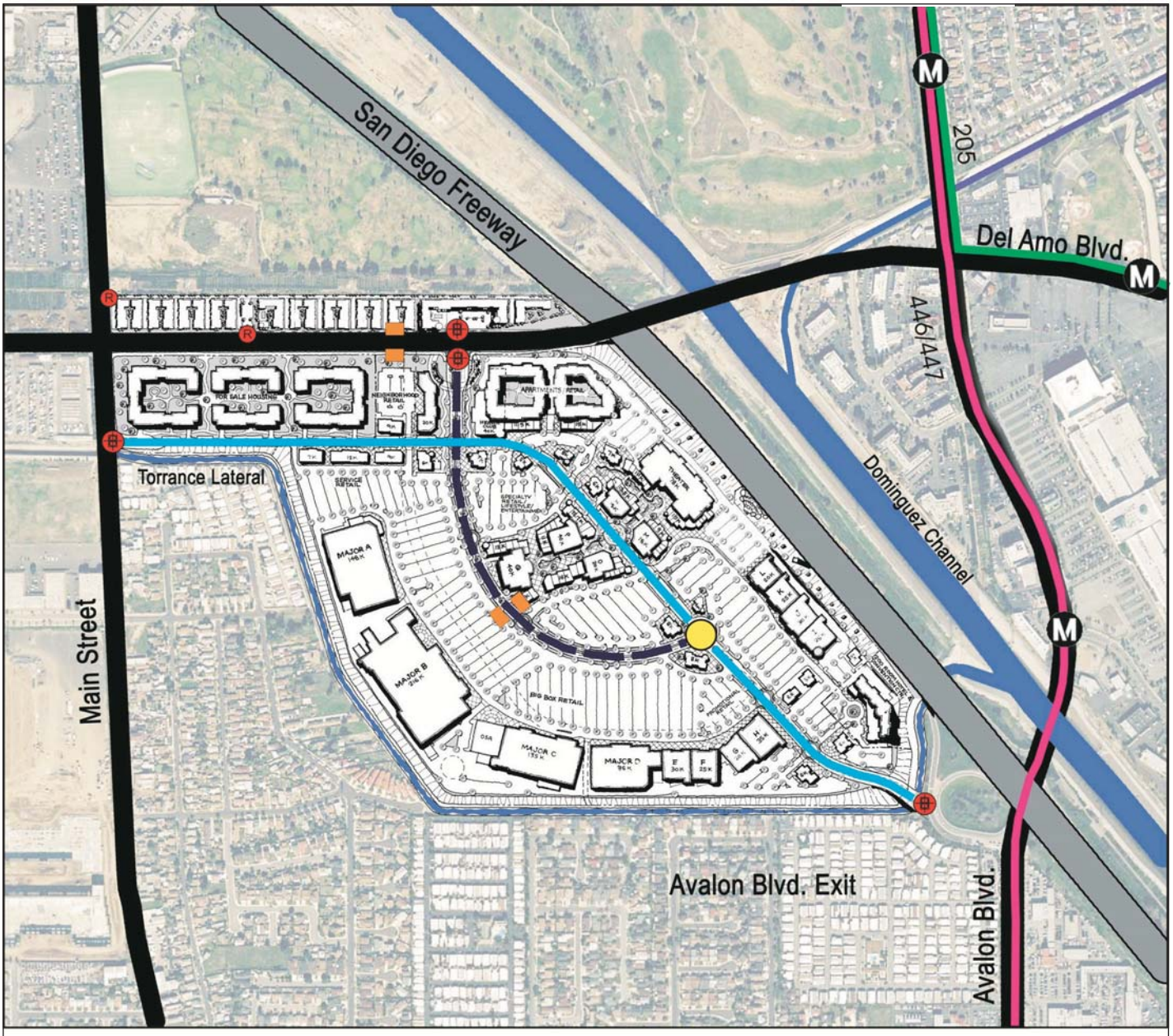
USE	AREA	Base Building	With Secondary Features [c]		With Major Features [c]	
		Max. Height	Max. Height	Max. Width of Feature (% of elevation length)	Max. Height	Max. Width of Feature (% of elevation length)
RESIDENTIAL						
Multi-family [a,b]	n/a	75 feet	75 feet	n/a	75 feet	n/a
COMMERCIAL						
Retail	>100,000 SF	32 feet	42 feet	30%	52 feet	15%
Retail	60,000-100,000 SF	30 feet	36 feet		48 feet	20%
Retail	40,000-60,000 SF	28 feet	34 feet		44 feet	30%
Retail	15,000-40,000 SF	28 feet	34 feet		40 feet	40%
Retail	<15,000 SF	22 feet	26 feet		30 feet	50%
Theater	n/a	60 feet	70 feet		80 feet	20%
Hotel	n/a	75 feet	79 feet		85 feet	15%
MIXED-USE						
Vertical mix of uses: two-story office/retail over at grade retail	10,000-30,000 SF	35 feet	40 feet	30%	45 feet	30%
Other vertical mix of uses[a,b]	n/a	75-85 feet	75-85 feet	n/a	75-85 feet	n/a
PARKING						
Parking Structure	n/a	45 feet	45 feet	n/a	45 feet	n/a
ACCESSORY STRUCTURES						
Accessory Storage		maximum height to be determined according to standard for principal use				

[a] *The maximum height of any living space in residential structures cannot exceed 74 feet, 11.9 inches, so as not to be classified as a high-rise structure as defined by Los Angeles County Fire Department regulations.*

[b] *The maximum height for vertically-mixed use buildings is 85 feet when located within 1,000 feet of the project's easterly border (loosely defined as the 405 Freeway) as measured along the southern edge of Del Amo Boulevard. For buildings along the northern edge of Del Amo Boulevard or beyond the 1,000 foot area described above, the maximum height is 75 feet.*

[c] *Major and secondary features are building elements that are added to building faces to provide architectural interest, without adding to interior floor area. Major features are more prominent than secondary features, and are often used to focus visual attention with a vertical element that rises above the base building.*

Source: The Planning Center, October 2005.



LEGEND

- Lenardo Drive
- Stamps Drive
- Signalized Access
- Right-In/Right-Out Access
- Roundabout
- MTA Bus Route 205
- MTA Bus Route 446/447
- Potential Bus Pullout

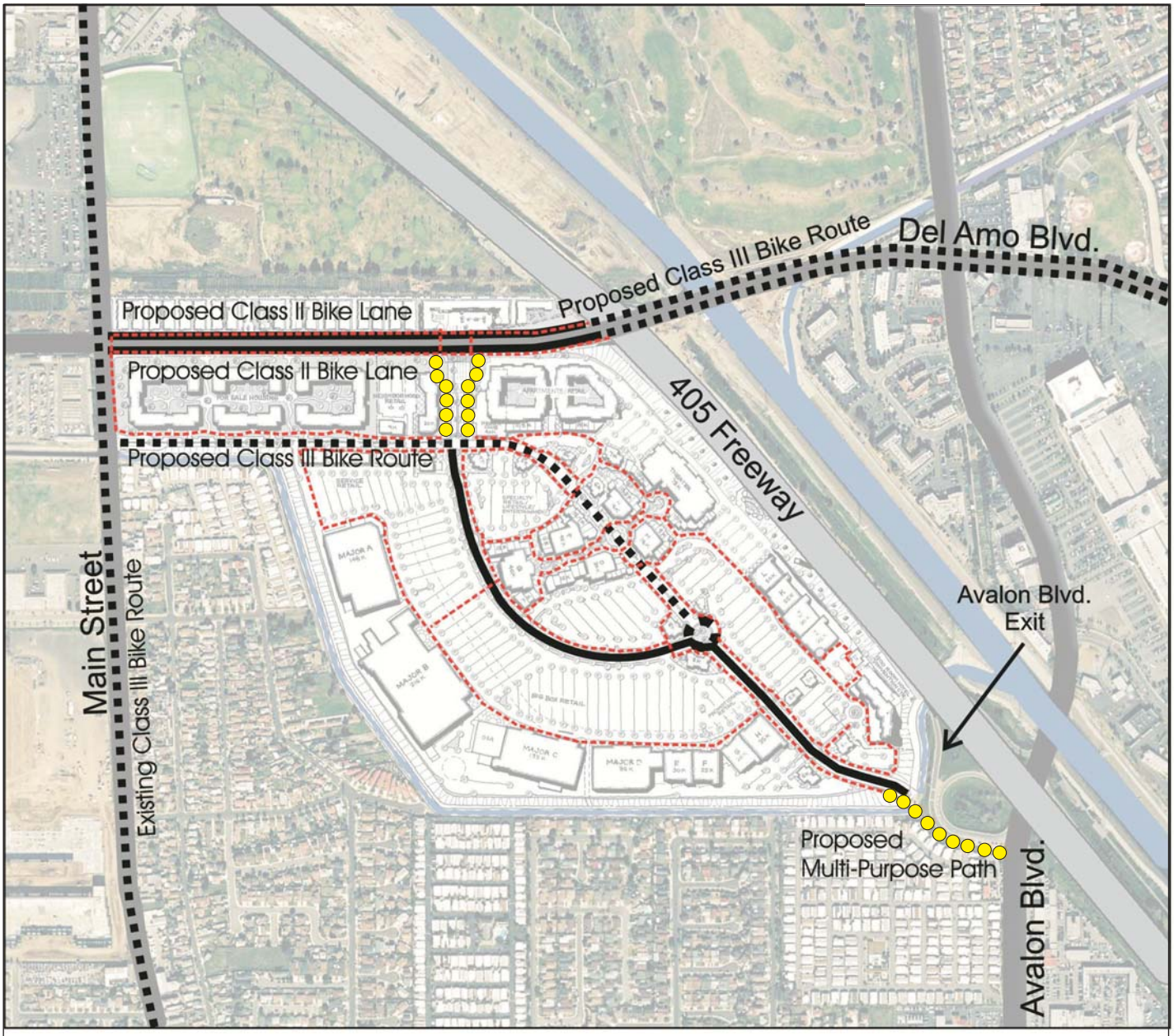
PCR

0 1,000 Feet

Scale in approximate feet

Source: The Planning Center, 2005

Figure 5
Vehicular Circulation Plan



LEGEND

- Pedestrian Path
- Proposed Multi-Purpose Path (Class I Bike and Pedestrian)
- Class II Bike Lane (Proposed)
- Class III Bike Route (Existing and Proposed)

PCR

0 1,000 Feet
Scale in approximate feet

Source: The Planning Center, 2005

Figure 6
Proposed Bicycle and Pedestrian Circulation

and from the I-405 Freeway access point is anticipated to occur via full on-ramps and off-ramps for both northbound and southbound travel on the Freeway.

Internally, the circulation plan includes two primary routes, which are referred to as the Corridor Road and the Loop Road. These roads are shown on the conceptual plan as falling in approximately the same location as the existing on-site roadways, Stamps Drive and Lenardo Drive. With Project development, the existing roadways would be vacated, and replaced by private roads, and may vary slightly from the existing alignments. Generally, the Corridor Road would circulate directly through the Project site connecting the Main Street entrance with the Avalon Boulevard/I-405 entrance. The Loop Road would begin and end at the Corridor Road in a semi-circular fashion.

The on-site circulation system includes a traffic circle ("roundabout") in the south-central portion of the Project site. This internal, three-way intersection would be well served by a traffic circle to facilitate traffic movement at a location in which signalization or stop-signs would reduce traffic flows. It is primarily a design feature, which would have special paving and landscaping to indicate a change in vehicular flow pattern.

External bicycle access to the Project site would primarily occur via Class II (separate lanes) and Class III routes, along Main Street and Del Amo Boulevard. Pedestrian access to the Project site would also occur via sidewalks on those same streets. Multipurpose paths (i.e., for pedestrians and bicycles) are proposed both at the project's Del Amo entrance and from Avalon Boulevard into the Project's southeastern entrance. At the Avalon Boulevard entrance, the multipurpose path would run alongside the roadway and would be divided for safety. Multipurpose paths provide for concurrent, side-by-side use by both bicyclists and pedestrians and are similar to Class I bicycle paths (although multipurpose paths are wider to allow for side-by-side use). Internally, bicycle circulation would be provided along the Loop Road via Class II bicycle lanes and along the Corridor Road via a Class III bicycle route. Pedestrian circulation would be provided throughout the Carson Marketplace via sidewalks and pathways. The routing of pedestrian and bicycle circulation is conceptually shown in Figure 6 on page 87. The intent of the Project's proposed pedestrian and bicycle routes are to provide maximum connectivity for pedestrians and bicyclists between the diverse uses within the Project site.

(ii) Parking

The proposed Project would include parking facilities to meet the parking demands generated by the proposed development. Parking would be provided through a combination of at-grade, surface parking lots, and parking structures that would be a maximum of 45 feet in height. As shown in Table 5 on page 83, parking for proposed retail uses would be provided at the rate of 5 parking spaces for each 1,000 sq.ft. of gross leasable floor area (GLA) or, if theater uses are built, parking would be provided at the rate of one parking space for every three theater seats. Hotels would include parking at a rate of 1.5 spaces per hotel room. Residential

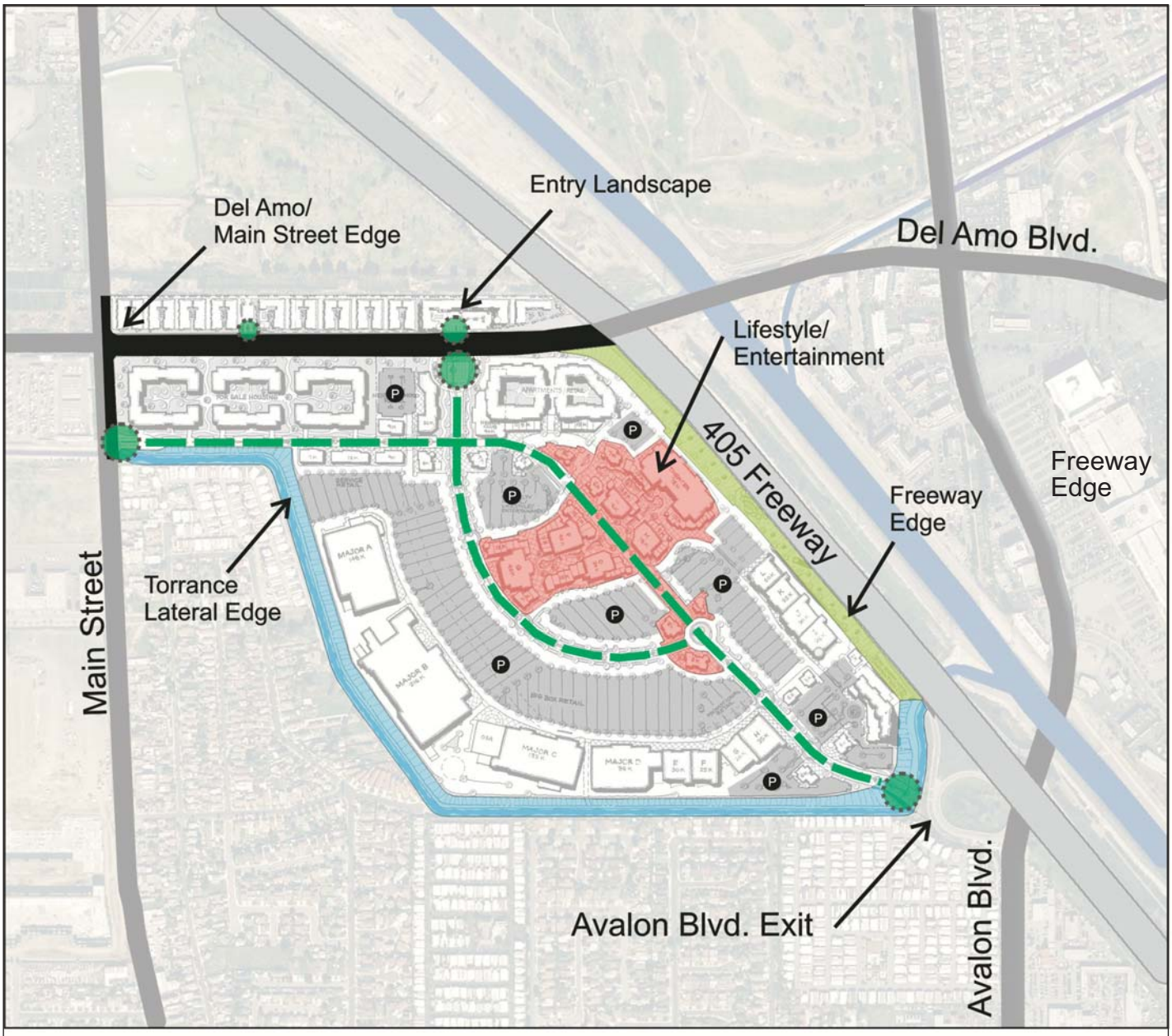
development would include parking at a rate that varies from 1.25 to 2.25 spaces per unit depending on the number and size of bedrooms in the individual units.[10]

Implementation of the proposed Project may also include the use of shared parking facilities to meet the Project's parking needs in the most efficient manner. Shared parking efficiencies can occur when the respective parking demands of two or more land uses do not coincide. For example, the parking demand for retail uses peaks in the mid-afternoon, while the parking demand for restaurants peaks in the evening. Further, mixing compatible and complementary land uses within the Project site can reduce the number of car trips and related parking, because occupants are more likely to find it convenient to walk to nearby services. Based on the provisions of the Carson Marketplace Specific Plan, the implementation of a shared parking plan is subject to the approval of the Planning Manager with, if necessary, submittal of a parking study by a qualified parking or traffic consultant, planner, or civil engineer, which substantiates the basis for concluding that the Project's parking demand would be met. The analysis would include, but not necessarily be limited to, evidence that there is no substantial conflict or overlap in the principal operating hours of the buildings or uses for which the shared parking facilities are proposed and that any reduction in parking shall not decrease the total number of parking spaces below the level necessary to meet the collective peak parking demand for all participating uses.

(c) Landscaping Plan

In recognition of the importance of landscaping for a project as large as what is proposed, the Carson Marketplace includes a landscaping plan that includes several landscaping areas that have unique qualities and/or goals to address the diversity of conditions that are present throughout the Project site. At this time these landscaping areas are conceptual in nature and would be refined during the review process for individual development proposals. The following is a description of both the general landscape guidelines, which apply to the entire Project site, and landscape themes, which apply to specific landscape areas. The landscape guidelines identify the general landscape constraints, palettes, and root systems. The intent of these guidelines is to keep irrigation to a minimum to conserve water and avoid any impact on the shallow soils and the landfill cap. The specific landscape themes include the following areas: Del Amo Boulevard and Main Street edges, entries, freeway edge, lifestyle and entertainment component, internal streetscape, parking lot, parking structure edge, and channel-adjacent slopes. The location of these landscaping areas in the context of the conceptual plan for the proposed Project is presented in Figure 7 on page 90.

[10] *Parking for residential uses would be provided at the following rates: 0 bedrooms (not more than 450 square feet.) —1 space per unit; 0- and 1-bedroom units that are larger than 450 square feet—1.5 spaces per unit; 2 bedrooms or more—2 spaces per unit. Guest parking—1 space per 4 units.*



LEGEND

- Entry Landscape
- Interior Streetscape
- Torrance Lateral Edge
- Freeway Edge
- Lifestyle/Entertainment
- Parking Lot
- Del Amo/Main Street Edge

PCR

0 1,000 Feet
Scale in approximate feet

Source: The Planning Center, 2005

Figure 7
Landscape Plan

(i) General Landscape Guidelines

Due to the sub-surface constraints posed by the site, trees would generally not be planted in the soil, unless there is reasonable certainty that the proposed tree and its location are determined by the Department of Toxic Substances Control (DTSC) to not pose a threat to the landfill cap.

For plantings that would be directly in the soil, the landscape palette for the Project site would consist primarily of small to medium shrubs, members of the *Gramineae* (grass) family, and other plants with fibrous root systems, bulbs, culms or rhizomes. Taller species with fibrous and/or surficial root systems include, among others, members of the Palm and Bamboo families.

The taller species of trees that have a typical dendritic root structure would be containerized either above or below grade. For containerized trees below grade, a sub-surface drainage conveyance system would be necessary to convey drainage off site. Although Pampas Grass (*Cortaderia sellowiana*) and Giant Reed (*Arundo donax*) are plants that have fibrous root systems, they are invasive exotic plants and their use is strongly discouraged due to their ability to escape and naturalize off site. The plant palette for the Project site includes, but is not limited to, Bob Perry's *Landscape Plants for Western Regions*. These plants are either native or adapted to the Southern California climate and can survive with limited amounts of water. The intent is for the irrigation of the landscape to be kept to a minimum to conserve water and to avoid the impact that irrigation may have on the shallow soils and the landfill cap. Therefore, drip irrigation and a native plant palette is encouraged to the maximum extent feasible.

(ii) Landscape Themes

The Carson Marketplace has several landscape theme areas that have unique qualities or goals to address the diversity of edge conditions (i.e., areas along the perimeter of the Project site) and planned uses. These themes are conceptual in nature and, therefore, are not precise and would be clarified further during plan submittal. The following is a description of the landscape themes for various areas within the Project and a brief discussion of their design intent. For a conceptual delineation of these themed areas, see Figure 7 on page 90.

a) Del Amo Boulevard and Main Street Edges

The Del Amo and Main Street edges would have landscaped setbacks to buffer the proposed residential and/or commercial uses from the street. These edges would be designed to coordinate with the landscaping themes in the Carson Street Conceptual Visualization and the Home Depot Center in order to connect the Carson Marketplace with these two existing districts and generate a comprehensive image for this area.

b) Entries

There would be six points of access (see Figure 7 on page 90). These points of access would have landscaping that identifies the entries and clearly separates them from the surrounding context. Entries would typically have species that differ in height, color, and texture from the streetscape treatment to bring attention to these points of entry.

c) Freeway Edge

This zone would primarily consist of the top of the slope and slope bank that parallels the western edge of the I-405 Freeway and would be designed to work in conjunction with the signage and building façades to bring attention to the Carson Marketplace project. The channel-adjacent slope consists entirely of native soil, so it does not have the physical constraints that prevent planting trees in the soils that occur elsewhere on the Project site.

d) Lifestyle & Entertainment

The Lifestyle and Entertainment component would make up a substantial portion of the central core of the Project site. This zone would have a variety of plants from small to very large that would primarily be containerized in large and small pots, raised planters, and trellises.

e) Internal Streetscape

The internal streetscape consists of entry drives as well as the Corridor and Loop Roads (see Figure 5 on page 86). These form a hierarchy of streetscapes with the opportunity to design them together as an integral element of the site's overall landscaping plan. It is anticipated that these internal streets, including the roundabout at the intersection of the Corridor and Loop Roads, would typically have landscaped medians and edges. There would be continuous shrub and ground cover plantings in the medians and edges, with vertical landscape and/or hardscape elements at a minimum of every 50 feet along the edges.

f) Parking Lot

The parking lot areas would achieve, Project-wide, a minimum of 5 percent landscape coverage. The landscaping may consist of tall vertical elements, such as palms or low-lying shrubs and/or groundcovers, but would not exceed 3 feet in height at maturity in order to keep sight distances clear for vehicles. Landscaping in the parking lot areas may be grouped or focused to facilitate stormwater uptake and filtration.

g) Parking Structure Edge

If parking structures are visible to adjacent residential uses, the edge of the structure(s) would require 50 percent coverage of visible vertical surfaces with landscaping. This standard can be achieved through planters along the visible edge of the structure planted with cascading vines, through a vertical trellis surface with vines planted at each parking level, or by other means.

h) Channel-Adjacent Slope

There would be a slope bank along the southern and western edges of the Project that would buffer the immediately adjacent access road that serves the Torrance Lateral. The intent of the landscaping for this zone would be to improve upon the existing unimproved condition and stabilize slopes with minimum maintenance and water requirements, and soften the development edge, as viewed from outside the southern and western edges of the Project site. This zone would likely consist of native and adapted drought tolerant trees, shrubs, and groundcovers. The channel-adjacent slope consists entirely of native soil, so it does not have the physical constraints that prevent planting trees in the soils that occur elsewhere on the Project site.

(d) Signage Program

The Specific Plan limits number and size of large signs on the Project site. The limits provide for a hierarchy of signs with varied functions throughout the Project site. Taller signs would be located along the I-405 Freeway, where, two Freeway Icon signs (75 feet high) and 10 Freeway Monument signs (35 feet high) would be provided. Other signs would be more limited in size with four Primary Entry Monument signs limited to 15 feet in height and two Entry Arch sites limited to 25 feet. Main Street Entry and North Del Amo Entry Monument signs would be limited to 14 feet and 8 feet respectively. These signs would be located a selected locations, dispersed along roadways within the Project site. The types, number and size of the signs that could occur on the Project site are shown in Table 7 on page 94.

(e) Lighting Program

The proposed Project would include artificial light sources that would be consistent with a set of lighting guidelines/standards. These standards are intended to ensure that lighting intensity is sufficient for the performance of site activities, yet constrained so as to maintain an attractive Project appearance and avoid adverse effects on off-site locations.

Table 7

Sign Standards

IGN TYPE	Maximum Number	Maximum Sign Dimensions		NOTES
		Height	Width	
Freeway Icon	2	70 feet [a]	25 feet	The base width will be 15-25 feet. If the base is greater than 15 feet, the sign will taper up to 15 feet at top. The attached reader board will be a maximum 16 feet high x 20 feet wide. The top of the reader board will be located no higher than 40 feet above the base of the sign. If only one Freeway Icon sign is constructed, it will most likely be located in a central location, between the Freeway Monument signage.
Freeway Monument	10	35 feet	20 feet	While the overall height is 35 feet, the sign is stepped up the slope along the freeway. Each sign consists of a sloped base - 5 feet high x 20 feet wide, tenant signage up to 15 feet high x 20 feet wide, and a tower element that extends 15 feet above the tenant signage and is 3 feet in width.
Primary Entry Monument	4	15 feet	20 feet	While the overall height is 15 feet, the sign consists of tenant signage up to 10 feet high x 20 feet wide and a tower element that extends 5 feet above the tenant signage and is 3 feet in width.
Entry Arch	2	25 feet	40 feet	Each arch consists of two towers, each with a dimension of 25 feet high x 3 feet wide. Each arch will span approximately 40 feet in width over the roadway. The banner element will be no greater than 3 feet in height x 40 feet in width.
Main Street Entry Monument	1	14 feet	8 feet	While the overall height is 14 feet, the sign consists of tenant signage up to 6 feet high x 8 feet wide and a tower element that extends 8 feet above the tenant signage and is 3 feet in width.
North Del Amo Entry Monuments	2	8 feet	12 feet	If the signage serves residential development, the sign dimensions shall be no greater than 6 feet high x 8 feet wide.

Note: Signage adjacent to the freeway will comply with Caltrans standards and requirements.
[a] *Height of Freeway Icon signs are measured from the adjacent freeway grades.*

Source: The Planning Center, October 2005.

Individual development standards have been developed for each application and type of use that would occur on the Project site. The standards would control the scale, brightness, direction, and shielding for all artificial lighting installations. They would restrict light intensity, prescribe light control methods, and limit light pole heights. The limits on pole heights and light

distribution have been set so that light would be controlled at the property perimeter and not have adverse impacts on adjacent properties.

(f) Public Art Program

Public art is an important component of the Specific Plan that would be used to create a connection between the public and on-site locations. Public art would contribute to creating aesthetic interest, help distinguish one on-site location from another by creating landmarks that are easily recognizable, and create a unique shopping, working, and living environment. Public art within the Project site is also intended to activate public spaces and make them more welcoming. By enhancing the overall quality of the Project site and giving it a unique character, public art would increase the value of the on-site development for all. Public art would be included at the Project site based on a value equal to one quarter of one percent (0.25 percent) of the total building costs (as measured by building permit valuations), excluding land, site development and remediation costs.

(2) Equivalency Program

The proposed Project would also include an Equivalency Program that would allow the composition of on-site development to respond to the future needs and demands of the southern California economy and changes in Project requirements. The Equivalency Program would provide flexibility for modifications to land uses and square footages within the Project site. This is achieved via a framework within which permitted land uses can be exchanged for certain other permitted land uses, so long as the limitations of the Equivalency Program are satisfied and no additional environmental impacts occur. As such, increases in permitted land uses can be exchanged for corresponding decreases of other permitted land uses under the proposed Equivalency Program. The conversion rates at which land uses can be exchanged with one-another is limited so as no to exceed the level of impacts identified in this EIR. In addition, under the Equivalency Program, a maximum of 1,550 residential uses can be developed and P.M. peak hour trips can not exceed 5,770.

Table 8 on page 96 provides a few examples of conversion rates that have been established for the proposed on-site land uses so as to limit traffic impact to levels below those identified in Section IV.C, Traffic and Circulation. A complete listing of the environmental impact thresholds including the trip conversion rates is provided in Appendix C. The trip conversion rates are expressed in terms of thousands of square feet of floor area for commercial uses, rooms for hotels, and dwelling units for residential uses. For example, Table 8 shows that owner and renter-occupied residential uses convert to shopping center uses at the rate of 0.13 and 0.20, respectively (i.e., one owner-occupied residential unit would convert to 130 square feet of retail uses). Furthermore, if these factors are applied to all of the Project's residential units, a total of 229,500 additional square feet of shopping center uses could be developed.

Table 8

Equivalency Matrix—Examples of Land Use Conversion Factors

(These examples are for illustrative purposes. See Appendix C for Additional Conversion Factors)

Land Use	Equivalency to 1 KSF of Shopping Center	Equivalency to 1 KSF of Regional Supermarket	Equivalency to 1 KSF of Quality Restaurant	Equivalency to 1 Room of Hotel	Equivalency to 1 DU of Apartments	Equivalency to 1 DU of Condominiums
Shopping Center	--	1.96 KSF	1.73 KSF	0.22 KSF	0.2 KSF	0.13 KSF
Supermarkets	0.38 KSF	--	0.73 KSF	0.09 KSF	0.09 KSF	0.05 KSF
Quality Restaurant	0.27 KSF	0.64 KSF	--	0.07 KSF	0.1 KSF	0.07 KSF
Hotel	2.61 Rooms	5.11 Rooms	7.94 Rooms	--	0.78 Rooms	0.55 Rooms
Apartments	N/A	N/A	N/A	N/A	--	0.62 DU
Condominiums	N/A	N/A	N/A	N/A	1.44 DU	--

Notes:

DU=dwelling units

KSF=1,000 square feet

The values in this table represent conversion rates from one land use to another. The values are based on conversions rates that would result in the same number of Project trips, with conversions of one use to another. The trip equivalency is based on the type of trip which would be the most restrictive: average daily trips (ADT), PM in-bound trips, or PM out-bound trips. Each type of trip may be more or less restrictive, depending on the travel characteristics of the two uses.

Source: PCR Services Corporation, 2005

The Equivalency Program would be implemented pursuant to the procedures set forth within the Carson Marketplace Specific Plan. In summary, the Equivalency Program would only be implemented at the request of the Applicant, or their successors in interest. The process for implementing the Equivalency Program starts with the Applicant, or their successors in interest, filing a request with the Planning Division of the Carson Development Services Department. This request would specifically identify the exchange in land uses proposed at that time and would be accompanied by information which demonstrates the requested exchange in land uses would not result in any environmental impacts that would be greater than those addressed within this EIR. After ministerial review, the Department would determine if the proposed exchange in land uses would or would not result in any environmental impacts that would be greater than those addressed in this EIR. Should the Department determine that the environmental impacts of the proposed exchange of land uses does not exceed the environmental impacts addressed in this EIR, the requested exchange in land uses would be granted. However, should the Department conclude that the proposed exchange in land uses would result in environmental impacts which are greater than those identified in this EIR, then additional environmental review would need to be completed prior to a decision by the Department to approve the requested exchange of land uses.

b. Site Remediation

The proposed Project, in addition to the proposed urban development program described above, includes the remediation of the former landfill on the 157-acre portion of the Project site that is located south of Del Amo Boulevard in compliance with the Final Remedial Action Plans (RAPs) . As indicated previously, due to the size and complexity of the site, DTSC divided the previous landfill site into two operable units. The Upper Operable Unit (Upper OU) consists of site soils, the waste zone above and within the Bellflower Aquitard, and the Bellflower Aquitard down to but not including, the Gage Aquifer. The Lower Operable Unit (Lower OU) is composed of the Gage, Lynwood, and Silverado Aquifers, and all other areas impacted by the geographic extent of any hazardous substances which may have migrated or may migrate from the aforementioned areas or from the Upper OU. The Remedial Investigation (RI), which was used to develop the Remedial Action Plan (RAP), characterized the hazardous substances on the site. Samples were collected from the following areas: (1) surface and run-off water; (2) soil cover; (3) waste zones; and (4) groundwater. The characterization documented the presence of landfill gases (methane and carbon dioxide) as well as volatile organic compounds (VOCs) and metals in the Upper OU. The primary chemicals of concern (COCs) in the groundwater are dissolved chlorinated and aromatic VOCs, primarily trichlorethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), 1,2-dichlorethane (1,2-DCA), vinyl chloride and benzene, toluene, ethylbenzene, and xylenes (BTEX). These VOCs were detected in localized areas within the Bellflower aquitard at concentrations above their respective maximum contaminant levels (MCLs).

As part of the development of the RAP, a Baseline Risk Assessment (BRA) was conducted to identify potential health risks to persons both on and off site as well as construction workers due to exposure to site-related chemicals under hypothetical future uses of the former landfill site. The BRA was conducted using conservative assumptions with regard to chemical concentrations and site conditions, as well as assuming no remedial activities were to occur. The analysis assumed unrestricted contact with the soil, waste and groundwater. The BRA concluded that excavation activities associated with 2-year construction/excavation activities and/or the development of the landfill into detached single-family homes built at grade would result in greater risks to human health compared to commercial/industrial development.

A Final Remedial Action Plan (Final RAP) was prepared for the Upper OU and approved by DTSC in 1995. The Final RAP is based on site-specific data gathered from the Remedial Investigation (RI) for the Upper OU. The Final RAP summarizes the findings of the RI, BRA and Feasibility Study (FS). The Final RAP describes the remedial alternative chosen for the Upper OU, how the Remedial Action Objectives are to be met, and the implementation schedule. The primary remedial action objective is to provide protection for human health and the environment. More specifically, objectives include: control surface water infiltration into the waste prism to reduce the generation of leachate; prevent direct contact with contaminated soil or

buried waste; capture, control, and treat on-site contaminated groundwater and the plume that is now off site (although not migrating); and control or prevent potential releases of landfill gas to the atmosphere.

Based on the RI and the BRA, the recommended remedial action includes: (1) containment of the impacted soil and buried waste through the use of a clay cap; (2) extraction and treatment of the groundwater; (3) collection and treatment of landfill gas extraction; and (4) long-term monitoring of the groundwater and landfill gases.

The Applicant is proposing to implement the RAP for the Upper OU, with refinements in certain technologies based on improvements in science and engineering since 1995, but with the same performance goals of controlling exposure pathways and migration. More specifically, the Applicant proposes to use a Linear Low Density Polyethylene (LLDPE) membrane cap rather than a clay cap for the waste prism.

In addition, alternative designs may be used to enhance gas control and groundwater treatment. The Landfill Gas Extraction and Treatment System would be similar to the system described in the RAP but would be improved by adding both horizontal and vertical wells within the site and not just around the landfill site boundary. The system would be designed to automatically collect condensate and deliver landfill gas to a treatment facility that would include a flare system. The Applicant may also propose a modification to the groundwater remedy approved in the RAP. The modification, if proposed, would use in-situ bioremediation to reduce the source of contaminants impacting groundwater in the Upper OU. There are a number of studies that need to be conducted to determine whether in-situ bioremediation would be an effective alternative or a supplement to extraction and treatment of groundwater, as required in the RAP. If the studies indicate in-situ bioremediation is likely to be effective, the Applicant would seek DTSC approval of the modification, as required under applicable regulations.

Changes in the design of the remediation would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment. Specific details on the remedial activities that would be implemented on the landfill site would be provided in the Remedial Design (RD). The RD would be prepared and submitted to DTSC prior to initiating any remedial actions. In addition, DTSC would formally approve any change in RAP requirements, as required under applicable regulations. The RAP was prepared for the proposed commercial and industrial Metro 2000 development and assumed no residential development. The proposed Project would include elevated residential development on a podium deck. With an elevated residential use, there is no potential for direct contact with surface soil in that there are no backyards or garden areas and living spaces are separated from any potential vapor intrusion areas. At a conceptual level, DTSC has indicated that elevated residential use is appropriate.

DTSC will require detailed plans in order to make a final determination that elevated residential use is protective of human health and safety. Just as with technology-driven changes in RAP requirements, DTSC would formally approve any change in RAP requirements related to elevated residential use, as required under applicable regulations.

The Final RAP for the Lower OU addresses the potential impact of groundwater contamination in the Upper OU on the Lower OU. Based on groundwater monitoring and chemical fate and mobility modeling data, in conjunction with remedial actions for the Upper OU, the risk posed to the Lower OU is considered to be minimal. The Final RAP for the Lower OU concludes that additional remedial investigation of the Lower OU is not currently warranted since no VOCs are present at detectable concentrations of VOCs or metals. However, because of the potential for contamination of drinking water or sensitive ecosystems and to satisfy the applicable regulatory provisions, a remedial action was deemed to be appropriate. Based on the analysis of alternatives in the Final RAP for the Lower OU, a groundwater monitoring program is the preferred alternative as it will provide the necessary controls to detect any future chemical impacts to the Lower OU. The groundwater monitoring will be conducted on a quarterly basis for a period of two years, followed by semi-annual monitoring for an additional two years, and annual monitoring every third year thereafter for up to 50 years. If any VOC is detected in the Lower OU during that period, the monitoring events will be increased to quarterly for a period of two years.

E. PROJECT CONSTRUCTION AND SCHEDULE

Construction and occupancy of the proposed Project is anticipated to be completed by the end of 2010. The principal Project construction activities include site preparation, implementation of the RAP (site remediation), off-site improvements, and site construction. While several construction activities are identified, it is anticipated that there would be some overlapping of activities in order to integrate remediation systems with proper developments.

Site preparation, including mass grading, dynamic compaction, fill and cap foundation, rough grading and the establishment of building pads, is anticipated to begin in spring of 2006 and last until spring of 2009. Implementation of the RAP, including the installation of the cap as well as the installation of the requisite containment, collection and treatment facilities, and also the placement of piles, is anticipated to begin in summer 2007 and last until fall of 2008. It is currently anticipated that the construction of all on-site structures would occur concurrently over an approximately 2-year period. Construction of off-site improvements would begin in the winter of 2007 and end in the fall of 2008. Site construction, including the establishment of structural slabs, utility installation, building construction, roads, parking lots and landscaping, is anticipated to begin in the winter of 2008 and be completed by end of 2010.

This construction schedule is what is anticipated to occur at this time, but it is important to note that the schedule is subject to many factors, and as a result, could be revised.

F. USE OF THE EIR, RESPONSIBLE AGENCIES, AND DISCRETIONARY ACTIONS

This Draft EIR, pursuant to Section 15161 of the CEQA Guidelines, is a Project EIR and serves as the primary document in the formulation and implementation of a mitigation monitoring program for the Project. This EIR serves as an informational document and provides an analysis of the whole of the Project, including but not limited to the following: implementation of the Remedial Action Plan for the site, grading and construction activities associated with the Carson Marketplace project, and operation of the proposed retail, restaurant, commercial, entertainment and residential facilities.

The intended use of this EIR is to assist the City of Carson and the Carson Redevelopment Agency in making decisions with regard to the Carson Marketplace Project. This Draft EIR is also intended to cover all State, regional, and local governmental discretionary approvals that may be required to construct or implement the proposed Project. Additional agencies using the document would include, but would not necessarily be limited to, the state Department of Toxic Substances Control (DTSC), the Regional Water Quality Control Board and the state Department of Transportation (CALTRANS).

Implementation of the proposed Project would require, but would not necessarily be limited to, the permits and approvals listed below. Other actions of local, regional and/or federal agencies may be required.

Carson Redevelopment Agency

- Owner Participation Agreement;
- Improvement or other bonds; and
- Revenue bonds.

City of Carson

- Adoption of the Carson Marketplace Specific Plan;
- General Plan Amendment;
- Zone Change;
- Implementation of an Overlay Zone for Development District 3;

- Development Agreement;
- Building-related permits such as general building, foundation, plumbing, sewer, HVAC, electrical, landscaping, fencing, paving, etc.;
- Construction-related encroachment permits;
- Subdivision Map and/or Tract Map approvals;
- Vacations of existing on-site roadways;
- On-site public improvements; and
- Street improvements as required.

State of California

Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control

- Approval of changes to the existing Remedial Action Plan (RAP) in conjunction with Project.
- Oversight of RAP implementation

Regional Water Quality Control Board

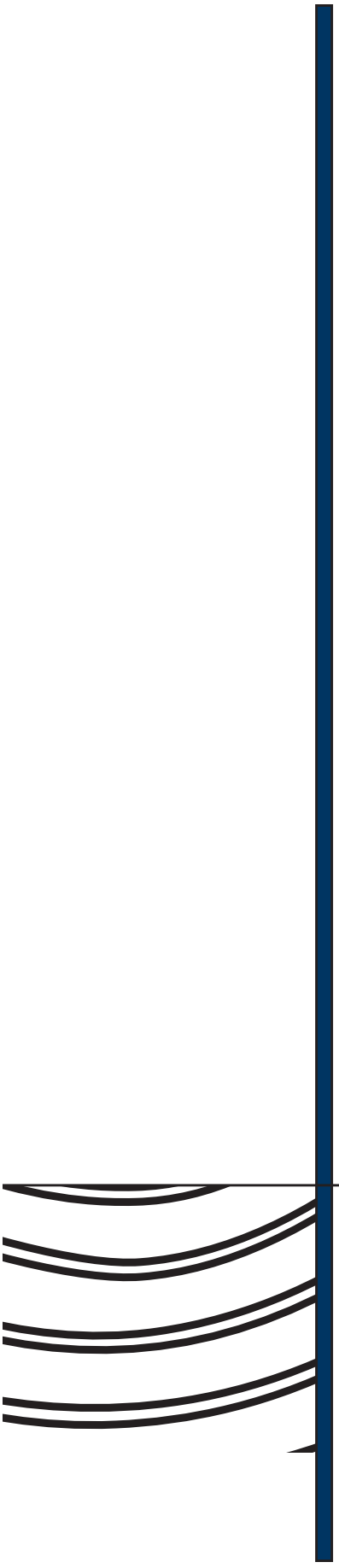
- Issuance of a Waste Discharge Permit.

California Department of Transportation (Caltrans)

- Improvements to the Avalon Boulevard interchange to the I-405 Freeway; and
- Any required Caltrans approval related to signage.

Additional Discretionary Actions

- Any other discretionary actions or approvals that may be required to implement the proposed Project.



III. General Description of the Environmental Setting

III. GENERAL DESCRIPTION OF THE ENVIRONMENTAL SETTING
A. OVERVIEW OF ENVIRONMENTAL SETTING

1. LAND USE

Development Districts 1 and 2 were operated as a Class II Landfill until 1965. At the time landfill operations were ceased, the landfill was covered with a final layer of soil, fenced, and closed to public access. The 11-acre portion of the site north of Del Amo Boulevard is a typical urban vacant lot that is undeveloped and fallow. The heavily urbanized area surrounding the Project site includes residential neighborhoods, commercial corridors, commercial centers, light and heavy industrial uses, recreational uses, schools and public service facilities. These varied uses are integrated into the City's urban fabric while also occurring in large single use areas as well as mixes of uses within a smaller area.

The land uses north of the Project site consist of a nursery located within an otherwise undeveloped open space utility easement and the Dominguez Hills Golf Course and Practice Range. North of the golf facility is a multi-family apartment complex, located between Main Street and the I-405 Freeway. All of these uses are isolated from uses further to the north by the I-405 Freeway, a large swath of open space and the Dominguez Hills Channel. Uses north of the freeway corridor include the Goodyear Blimp site and the Victoria Golf Course and Park. Main Street, located west of the Project site, is developed with light industrial uses (e.g., mini-storage), and other heavy industrial and commercial/service uses. These uses extend westerly to Figueroa Street and the adjacent I-110 Freeway, which establishes a boundary between uses farther to the west. Notable uses that vary from the general light-industrial character of the area include a church and the Carson Town Center (retail/shopping center) located on Torrance Boulevard, approximately 0.4 mile west of the Project site. There are also several large tracts of vacant land within this area. Well south of the Project site, Main Street transitions to residential and commercial uses.

The concrete-lined Torrance Lateral Drainage Channel, borders the Project's south side and the majority of its west side. Detached residences and mobile homes are located across the drainage channel to the south and west of the Project site. Residential neighborhoods extend south to Carson Street, which serves as a distinct corridor with commercial and service uses (e.g., a school and library). A neighborhood park is located among the residential uses in this area, approximately 0.33 miles south of the Project site. Uses extending south of the Project site on Avalon Boulevard, at the edge of the Project site, include several car dealerships. The eastern edge of the Project site adjoins the I-405 Freeway (including the I-405/Avalon Boulevard interchange) and the Dominguez Channel, a large flood control facility east of the freeway.

Land uses east of the Dominguez Channel, include commercial/retail and office uses and the South Bay Pavilion, a regional commercial center whose major tenants include, among others, JC Penney, IKEA, and Sears. Other more outlying uses include housing developments, and industrial/oil facilities. California State University at Dominguez Hills, inclusive of the Home Depot Center, an 85-acre, multi-sport and athletic training facility is located approximately one mile northeast of the Project site.

2. VISUAL RESOURCES

a. Aesthetic Character

The Project site, south of Del Amo Boulevard, is fenced, vacant and covered by predominantly bare soil that becomes green with non-native grasses following winter rains and turns brown by summer. The 11-acre portion of the site north of Del Amo Boulevard is undeveloped and covered with loose soil and tall grass. Existing land uses in the Project area (e.g., residential neighborhoods, commercial, light and heavy industrial uses, recreational uses, schools and service facilities) are generally low-rise and, intermixed among the I-405 and I-110 freeways so as to blend into an overall pattern of a developed, urban/suburban environment. Although the Project site does not contain unique, natural resources, the large expanse of undeveloped land adds to the City's urban environment in a manner that contributes to the quality of its aesthetic setting. The Project site also allows exposure to large visual expanses and a feeling of spaciousness, thereby providing a visual break from surrounding development.

b. View Resources

The Project vicinity does not contain notable features that would typically be considered a view resource, e.g. unique geologic features and natural areas, etc. The Project site lies in a large basin with little change in elevation that might provide scenic quality (e.g. hillside areas). The nearest notable geologic feature, the Palos Verdes Peninsula is located approximately five miles southwest of the Project site. More distant features that define the basin are located at some distance (i.e., Santa Monica and San Gabriel Mountains). The features of the Project's visual setting that might shape an appreciation of its visual character are limited to typical urban elements, and are subject to personal interpretation. Two notable man-made features that fit this criteria are located along the I-405 Freeway. Specifically, the Goodyear Blimp, when docked at its port, is a cultural symbol located in an open expanse; and a large fiberglass statue of a man holding a golf club located on the Dominguez Hills Golf Course, a notable example of roadside architecture.

Views of the Project from locations accessible to the public (i.e., public views) are available from the I-405 Freeway, Del Amo Boulevard, and Main Street. However, none of these roadways is designated as a scenic highway. Since the I-405 Freeway is at a lower elevation along the Project site, views of the current ground-level of the Project site are not available, however, if the Project site were developed with higher structures, these would be visible due to the proximity of the freeway. Views of the Project site are also available from the Dominguez Hills Golf Course north of the Project site. The only notable views of the Project site from private locations are associated with the residential units located opposite to the southern and southwestern edges of the Project site. Near views from these locations are dominated by a bermed slope along the edge of the Project site. Distant views over the site may be available from the upper stories of two-story residences. Distant views of the Project site are generally limited, due to the flat terrain in the surrounding area and the prevalence of existing development although a few tall office buildings or distant locations within the Palos Verdes Peninsula may view the Project site as a relatively small, open space feature within an established urban environment.

c. Shade/Shadow

The Project site is currently vacant and produces no shade/shadow effects. The only light/shade sensitive uses adjacent to the site that could potentially be affected by shading are the approximately 100 residential units that border the Project boundary along the southern and southwestern edges, across from the Torrance Lateral.

d. Artificial Light

The Project site is currently vacant and generates no artificial light. The Project site lies within a larger urban setting with varied lighting levels, typical of the multiple uses in the area; commercial, light-industrial and residential uses, in particular. Street lighting, as well as brighter freeway lighting, also contributes to the overall lighting levels. The larger area has a soft glow that is typical of urban/suburban areas.

3. TRANSPORTATION/CIRCULATION

a. Traffic and Circulation

The Project site is served by the San Diego (I-405) and Harbor (I-110) Freeways and surface streets, including Del Amo Boulevard, Carson Street, Torrance Boulevard, 213th Street, and 190th Street in the east-west direction and Avalon Boulevard, Main Street, Figueroa Street, Hamilton Avenue, and Vermont Avenue in the north-south direction. The I-405

Freeway/Avalon Boulevard interchange is located near the southwest corner of the Project site and the I-110/Hamilton Avenue interchange (southbound) and the I-110/Figueroa Street interchange (northbound) are located approximately 0.3 miles southwest of the Project site's Main Street/Del Amo Boulevard intersection. The traffic analysis evaluated the existing traffic conditions at 24 intersections and along 32 freeway segments. Operating conditions were Level of Service (LOS) D, i.e. fair or better, at all locations except for the following. Under existing traffic conditions, four intersections, including the intersections of Hamilton Avenue/Del Amo Boulevard, Hamilton Avenue/I-110 southbound ramps, Avalon Boulevard/I-405 northbound ramps, and Vermont Avenue/Carson Street intersections are operating at an unacceptable LOS E during the afternoon peak hour. At present, segments of the I-110, I-405, I-710, and SR 91 freeways are operating at LOS E or F during the A.M. or P.M. peak hour, or both.

b. Access

Main Street, Del Amo Boulevard, and I-405 southbound ramps provide access to the Project site. Development District 3 has direct access to Main Street and Del Amo Boulevard, although no paved driveways or roads currently exist on site. Development Districts 1 and 2 contain two existing paved streets, Stamps Drive and Lenardo Drive. Lenardo Drive intersects Main Street and Stamps Drive intersects Del Amo Boulevard. In the south portion of the Project site, Lenardo Drive currently dead ends within the Project site, short of the I-405/Avalon Boulevard southbound off-ramp. Lenardo Drive also intersects Avalon Boulevard, less than 0.2 miles east of the Project's south boundary.

c. Public Transportation

Two transportation agencies, including the City of Carson Circuit Transit System and the Los Angeles County Metropolitan Transportation Authority (MTA) provide bus service in the Project vicinity. The City of Carson Circuit Transit System operates seven of the 11 bus lines accessible from the Project site. The nearest routes to the Project site travel north and south on Avalon Boulevard, with routing east on Del Amo Boulevard from Avalon Boulevard.

d. Parking

No parking is needed or provided within the Project site since there are no existing uses. Street parking is generally available along local and major streets in the area.

4. HAZARDS AND HAZARDOUS MATERIALS

Historically, Development Districts 1 and 2 were used as a Class II landfill from 1959 to 1964. During the life of the landfill, approximately 6 million cubic yards (cy) of solid municipal waste and 2.6 million barrels of industrial liquid waste were received at the landfill. As a result of contamination on and adjacent to the landfill, the 157-acre landfill site is listed by the State of California Department of Toxic Substances Control (DTSC) as a hazardous substances site. In 1988, DTSC issued Remedial Action Order No. HSA87/88-040 requiring the investigation of contamination at the landfill site and preparation of remedial action plans.

Due to the size and complexity of the former landfill site, DTSC divided the remediation into two operable units. Investigations of the Upper Operable Unit (OU) documented the presence of landfill gases (methane and carbon dioxide) as well as volatile organic compounds (VOCs) and metals in the landfill's soil and groundwater. A Remedial Action Plan (RAP) was prepared and approved by DTSC for the Upper OU in 1995. A RAP for the Lower OU was prepared to address the potential impact of groundwater contamination in the Upper OU on the Lower OU. The RAP for the Lower OU was approved by DTSC in 2005.

With regard to Development District 3, an initial Phase II investigation was completed because a prior environmental investigation of the site identified the presence of elevated concentrations of VOCs and methane in subsurface soils. During the Phase II investigation, VOCs were identified above detectable levels in the samples collected and analyzed. Methane was detected in five samples at concentrations only at or slightly above the detection limit. The detected metals concentrations found in soil samples were within general background levels with the possible exception of barium. Since the soil-vapor survey findings of the initial Phase II investigation are different from the results of the initial soil vapor survey conducted in 1990, additional Phase II activities have been recommended to further evaluate potential vapor intrusion and worker health and safety concerns.

5. GEOLOGY/SOILS

a. Soils and Geology Profile

The Project site is located in the Torrance Plain within the West Coast Basin, a southern portion of the greater Los Angeles Basin. The 550-foot thick San Pedro Formation underlies the area and Project site. Native soils underlying the site consist of alluvial deposits of the Lakewood Formation, which is concealed by overlying alluvium and fill throughout the Project site. Development Districts 1 and 2 previously served as a Class II landfill. The thickness of the waste increases rapidly from approximately 1.75 feet adjacent to the haul roads to more than 60

feet in the interior of the waste cells. The average thickness of the waste is approximately 40 feet in depth. There is no waste beneath the haul roads. Little or no waste underlies the existing dirt road bordering the site immediately north of the Torrance Lateral Channel. A soil cover, ranging from three to 30 feet in thickness occurs across the Project site.

b. Earthquake Faults

Detectable ground shaking at the Project site could be caused by any of five active or potentially active fault zones, including the Newport-Inglewood, San Andreas, Palos Verdes, Whittier, and the Santa Monica fault zones. The Avalon-Compton structural zone, located approximately 2 miles northeast of the Project site, is the only active fault zone in the City of Carson. This fault has had moderate to high seismic activity with earthquakes ranging from magnitude 4.0 to 8.25 on the Richter scale. No known active fault traces are located within the Project site. Potential ground shaking in the South Bay area and the City of Carson is regarded as potentially severe due to the unstable sub-base of sandy soil. The sandy sub-base is capable of producing a rolling motion that causes damage over widespread areas and may hinder the detection of faults.

(1) Liquefaction

A large portion of the Project site is designated by the City General Plan Safety Element as a Liquefaction Hazard Zone, based on a State of California classification. This classification is based on the general alluvial soil type, depth of groundwater tables, and the high seismicity of the area. Liquefaction potential is greatest where the groundwater level is shallow, and loose, fine sand occur within a depth of about 50 feet or less. Although prior geological evaluations determined that liquefaction potential would be low within all three Development Districts, the General Plan Safety Element classification requires that analysis and reporting of liquefaction potential be performed prior to any construction. Potential settlement (not liquefaction) hazards during ground shaking may exist on Development Districts due to underlying refuse layers.

(2) Subsidence

Under existing conditions, local subsidence associated with Development Districts 1 and 2 could occur, since refuse layers would continue to settle, due to the consistency of the refuse and the decomposition of organic matter. In Development District 3, due to the unconsolidated nature and debris content of overlying fills soils, prior geotechnical investigators have concluded that the upper 0.5 to 8.0 feet of the fill and low density natural soils would be subject to settling and are not suitable to provide support for slabs on grade, pavement, and building foundations.

(3) Slope Stability/Landslides

Due to the relative absence of steep slopes on the Project site and in the surrounding area, landslide or slope instability is limited to any unprotected slopes among the variety of flood control channels that intersect the area. The Torrance Lateral Flood Control Channel, adjacent to the west and south boundary of the Project site, is concrete-lined and, thus, would not be subject to erosion or slope instability.

6. SURFACE WATER QUALITY

a. Water Quality

In 1991, laboratory tests of surface water runoff samples from Development Districts 1 and 2 determined that contamination is present at the Project site. Of the seven Volatile Organic Compound (VOC) samples collected from four surface water locations, only xylene was detected at one of the collection locations. Semi-Volatile Organic Compounds (SVOCs) were collected from three locations and were found at one sample location. Oil and grease were also detectable. Under the Final Remedial Action Plan (RAP) for the Upper OU, storm water discharges from the site requires a NPDES permit to allow discharge into the storm drain system. Storm water runoff is currently managed under an existing General Industrial NPDES permit, which includes the implementation of a SWPPP. The SWPPP establishes a program for monitoring, testing, and reporting of stormwater quality to determine compliance with the requirements of the NPDES and the efficacy of the selected monitoring treatment. Sampling and testing of surface water runoff, quarterly and during precipitation events, have been on-going for several years. Reported water sampling and testing indicate that the primary storm water pollutant source is sediment from thinly vegetated areas near roads, and residual dirt left on roads by heavy equipment activities. Precipitation was the only discharge source. According to testing results reported in the two most recent Annual Reports, no VOCs, Semi-VOCs, RCRA-listed metals, or oil and grease were detected that exceeded the state's specified limits. Surface water quality from Development District 3 has not been tested. Due to stockpiled fill soils and areas of thin vegetation, the potential for sediments in surface water runoff exists.

b. Drainage

The Project site consists primarily of an expanse of exposed soil and fill materials, with minimal amounts of vegetation to anchor the surface soil. Paved areas consist of Lenardo Drive and Stamps Drive. Due to poorly maintained drainage patterns, a portion of water and sediment transported during episodes of rainfall is contained in small water-trapping depressions. Most flows, however, are toward the existing streets and the existing storm drain system in Lenardo

Drive, and Stamps Drive and, then to the existing system in Del Amo Boulevard and Main Street. In Development District 3, flow is unrestrained over the ground surface (sheet flow) and flows to the north. The majority of this sheetflow percolates into the onsite soils or into the undeveloped land to the north. However, an area in the westerly portion of the site drains into Del Amo Boulevard on the west side of the Dominguez Channel. The local drain system outlets into the Torrance Lateral Channel or the Dominquez Channel. The design capacity of the storm drain system in Main Street and Del Amo Boulevard was engineered by the Los Angeles County Department of Public Works (LACDPW) to serve the future commercial/industrial development of the Project site and is designed on the assumption of 100 percent impermeability, in which all surface water is presumed to enter the existing storm drain systems.

7. AIR QUALITY

The Project site is located within the monitoring area for the North Long Beach Monitoring Station, located approximately 6 miles southeast of the Project site. All criteria pollutants are monitored at this station (O_3, CO, NO_X, SO_2, PM_{10} and $PM_{2.5}$). During the 2000 to 2004 reporting period, ozone (O_3), and particulate matter (PM_{10}) exceeded State of California, but not National Standards. An exceedance of the California one-hour ozone (O_3) standard was recorded three days in 2001 and one day in 2003. The California PM_{10} standard was exceeded between 2 and 12 times annually, with the highest number of exceedances in 2000 and 2001. Particulate matter ($PM_{2.5}$) exceeded the National standard between zero and 4 times annually, with the highest number of exceedances in 2000. Neither the California nor the National Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), or sulfur dioxide (SO_2) standards were exceeded during the 2000 to 2004 reporting period. The Basin is currently in compliance with California and National standards for Lead (Pb).

In relation to carcinogenic risk, South Coast Air Quality Management District (SCAQMD) studies have determined that the average carcinogenic risk in the Los Angeles Basin is approximately 1,400 in one million. Approximately 70 percent of all carcinogenic risk is attributed to diesel particulate emissions, approximately 20 percent of risk is attributed to other toxics associated with mobile sources (vehicles, aircraft, and ships), and approximately 10 percent of all risk is attributed to stationary sources (industries and businesses, such as dry cleaners and chrome plating operations). The risk from air toxics is generally lower near the coastline and increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports). The City of Carson is generally located in a risk area of 500 to 750 in one million.

Land uses in the Project vicinity that are sensitive to poor air quality include detached residences and mobile homes that are located to the south and west of the Project site, the nearest

of which is located approximately 150 feet from the Project boundary. Schools, libraries, religious institutions, hospitals and nursing homes are also sensitive to poor air quality. The nearest school is the Carson Street Elementary School, located approximately one-half mile to the south. No other sensitive uses are located in close proximity to the Project site.

8. NOISE

The City of Carson identifies residences, public and private school classrooms, libraries, hospitals and elderly care facilities as noise sensitive receptors. The nearest sensitive residential receptors that may be affected by the proposed Project are the one- and two-story detached residences and mobile homes that are located across the Torrance Lateral drainage channel to the south and west of the Project site. The predominant noise source within the Project site is roadway noise from the San Diego freeway (I-405), and local roadways such as Main Street, which are located east and west of the Project site, respectively. Measured ambient noise levels at four locations on the Project site perimeter have CNEL values ranging between 67.5 dBA and 73.8 dBA. CNEL levels at the locations near the two neighboring mobile home parks are 72.2 dBA and 73.8 dBA. These noise levels exceed the City of Carson's exterior noise standard limits for sensitive receptors and are considered "normally unacceptable" based on the City's community noise/land use compatibility criteria.

In addition to measured noise levels, existing noise levels were forecasted according to existing surface street traffic. Forecasted levels ranged from a CNEL of 56.7 dBA to 67.1 dBA at 50 feet from the roadway right-of-way. The roadway traffic noise levels indicate that all land uses located near the Project site, with the exception of residences south of Torrance Boulevard, are currently exposed to community noise levels above 65 CNEL. A CNEL of approximately 71 dBA occurs at the edge of Del Amo Boulevard along the northern boundary of the Project site and along Avalon Boulevard adjacent to the existing mobile homes. Although noise levels are lower at areas farther from the roadways, this CNEL is considered "normally unacceptable." Existing noise levels exceed the City of Carson's exterior noise standard limits for sensitive receptors and are considered "conditionally acceptable" based on the City's community noise/land use compatibility criteria.

9. PUBLIC SERVICES

a. Fire Protection

The Consolidated Fire Protection District of Los Angeles County (LACoFD), Battalion 7, Division I of the Central Region, provides fire and emergency medical services to the City of

Carson and the Project site. Six primary fire stations serve the City of Carson, with four of the stations located within City boundaries. A Fire Prevention Office is located at Carson City Hall. Two paramedic units are located within the City and units in surrounding communities provide auxiliary paramedic care. The nearest response unit to the Project site is Fire Station No. 36, located approximately 1.5 miles south of the Project site's Lenardo Drive and Main Street egress point. Other response units in the Project area include Station No. 10 and Station No. 116 at 755 Victoria Street. The latter two stations are located approximately 2.4 miles from the Project site. The LACoFD's "Five-Year Plan" plans identify a proposed station near the I-405/110 Freeway interchange, which would be particularly accessible to the Project's site northerly entrances. According to the City of Carson General Plan (2004), 1,047 medical emergency responses, with an average response time of 4.7 minutes, and 81 fire incidents, with an average response time of 5.0 minutes, occurred in a recent year and represent annual demand on fire services. The average response time for Fire Station No. 36 is less than the Citywide average response time, while the average response time for Fire Station No. 116 is greater than the citywide average. Since staffing at any single fire station remains constant, a major incident, such as a structure fire, would require auxiliary service from additional response units. According to the LACoFD, limited tax revenues have restricted the Fire Department's ability to meet new growth needs.

b. Police Protection

The Los Angeles County Sheriff's Department, Field Operations Region II, serves the City of Carson and the Project site. The Carson Sheriff's station, located at 21356 South Avalon Boulevard, also provides police services for West Compton, Gardena, Torrance, and Rancho Dominguez. In 2002, the station was staffed by 187 sworn officers and 35 civilian personnel. The service ratio was 2.1 sworn officers per 1,000 residents. According to the Safety Element of the General Plan, a standard of 1.7 sworn officers per 1,000 residents is considered excellent. Thus the level of service provided by the Sheriff's Department in the City of Carson exceeds the General Plan's standard of excellence by 0.40 sworn officers per 1,000 residents. Within a 24-hour time period, approximately 31 patrol cars are on duty over three work shifts throughout the City.

c. Schools

The Los Angeles Unified School District (LAUSD) provides public schools in the City of Carson. The LAUSD has experienced an increase in enrollment over the last decade, from 636,000 students in the 1994–1995 school year to over 746,000 students in the 2003–2004 school year. Further, the LAUSD has recently implemented a class size reduction program. As part of an effort to create the needed additional space, the LAUSD has implemented multi-track, year-round school calendars at many school sites. At least 30 percent of LAUSD schools are on multi-track year-round schedules to accommodate the heavy enrollment. The three public

schools serving the Project area include Carson Elementary School, Steven M. White Middle School, and Carson Senior High School. These schools are operating below capacity enrollment, though Carson High School enrollment levels are near capacity. Carson Elementary School is on a four-track annual schedule, and the middle school and high school are on single-track schedules.

d. Parks and Recreation

The City of Carson contains 16 public parks, one county park and two public golf courses. Total public park space is 315 acres. Applied to the City's approximate population of 89,730, the City has a ratio of 3.5 acres of park and recreational space per 1,000 residents. Park and recreational space owned and operated by the City is provided at a rate of 1.72 acre per 1,000 residents. Open space areas in the City of Carson total 599 acre, including public parks, the Victoria Public Golf Course, the Goodyear Blimp Port, and drainage courses and utility transmission corridors. In addition to these facilities, the City has a Joint Use Agreement with the Los Angeles Unified School District (LAUSD) for the use of playfields, tennis courts, and other recreational facilities during off-school hours at Carson High School and Caroldale Elementary School. California State University Dominguez Hills also has 125 acres of planned and existing recreational open space. The City considers closed landfills, such as the Project site, which have not been fully remediated to be temporary open space areas. Twelve parks or recreational facilities are located in proximity to the Project site and would potentially be used by Project residents.

e. Library Services

The proposed Project is within the service area of the Carson Regional Library, a 33,112 square foot facility, located approximately one mile south of the Project site at 151 East Carson Street. The Carson Library service area includes the southern half of the City and nearby unincorporated areas of the County. Based on 2000 Census data, the current service population for the Library is 98,661. The Library employs 12 full-time staff and 24 part-time staff. The Carson Library has a collection size of 255,389 books, audio and video materials, DVD's, pamphlets, periodicals and government documents. Amenities offered at the Library include public access to the internet and online catalogs, CD-ROM workstations, a Government Services computer, a public meeting room, a Consumer Health Program and Services, a Homework Center, an Adult Literacy Center, pre-school story hours, and a reader's advisory service. Other Los Angeles County libraries within five miles of the site could potentially serve Project residents and include the Victoria Park Library, the Lomita Library and the Gardena Mayme Dear Library.

10. UTILITIES/SERVICE SYSTEMS

a. Water Services

(1) Water Supply

The Project site is served by California Water Service Company (CWS), which serves a 35-square-mile area including most of the City of Carson. CWS obtains its water supplies from the Central and West Coast Basins underlying the City of Carson and from purchased imported water. The Central Basin is dependent upon subsurface flows from the San Gabriel Valley, storm runoff, and the injection of imported and recycled water. Groundwater for the West Coast basin originates from subsurface flow from the Central Basin and injection along the seawater barrier system. Virtually all of the major drainage courses flowing through the Central and West Coast Basins have been developed into a comprehensive system of dams, flood control channels, and percolation ponds for artificially recharging the basins. Imported water is purchased from the Metropolitan Water District of Southern California (MWD). CWS has direct MWD service connections and participates in the MWD-sponsored "In-Lieu" Water Programs, whereby water suppliers purchase imported water from MWD at a reduced rate instead of pumping groundwater. Approximately 80 percent of the water supply distributed by CWS is comprised of imported water. CWS estimates that it will have sufficient water supplies to meet annual customer water demand through 2015, under normal precipitation conditions.

(2) Water Infrastructure

The CWS water infrastructure is a combined network of fire suppression and domestic water pipelines located in City streets. The larger mains range in size from 12 to 42 inches in diameter. Several residential areas have mains less than 6 inches in diameter. These mains provide sufficient flow for both domestic use and fire flow requirements. The Project site is served by a 16-inch main in Del Amo Boulevard and by a 12-inch main in Main Street. Secondary feeds from the two main lines provide service to the interior of the Project site. These could be used to serve the current Project if determined to be appropriate. The on-site water system consists of 12-inch PVC water mains under Stamps and Lenardo Drives. This distribution of mains and fire hydrants was engineered for future commercial/industrial uses and was approved by the Los Angeles County Department of Public Works. A backbone reclaimed water system is in place on the north side of the I-405 Freeway and Dominguez Channel that can be used for landscape irrigation, cooling towers, and refineries, as well as street sweeping and toilet flushing. It could be brought down Main Street to serve the Project Site and an adjacent golf course.

b. Wastewater Services

(1) Wastewater Treatment

Wastewater generated on the Project site would be treated at the Joint Water Pollution Control Plant (JWPCP), located at 24501 South Figueroa Street in Carson. The JWPCP provides sewage treatment and disposal for residential, commercial and industrial users within the 17 sanitation districts in Los Angeles County that are participants in the Joint Outfall Agreement. The system consists of six treatment plants, over 1,000 miles of trunk sewer lines, 48 pumping plants, and four submarine outfalls. The JWPCP serves a population of about 3.5 million people and many industries in southern and eastern Los Angeles County. The JWPCP has a design capacity of 385 million gallons per day (mgd) and currently processes an average flow of 324.9 mgd.

(2) Wastewater Infrastructure

The City of Carson is served primarily by 8-inch local lines and one dozen trunk lines, ranging in size from 42 inches to 8 feet in diameter. The Project site would be served by trunk lines located in Del Amo Boulevard and Main Street. The Del Amo Replacement Trunk Sewer, located in Del Amo Boulevard, between Main Street and the I-405 Freeway, is a recently constructed 42-inch diameter replacement sewer line with a design capacity of 10.8 mgd. The Main Street Relief Sewer is a 42-inch diameter line with a design capacity of 20.2 mgd. It conveyed a peak flow of 5.8 mgd when last measured in 2003. There is also an existing local system of lines located within the Project site that was developed in anticipation of the Metro 2000 Project. This system includes lines ranging from eight inches to 18 inches in size.

c. Solid Waste

Solid waste in the City of Carson is collected by Waste Management and EDCO LLC. The City contracts with Waste Management for approximately 96 percent of its commercial/industrial waste and all of its residential waste collection services, including the pickup of sorted recyclable materials. Waste Management collects approximately 70,000 tons of solid waste from residential customers and 153,500 tons of solid waste from commercial and industrial customers per year, a total of roughly 612 tons per day. Waste Management maintains a 10-acre, 5,300-ton capacity transfer station where materials are sorted for disposal or recycling. Recycling materials are sold and green waste is trucked to landfills and is utilized as daily cover. Remaining waste is disposed of at Bradley Landfill in Sun Valley or El Sobrante Landfill in Riverside County. El Sobrante Landfill receives approximately 95 percent of the City's solid waste and, as of June 6, 2001, had a remaining capacity of 3,674,267 cubic yards. Based on this

remaining capacity and a throughput of 10,000 tons per day, the landfill has an expected closure date of January 1, 2030.

Unclassified (Inert) Landfills are defined as facilities that accept materials such as soil, concrete, asphalt, and other construction and demolition debris. As of December 31, 2003, the total remaining permitted inert waste capacity in Los Angeles County was estimated to be approximately 69.94 million tons. The City currently operates several solid waste diversion programs, such as composting, source reduction, recycling, waste to energy, and material recovery. On an annual basis, the City has met or exceeded the waste diversion goals set forth in State legislation since it was enacted (i.e., the diversion goal of 50 percent of the City's waste stream). In reporting year 2003, the City had a diversion rate of 68 percent.

III. GENERAL DESCRIPTION OF THE ENVIRONMENTAL SETTING
B. CUMULATIVE DEVELOPMENT

The California Environmental Quality Act (CEQA) requires that the analysis of potential project impacts include cumulative impacts. CEQA defines cumulative impacts as "two or more individual effects which, when considered together are considerable or which compound or increase other environmental impacts."[11] The analysis of cumulative impacts need not be as in-depth as what is performed relative to the proposed Project, but instead is to "be guided by the standards of practicality and reasonableness."[12]

Cumulative impacts are anticipated impacts of the proposed Project along with reasonably foreseeable growth. Reasonably foreseeable growth may be based on either:[13]

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts; or

- A summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions.

Build out and occupancy of the Project is forecasted to occur by the end of 2010. Accordingly, this Draft EIR considers the effects of other proposed development projects that may be constructed between 2005 and 2010. This analysis has utilized a listing of all anticipated related projects based on information that was provided by the City of Carson. Table 9 on pages 117 through 118 presents a listing of the related projects in the Project area. There are 36 related projects in the vicinity of the Project site, with a range of uses including, but not limited to, residential, commercial and industrial uses. The study area generally incorporates the area in which the Project may contribute to a cumulative impact. The locations of the related projects are shown in Figure 8 on page 119. The analysis of potential cumulative impacts is addressed in the analysis of each environmental issue included in Section IV, Environmental Impact Analysis, of this Draft EIR.

[11] *State CEQA Guidelines, 14 California Code of Regulations, § 15355, et seq.*

[12] *Ibid., § 15355.*

[13] *Ibid., § 15130(b)(1).*

Table 9

List of Related Projects

No.	Project Location	Description	Amount of Development
1	19503 Normandie Avenue	Shopping Center	160,000 sq.ft.
2	Gateway Towne Center	Shopping Center Single-Family Housing Movie Theater	509,666 sq.ft. 38 units 2,000 seats
3	16908 Normandie Avenue	Residential Condos	21 units
4	901 S. Central	Sav-On Retail	24,000 sq.ft.
5	Dominguez Technology Center	Technology Industrial Office	840,997 sq.ft. 693,822 sq.ft. 567,673 sq.ft.
6	Dominguez Hills Village	Childcare	150 children
7	CSUDH Campus	Univ. Student Growth @ 3.9 p.a.	1,479 students
8	CSUDH—University Housing	Single-Family Residential Townhouses	125 units 125 units
9	CSUDH/Home Depot Center Phase II	Hotel Administrative Offices Athletic Performance Ctr. Training Facilities Dormitories	200 rooms 30,000 sq.ft. 30,000 sq.ft. 50,000 sq.ft. 240 beds
10	Prime Wheel Expansion [a]	Warehouse and Office	165,000 sq.ft.
11	South Bay Pavilion	Increase mall sf	225,454 sq.ft.
12	643 E. 223rd Street	Townhouses	40 units
13	1216 E. Carson Street	Detached Condos	7 units
14	21841 Orrick Avenue	Detached Condos	8 units
15	235 E. 235th Street	Detached Condos	11 units
16	630 E. 220th Street	Townhouses	8 units
17	22038 Grace Street	Detached Condos	3 units
18	616 E. Carson Street	Townhouses	100 units
19	430–437 E. Carson Street	Townhouses	98 units
20	21917 S. Figueroa Street	Townhouses	6 units
21	2350 E. 223rd Street	Office	126,400 sq.ft.
22	1249 E. Carson	Church	25,000 sq.ft.
23	132 W. 220th Street	Detached Condos	6 units
24	17120 S. Figueroa Street	Industrial	58,962 sq.ft.
25	1333 E. 223 Street	Car Dealership Expansion	145,000 sq.ft.
26	20320 Avalon Boulevard	Gas Station with Convenience store	6,000 sq.ft.
27	249 E. Gardena Boulevard	Warehousing/Manufacturing	78,408 sq.ft.
28	20700 Avalon Boulevard	24 Hour Fitness	33,000 sq.ft.
29	22005 Main Street	Office/Retail Center	10,205 sq.ft.
30	21914 Dolores Street	Detached Condos	3 units
31	21225 S. Figueroa Street	Church	5,200 sq.ft.

Table 9 (Continued)

List of Related Projects

No.	Project Location	Description	Amount of Development
32	21240–21250 Main Street	Strip Commercial	5,620 sq.ft.
33	21915 Dolores Street	Detached Condos	4 units
34	20240 Avalon Boulevard	Commercial Drive-Thru	1,667 sq.ft.
35	418 223rd Street	Attached Condos	6 units
36	17420 Broadway	4-Unit Industrial/Manufacturing Office Buildings	40,000 sq.ft. 10 sq.ft.

[a] *Traffic Impact Analysis Study for the Prime Wheel Corporation Site Expansion Project, Kaku Associates, April 2004.*

Source: List of Related Projects, City of Carson.

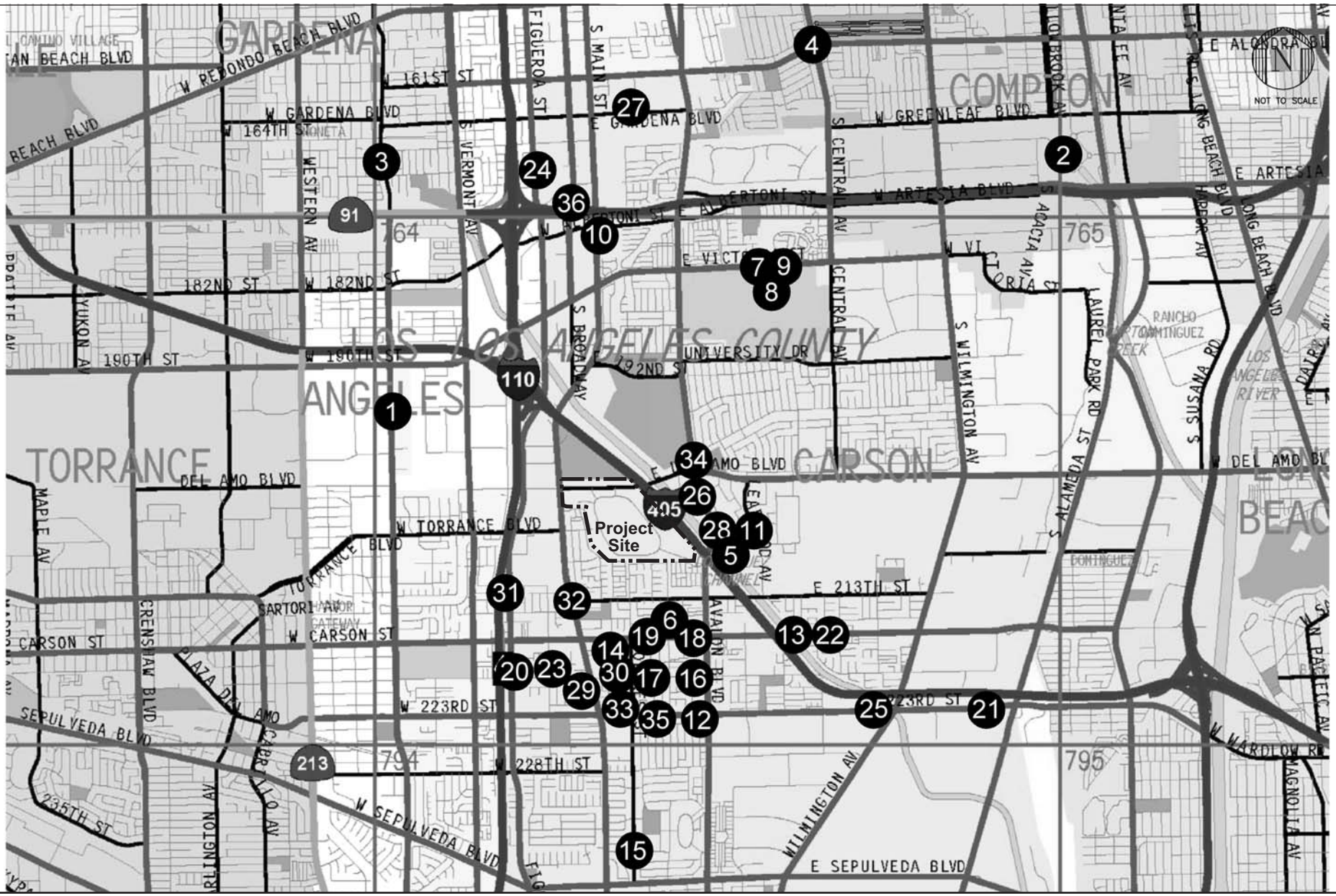


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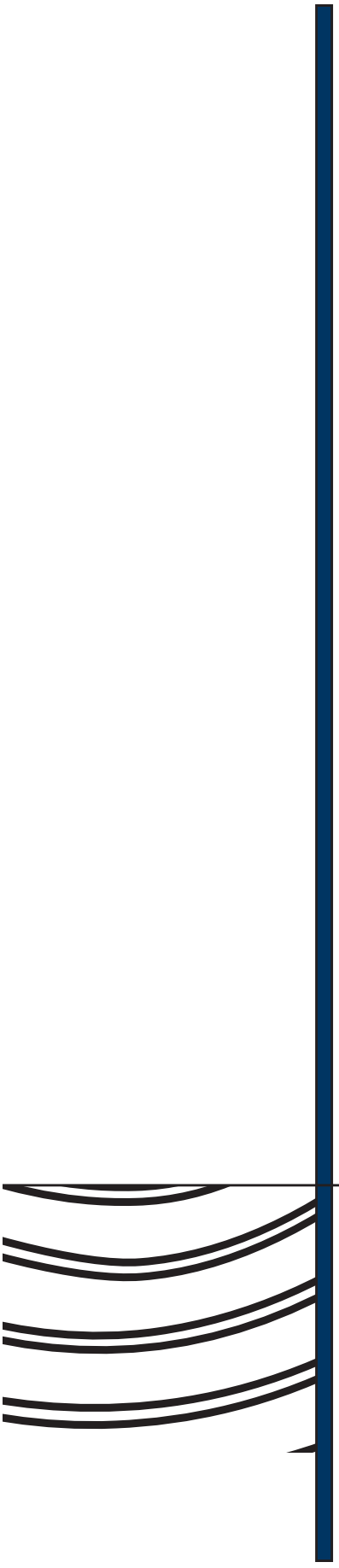
Figure 8
Approximate Location of Related Projects

Source: KAKU Associates, 2005



IV. Environmental Impact Analysis

IV. ENVIRONMENTAL IMPACT ANALYSIS
A. LAND USE AND PLANNING

1. INTRODUCTION

This section addresses the impacts of the proposed Project in relationship to applicable land use regulations, as well as the type and patterns of land uses in the surrounding area. The analysis focuses on whether the uses proposed are consistent with those anticipated in existing plans and whether the proposed Project would divide or cause deterioration of an existing neighborhood, community or land use arrangement. Specific environmental effects on surrounding neighborhoods are addressed in other sections of the EIR, such as Traffic (Section IV.C), Air Quality (Section IV.G), and Noise (Section IV.H).

2. ENVIRONMENTAL SETTING

a. Existing Land Uses

(1) Project Site Land Uses

The 168-acre Project site is currently vacant and undeveloped. The Project site consists of a 157-acre parcel, south of Del Amo Boulevard, and an 11-acre parcel, north of Del Amo Boulevard. The 157-acre parcel operated as a Class II Landfill until 1965. At the time landfill operations were ceased, the landfill was covered with a final layer of soil which varies from 3 to 60 feet, with an average depth of 10 feet. The Site is predominantly bare soil that becomes green with nonnative grasses following winter rains and turns brown by summer. The 11-acre portion of the site north of Del Amo Boulevard is a typical urban vacant lot that is undeveloped and covered with loose soil and tall grass.

(2) Surrounding Area Land Uses

(a) General Characteristics of the Surrounding Area

Although the Project site itself is currently vacant and undeveloped, it is located in a heavily urbanized and developed area within the City of Carson, and the larger vicinity. The larger vicinity includes an extremely large range of uses both by number and nature of operating characteristics. Uses include residential neighborhoods, strip commercial corridors, centralized commercial centers, light and heavy industrial uses and recreational uses, as well as schools, golf courses, and service facilities. These varied uses are dispersed in a patchwork arrangement, with

many large single use areas, and many instances where there are mixes of uses within a smaller area. Land Uses in the more immediate vicinity of the Project site are shown on Figure 9 on page 122, and are described below.

(b) Land Uses Immediately Adjacent to the Project Site

Northern Boundary of the Project Site

The land uses directly facing the northern boundary of the Project site consist of a nursery located within an otherwise undeveloped open space easement. This easement also includes above ground electrical utility lines that run the length of the site. The Dominguez Hills Golf Course and Practice Range, a small par-3 golf facility, lies north and adjacent to the easement in close proximity to the Project site.

Western and Southern Boundaries of the Project Site

The western boundary of the Project site, at its most northern location, faces Main Street, with light industrial uses (mini-storage), interspersed with vacant area and a nursery. At a location just south of Lenardo Drive, the edge of the Project site turns eastward and southward heading away from Main Street. This edge of the Project site faces the Torrance Lateral Drainage Channel, a concrete lined drainage channel. Beyond the Lateral, there is an adjacent residential neighborhood extending southward. This adjacent neighborhood is made up of single-family residential units and three mobile home parks that are interspersed among the single-family homes. There are approximately 100 residential units that directly face the Project site. Other residential units lying further to the south comprise neighborhoods which are separated from the immediacy of the Project site by distance and intervening development**.**

Eastern Boundary of the Project Site

The eastern edge of the Project site adjoins the I-405 Freeway (including the I-405/Avalon Boulevard interchange) and beyond that the Dominguez Channel, a large flood control facility. Together, the I-405 and Dominguez Channel, with an open space corridor between them, comprise a large area of infrastructure that distinctly separates the Project site from other uses in the larger community.

PCR

0 .25 Miles

Scale in approximate miles

Source: Keyhole 2004

LEGEND

Project Site Boundary

Torrance Lateral Drainage Canal

Figure 9
Existing Land Uses

(c) Land Uses in the Larger Vicinity of the Project Site

East of the Project Site

Land uses to the east of the Project site, beyond the I-405 Freeway and adjacent to the Dominguez Channel, include commercial/retail uses and office space, and the South Bay Pavilion, a regional shopping center. The commercial and office uses are pocketed between the Dominguez Channel and the South Bay Pavilion lying further to the east. The South Bay Pavilion, formerly known as the Carson Mall, is a regionally oriented commercial center whose major tenants include, among others, JCPenney, IKEA, and Sears. Other more outlying uses include housing developments, and industrial/oil facilities. For example, residential neighborhoods extend northward from Del Amo Boulevard, whereas an industrial area with oil-related uses extends further eastward from beyond the South Bay Pavilion. The Home Depot Center, an 85-acre, multi-sport and athletic training facility featuring a 27,000-seat soccer stadium, is located approximately one mile northeast of the Project site. The Home Depot and California State University at Dominguez Hills are located approximately 1mile northeast of the Project site.

North of the Project Site

As noted above, uses to the north of the Project site include a utility/open space easement, with an existing nursery and the Dominguez Hills Golf Course. North of the golf facility there is a multi-family apartment complex which is pocketed between the golf facility, Main Street and the I-405 Freeway. All of these uses are isolated from uses further to the north by the I-405 Freeway, a large swath of open space and the Dominguez Hills Channel. This infrastructure corridor establishes a strong boundary and distinct separation of uses. Uses north of the corridor include vacant area, a site housing the Good Year Blimp, and the Victoria Golf Course and Park. The Good Year Blimp facility provides for mooring, take-off and landing, and related support activities for the blimp. The Victoria Golf Course and Park facility is a major County-operated recreation resource which includes a 36-hole golf course, playing fields, picnic areas, etc.

West of the Project Site

The northwestern boundary of the Project site faces Main Street, which has a distinctly light-industrial character, and which demarcates the edge of a district which includes a predominance of light industrial uses. The light industrial character of Main Street extends north and south of the Project site, albeit with an interspersed mix of heavy industrial and commercial/service uses. These uses extend westerly to Figueroa Street and the adjacent I-110 Freeway, which establishes a boundary between uses further to the west. Notable uses that vary from light-industrial include a church, with adjacent office uses, and the Carson Town Center

(retail/shopping center) located on Torrance Boulevard, approximately 0.4 mile west of the Project site. There are also several large tracts of vacant land within this area. Well south of the Project site, toward Carson Street, the Main Street uses begin to transition to residential and commercial uses.

South and Southwest of the Project Site

Land uses to the south and southwest of the Project site include residential neighborhoods that extend to Carson Street, which provides a distinct corridor with commercial and service uses (e.g., a school and library). The neighborhoods include a mix of mobile home parks and single-family residential uses. Residential uses are typically one story, but there are a notable number of two-story units. A neighborhood park is located among the residential uses in the area, approximately .33 miles south of the Project site. Uses extending south of the Project site on Avalon Boulevard, at the edge of the Project site, include several car dealerships.

b. Relevant Land Use Plans and Policies

(1) General Plan of the City of Carson

(a) Overview of the General Plan

California state law requires that every city and county prepare and adopt a long-range comprehensive General Plan to guide future development and to identify the community's environmental, social, and economic goals. The General Plan must identify the need and methods for coordinating community development activities among all units of government; it must establish the community's capacity to respond to problems and opportunities; and it must provide a basis for subsequent planning efforts. The Carson General Plan sets forth objectives, goals, policies, and implementation measures that provide a guideline for day-to-day land use policies and to meet the existing and future needs and desires of the City, while integrating a range of state-mandated elements.

The City of Carson General Plan has been updated at numerous times over the years with a comprehensive update being approved by the City Council on October 11, 2004.[14] That

[14] *The October 11, 2004, adoption of the General Plan was the result of a multi-year effort. That effort began with a citizen participation process and identification of issues, resulting in the September 1997 Carson Vision. Later, a General Plan Advisory Committee (GPAC) was established in February 2000 to provide representative community input to the development of policy direction. An existing conditions report and market analysis were completed in April 2000 to provide background for further policy work. The GPAC recommended alternative land uses and reviewed preliminary goals and policies. Seven Commissions and the Planning Commission held work sessions between April and November 2002, to review the various elements of the General Plan Update. The Planning Commission held 13 workshops and four public hearings before completing its recommendations on October 14, 2003. The City Council held hearings in the spring and summer of 2004, as well as two workshops, prior to the October 11, 2004, adoption.*

approval has been challenged in court and is the subject of a pending lawsuit. Prior to the October 11, 2004, approval, most of the elements were approved in 1981 and 1982, with an Air Quality Element being approved in 1993 and a new Housing Element being approved in 2002. The previous elements included Land Use, Open Space, Public Services and Facilities, Recreation, Circulation, Bicycle Facilities Section, Historic Preservation, Fine Arts, Conservation, Scenic Highway, Parkway and Raised Median, Safety, Seismic Safety, and Noise.

Changes to the 2004 version included, among other items, an update of existing conditions; an update of development projections to the year 2020; amendment of the Land Use Element, including establishment of building intensities for all commercial, industrial and institutional land use categories; creation of two new land use designations (Business Park/ Limited Industrial and Mixed Use) and the creation of a new Land Use Map; and changes to the General Plan Goals, Policies and Implementation Programs. It also included a reorganization of Plan Elements into the following: Land Use, Economic Development, Transportation and Infrastructure, Housing, Safety, Noise, Open Space and Conservation, Parks, Recreation, and Human Services, and Air Quality.

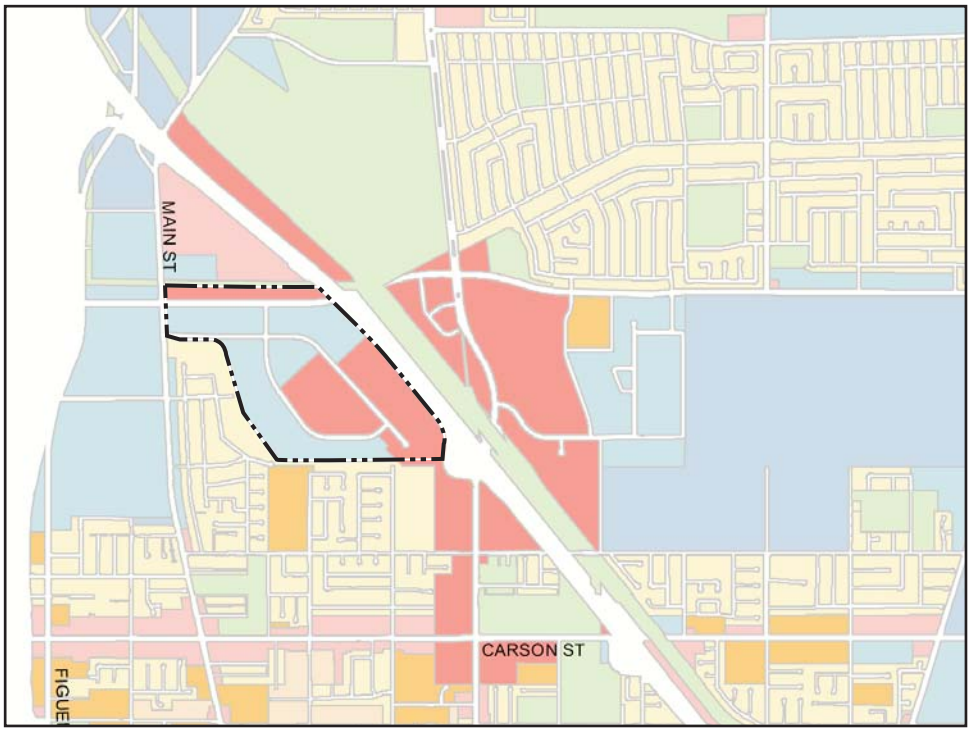
The Plan Elements that directly address the growth and land use issues considered in this Section of the Draft EIR are the Land Use Element, Housing Element and Economic Development Element. These Elements are discussed below. The remaining Elements are addressed, where applicable, in other Sections of the Draft EIR.

(b) Land Use Element

The Land Use Element functions as a guide to City staff, the general public, and decision-makers as to the ultimate pattern of development for the City. It places a central role in correlating all land use issues into a set of coherent development policies. Its objectives, policies, and programs relate directly to the other elements of the City's General Plan. The Land Use Element includes a General Plan Map that designates all of the parcels in the City with planned land uses. It also includes planning goals and related policies, or as stated in the 1982 Land Use Element, "goals and objectives."

This analysis addresses the Land Use Elements of both the 1982 and 2004 Plans in order to address currently adopted policies, as well as previous policies and issues that may be raised under the legal challenge to the 2004 Plan. The policies stated in the 2004 Land Use Element and the goals and objectives stated in the 1982 Land Use Element that are applicable to the proposed Project are listed in Table 10 in the Plan Consistency analysis on page 137.

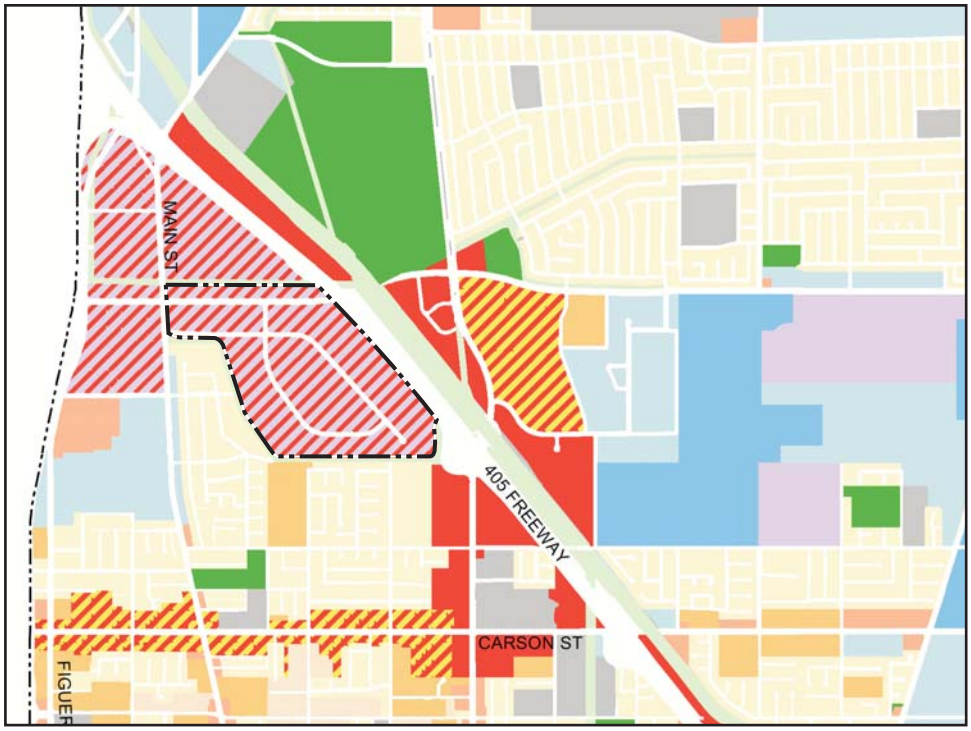
The Land Use Designations for the City per the 1982 and 2004 Land Use Maps are shown in Figure 10 on page 126. As indicated, the 1982 designation is for regional commercial on the 11-acre parcel and the southeast and central portion of the 157-acre parcel and light



1982 General Plan

LEGEND

- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY
- GENERAL COMMERCIAL
- REGIONAL COMMERCIAL
- LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL
- PUBLIC FACILITIES
- Project Boundary



2004 General Plan

LEGEND

GENERAL PLAN - LAND USE

- LOW DENSITY
- MEDIUM DENSITY
- HIGH DENSITY
- MIXED USE - RESIDENTIAL
- GENERAL COMMERCIAL
- REGIONAL COMMERCIAL
- MIXED USE - BUSINESS PARK
- BUSINESS PARK
- LIGHT INDUSTRIAL
- HEAVY INDUSTRIAL
- PUBLIC FACILITIES
- GENERAL OPEN SPACE
- RECREATIONAL OPEN SPACE
- Project Boundary

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Figure 10
General Plan Designations

Source: City of Carson

industrial for the remaining northwest portion of the 157-acre parcel. The 2004 Land Use Map shows the designated use for the 11-acre parcel as regional commercial and the 157-acre parcel as Mixed Use Business Park.

The three applicable land use designations are described as follows:

- The Light Industrial designation, as defined in the 1982 and 2004 Plans (with similar definitions), is intended to provide for small- and medium-sized industrial uses which are not likely to have adverse effects upon adjacent properties. Such uses are intended to provide a buffer between residential and/or commercial land uses and other heavier industrial uses.

- The Regional Commercial designation, as defined in the 1982 and 2004 Plan (with similar definitions), is intended to provide for the establishment, expansion and preservation of the City's primary regional shopping center and its peripheral areas. This district offers the widest range of goods and services.

- The Mixed Use–Business Park designation is a new designation in the 2004 Plan. This designation provides for mixtures of uses in the same building, on the same parcel, or within the same area.

(c) Housing Element

The General Plan Housing Element has been developed pursuant to Section 65580 et. seq. of the California Government Code. Under that code, the housing element is a required element of the City's General Plan and must consist of "an identification and analysis of existing and projected housing needs and a statement of goals, policies, quantified objectives, and scheduled programs for the preservation, improvement and development of housing."

The Housing Element of the General Plan, as reflected in the 2004 update, is based on the previously adopted 2002 Housing Element. It includes the data originally presented in the 2002 version, and includes the same policies with only minor variation. The Housing Element identifies the housing needs for the 2000 to 2005 period. The needs assessment identified a need for 623 housing units that would be required between 1998 and 2005, of which 117 units would be for very low income households, 104 units would be for low income households, 143 units would be for moderate income households and the remaining 259 units would be for above moderate income households. It also identified a future City population that would need to be housed in the amount of 7,817 between 2005 and 2020.

The policies that are applicable to the proposed Project are listed, and discussed in Table 10 in the Plan Consistency analysis on page 137.

(d) Economic Development Element

The Economic Development Element of the General Plan is a new element that was included in the 2004 General Plan update. This Element is linked to the Land Use and Housing Elements and is an optional (i.e., not required under State Law) element. It is intended to provide guidance for economic development so as to attain an economically viable and self-sustaining community. It intends to support the provision of a range of housing and employment opportunities that meet the needs of residents and workers alike, to attract families and businesses to create demand for planned land uses, and to establish and fund public service levels that preserve or enhance Carson's quality of life.

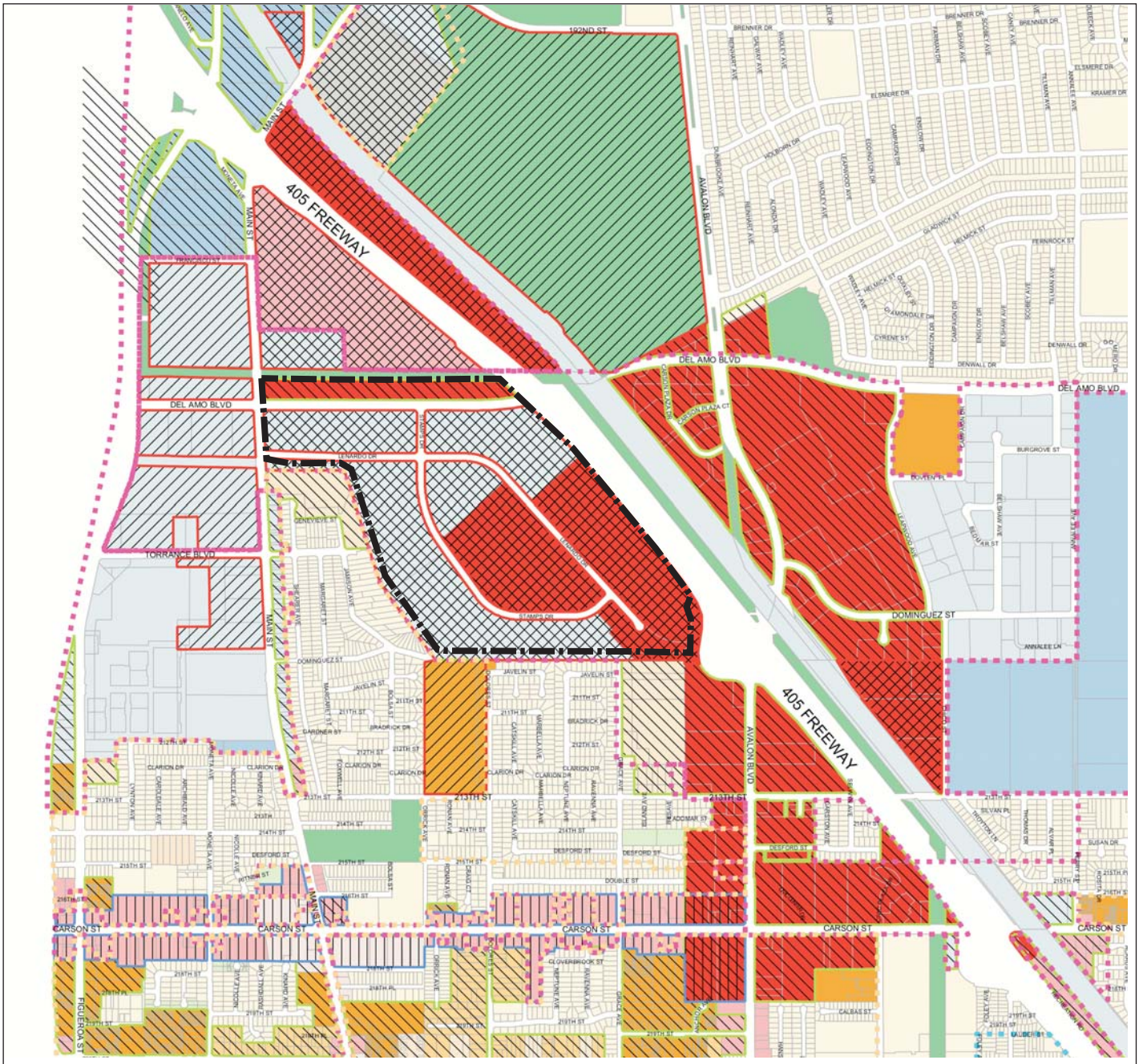
The Housing Element includes Goals and Policies that address a variety of economic issues that are being addressed by the City. The Policies that most directly pertain to the land use issues addressed in this Section of the Draft EIR are listed, and discussed in Table 10 in the Plan Consistency analysis on page 137.

(2) Carson Zoning Ordinance

The City of Carson implements its General Plan through Specific Plans and Zoning. The Project site is not currently included within the boundaries of an adopted Specific Plan. The existing site zones are designated in the City's Zoning Map. The designated zones for the Project site are shown on Figure 11 on page 129. As indicated, they include Regional Commercial with Design Overlay on the 11-acre parcel north of Del Amo Boulevard, Light Manufacturing with Design Overly and Organic Refuse Landfill Overlay on the western portion of the 157-acre parcel, and Regional Commercial with Design Overlay and Organic Refuse Landfill Overlay on the eastern portion of the 157-acre parcel. The Ordinance establishes regulations for each zoning classification that limit the types of development allowed, and that establish design regulations addressing such topics as permitted densities, maximum building heights, setbacks, etc.

Overlay zones are an implementation mechanism used to address unique site conditions at particular locations that must be addressed separately from the uses and standards that are otherwise applicable under the standard zoning classification. Overlay zones require additional design standards that are related more to the unique site conditions than the type of use occurring within the sites.

The Design Overlay (DO) designation provides for Site Plan and Design Review of future development within the designated areas in order to achieve special standards of design, architectural quality, style and compatibility, landscape treatment, and functional integration of neighboring developments. Review of projects in the DO Overlay zone require findings by the Planning Commission that the project is compatible with the General Plan, any specific plans for



PCR

Not to scale

Figure 11
Existing Zoning

Source: City of Carson

the area and surrounding uses; compatibility of architecture and design with existing and anticipated development in the vicinity, including the aspects of site planning, land coverage, landscaping, appearance and scale of structures and open spaces and other features relative to a harmonious and attractive development of the area.

The Organic Refuse Landfill (ORL) Overlay designation provides for the public health, safety and general welfare by regulating uses of organic refuse landfill sites and ensuring that proper mitigation measures are taken to eliminate or minimize hazards to persons and property and environmental risks associated with such sites including, but not limited to, toxicity, fire, explosion and subsidence. Development within such designated areas require a report by a licensed civil engineer for protective system(s) designed to eliminate or mitigate the potential hazards and environmental risks associated with the proposed use. Factors that must be addressed include such items as evaluation and control of methane gas, monitoring and inspections/reports, and measures to eliminate odor.

(3) Carson Redevelopment Plan

The Project site is located within an area that is under the oversight of the Carson Redevelopment Agency (CRA). The CRA has been established by the City of Carson pursuant to the California Community Redevelopment Law (Health and Safety Code Section 33000, et seq.). Its purpose is to eliminate blight in targeted areas through various efforts to improve or upgrade public and private properties and to provide programs for economic development. The Redevelopment Agency is also actively working to remediate and redevelop Brownfields sites in the City.

In pursuit of its mission, the Carson Redevelopment Agency currently has Redevelopment Plans for three Redevelopment Project Areas. The proposed Project is located within Area No. One, which has an approved Plan, specifically the Amended and Restated Redevelopment Plan (Sixth Amendment to Redevelopment Project Area No. One, 1996). The Redevelopment Plan establishes a process and framework for the implementation of a development program within its jurisdictional area that is consistent with its mandate and goals.

The Redevelopment Plan includes, among other items, a list of permitted uses for the Redevelopment Area and a list of Plan Goals that are to be met through implementation of the Plan. The permitted uses include the following: Heavy Industrial, Light Industrial, Regional Commercial, General Commercial (including Mixed Use–Residential), Low Density Residential, High Density Residential, Open Space, Civic Center, School, Animal Shelter, and special uses such as specific plan uses. A listing of the Plan Goals that are applicable to the proposed Project, and a related discussion, are provided in Table 10 in the Plan Consistency analysis on page 137.

(4) Southern California Association of Governments

The Project site is also located within the planning area of the Southern California Association of Governments (SCAG). SCAG is a Joint Powers Agency established under California Government Code Section 6502 et seq. Pursuant to federal and state law, SCAG serves as a Council of Governments, a Regional Transportation Planning Agency, and the Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial counties. For planning purposes this area is divided into 13 subregions. The Project site is located within the South Bay Cities subregion.

SCAG's mandated responsibilities include developing plans and policies with respect to the region's population growth, transportation programs, air quality, housing, and economic development. Specifically, SCAG is responsible for preparing the Regional Comprehensive Plan and Guide (RCPG), Regional Transportation Plan (RTP), and Regional Housing Needs Assessment (RHNA), in coordination with other state and local agencies.

In 1996, SCAG adopted the Regional Comprehensive Plan and Guide (RCPG), which provides a framework for decision-making with respect to the growth and changes that can be anticipated by the year 2015 and beyond. The RCPG contains a general overview of federal, state, and regional plans applicable to the Southern California region and serves as a comprehensive planning guide for future regional growth. Its chapters are divided into three categories: core, ancillary, and bridge. The core chapters include Growth Management (adopted June 1994), Regional Transportation Plan (adopted April 2004), Air Quality (adopted October 1995), Hazardous Waste Management (adopted November 1994), and Water Quality (adopted January 1995)—all of which are a result of, and respond directly to, federal and state planning requirements. They constitute the base on which local governments ensure consistency of their plans with applicable regional plans under CEQA. The Air Quality and Growth Management chapters contain both core and ancillary policies.

Ancillary chapters address issues relative to the Economy, Housing, Human Resources and Services, Finance, Open Space and Conservation, Water Resources, Energy, and Integrated Solid Waste Management. These chapters address important issues facing the region and may reflect other regional plans. These chapters do not, however, contain actions or policies required of local government. Hence, they are entirely advisory and establish no new mandates or policies for the region. Bridge chapters include the Strategy and Implementation chapters, functioning as links between the Core and Ancillary chapters of the RCPG. The primary goals of the RCPG are to improve the standard of living, enhance the quality of life, and promote social equity. The RCPG contains policies relative to advancing these goals.

Policies that pertain to the land use issues addressed in this Section of the Draft EIR are listed, and discussed in Table 11 in the Plan Consistency analysis on page 156.

(5) Los Angeles County Congestion Management Program

The Los Angeles County Metropolitan Transportation Authority (Metro) administers the Los Angeles County Congestion Management Program (CMP), a state-mandated program designed to address the impact urban congestion has on local communities and the region as a whole. The CMP, last revised in 2004, includes a hierarchy of highways and roadways with minimum level of service standards, transit standards, a trip reduction and travel demand management element, a program to analyze the impacts of local land use decisions on the regional transportation system, a seven-year capital improvement program, and a county-wide computer model to evaluate traffic congestion and recommend relief strategies and actions. The primary goal of the CMP is to reduce traffic congestion in order to enhance the economic vitality and quality of life for all affected communities. The CMP guidelines specify that those freeway segments, where a project could add 150 or more trips in each direction during the peak hours, be evaluated. The guidelines also require evaluation of all designated CMP roadway intersections where a project could add 50 or more trips during either peak hour. Further discussion of the CMP can be found in Section IV.C, Traffic, of this Draft EIR.

(6) South Coast Air Quality Management District Air Quality Management Plan

The Project site is also located in the South Coast Air Basin, a non-attainment area and the nation's only area classified as extreme in its failure to meet the National Ambient Air Quality Standards for ozone, carbon monoxide, and particulate matter. The South Coast Air Quality Management District (SCAQMD) in its Air Quality Management Plan (AQMP) sets forth an attainment program based on projected population and employment growth and air quality management and control measures. The SCAQMD is responsible for compliance with federal and state air quality legislation in the Los Angeles County area. In conjunction with SCAG, the SCAQMD is responsible for establishing a comprehensive program to achieve federal and state air quality standards. The success of programs in meeting air quality standards are reliant in part on the types and locations of development that occurs and the relationship of that development to the transportation network.

The AQMP is incorporated into the State Implementation Program (SIP), which constitutes all Air Quality Management Plans prepared by all air quality management districts in the state. The SIP is the state's plan that demonstrates compliance with state and federal air quality standards. The 1990 Clean Air Act amendments require every ozone non-attainment area classified as serious, severe or extreme to prepare a comprehensive attainment plan (i.e., California State Implementation Plan for Ozone). The California Implementation Plan for Ozone was submitted to the US Environmental Protection Agency (EPA) in November 1994 and approved in September 1996. This plan identifies six ozone non-attainment areas in California. Each non-attainment area is assigned a statutory deadline for achieving the national ozone standards. Consistency with the SCAQMD's AQMP is evaluated in Section IV.G, Air Quality, of this Draft EIR.

3. PROJECT IMPACTS

a. Methodology

The analysis of land use impacts addresses three issues. The first issue is consistency of the proposed Project with adopted plans and policies that govern land use on the Project site. The analysis of consistency with adopted regulations and policies is based on the following: (a) a listing of the applicable regulations and policies; (b) for each item in the list, an evaluation of the relationship between the Project features and the development anticipated in the regulation or policy; and (c) a determination as to whether the Project features would be compatible with features anticipated in the regulation or policy.

Second, the land use analysis addresses potential changes in the land use patterns that could occur in the area with Project implementation. This analysis is based on field surveys and interpretation of aerial photographs, which are reflected in a description of the existing land use patterns. The analysis compares the proposed uses and Project features with those adjacent to the Project site and those in the larger vicinity to identify potential changes in land use relationships.

The third issue addressed is the potential affect of Project development on the sustainability of existing commercial uses. An economic analysis has been performed to determine whether the addition of the new commercial activity at the Project site could cause substantial adverse affects on existing commercial activity, and whether there could potentially be a degrading of the physical environment due to existing businesses falling into vacancy and disrepair.

b. Thresholds of Significance

A significant land use impact is considered to occur under the following conditions:

- The proposed Project would not be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment.[15]

[15] *It is important to note that an inconsistency with an individual land use policy or regulation does not, unto itself, necessarily indicate a significant impact to the environment. This criterion of significance is focused on whether a project is generally compatible with and does not frustrate attainment of adopted land use policies. Impacts on the environment pursuant to CEQA ordinarily focus on changes in the physical environment. A plan or policy inconsistency is considered significant if it would directly or indirectly lead to a physical impact on the environment.*

- The proposed Project would result in the division, disruption or isolation of an existing established community or neighborhood.
- The proposed Project would adversely affect the viability of retail uses within the market area that the Project is intended to serve such that the existing retail uses could fall into long-term physical disrepair unable to recover with forecasted increases in economic demand in the future.

c. Analysis of Project Impacts

(1) Characteristics of the Proposed Project

Section II, Project Description, provides a detailed discussion of the characteristics of the proposed Project. As described therein, the Project would be subject to maximum development limitations, use locations and design constraints that would be implemented through the Carson Marketplace Specific Plan. The key Specific Plan features that would shape the overall character of the development include the following:

- The total amount of development would be constrained by the following maximum development limits: 1,550 residential units and 1,995,125 square feet of commercial activity (inclusive of the 300 hotel rooms);
- Permitted commercial uses would be limited to the types and locations specified in the Specific Plan in a manner that would be consistent with the Project's proposed use concept (i.e., mixed use–residential with neighborhood commercial, regional commercial, visitor-serving commercial recreation/entertainment, and restaurants).
- Residential Density would be limited to 60 units per acre, and commercial floor area (FAR) would be limited to 33 percent (0.33) of the Project site.[16]
- Residential building heights would be limited to 75 feet, with mixed-used residential over commercial development south of Del Amo Boulevard toward the eastern edge of the Project site limited to 85 feet.. Commercial building heights would be limited based on building size and function. Generally, the largest portion of the commercial buildings would be limited to 32 feet in height, with incremental increases in height to 52 feet at limited locations. The theater and hotel could have base heights up to 60 feet and 75 feet, respectively, with additional heights on some architectural features up to 80 feet and 85 feet at limited locations.

[16] *Floor area ratio (FAR) is the ratio of the building area to the lot area. For example a project with a FAR of 0.5 could reflect a project with a one-story building covering one half of the site, or a two story building covering one fourth of the site.*

- Project setbacks would limit development along the major project edges to the following: (1) 110 feet along the I-405 Freeway, (2) 70 feet facing the Torrance Lateral and existing residential development, (3) 10 feet along Main Street and Del Amo Boulevard on the north side of Del Amo Boulevard (from the back of the sidewalk), and (4) 20 feet along Main Street and Del Amo Boulevard on the south side of Del Amo Boulevard (from the back of the sidewalk). Internal setbacks would be provided in the mixed use areas, along Del Amo Boulevard. They would vary from 10 feet to 25 feet depending location and type of uses. Setbacks between residential uses and commercial buildings, or parking structures would be 25 feet.

The Conceptual Plan presented in Section II, Project Description (see Figure 4 on page 76, in particular) represents one way that the Project site could be developed based on the development standards established under the Carson Marketplace Specific Plan. Under the Conceptual Plan, mixed-use residential and neighborhood retail development would occur along the northern part of the Project site and two sides of Del Amo Boulevard, major regional commercial uses would be developed along the southwestern and southern parts of the Project site, and a specialty retail/lifestyle/entertainment district would be provided in the central part of the Project site that adjoins the I-405 Freeway.[17]

(2) Project Compatibility with Land Use Plans, Policies, and Regulations

(a) City of Carson

(i) Land Use Plans and Policies

As described in Subsection II.b, above, the proposed Project falls within the boundaries of numerous plans that establish policies, goals and objectives for development in the City of Carson and the Project area, in particular. Further, there are numerous regulations that control the amounts and characteristics of land use development. A listing of the policies, goals and objectives that are applicable to the proposed Project and the issues addressed in this Land Use Section of the Draft EIR are listed in Table 10 on page 137.[18] Listed policies, goals, and objectives, as applicable, are taken from the General Plan's 2004 Land Use Element, 1982 Land

[17] *As noted in the Project Description, the Specific Plan regulations pertaining to Development District 3 are proposed to be implemented by an overlay zone to the existing Commercial Regional (CR) zone. Thus, the property owner of Development District 3may choose to process a development permitted pursuant to either the Carson Marketplace Specific Plan regulations and development standards discussed here, or the regulations of the CR zone. If the property owner of District 3 chooses to pursue a development program different than the one analyzed in this Draft EIR, additional CEQA review may be required.*

[18] *Terminology amongst the plans varies so that items stating similar intentions on the part of the City may be referred to as policies in one case, and goals in another. In some cases, goals as subcomponents of policies, and in others policies are subcomponents of goals. The listed items in Table 10, while based on differing terminology, state the equivalent intentions on the part of the City.*

Use Element, 2002/2004 Housing Element, and 2004 Economic Development Element and the Redevelopment Agency's Redevelopment Plan for Project Area No. One Merged and Amended.[19] Table 10 also discusses the relationship of the proposed Project with each of the listed items. While many in number, those policies, goals and objectives establish a few basic intentions for development at the Project site and those basic intentions can be summarized as follows:

- Provide for the productive reuse of a large brownfield site (i.e., remediate existing on-site contamination);
- Support development within one of the City's Redevelopment Areas while also contributing to the economic base of the City and creating both short- and long-term employment opportunities for the residents of the Redevelopment Project Area and the City;
- Provide a mixed-use development with shopping, entertainment, restaurant, hotel and residential uses, thus supporting pedestrian/alternative travel modes while reducing vehicle miles traveled;
- Contribute to the availability of a variety of housing types, prices and tenure in order to satisfy community demand and need; and
- Provide a signature project that would maximize the advantages of the site's location in terms of visibility and proximity to the San Diego Freeway, provide an enhanced urban center within the central portion of the City, and serve as an identifiable destination for on-site, City, and regional residents.

As described in Table 10, the proposed Project would support of all of these basic intentions and be supportive of all of the City of Carson goals and policies listed in Table 10. Therefore, the proposed Project would be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment, and impacts related to City policies would be less than significant.

(ii) Land Use Plan Designations

As described above in Subsection 2.b.1.(b) on page 125, the Land Use Element of the General Plan establishes the land use framework for the development of uses within the City. The Land Use Designations for the City per the 1982 and 2004 Land Use Maps are shown in

[19] *This analysis addresses the Land Use Elements of both the 1982 and 2004 Plans in order to address currently adopted policies, as well as previous policies and issues that may be raised under the legal challenge to the 2004 Plan.*

Table 10

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy		Analysis of Project Consistency
City of Carson General Plan, Land Use Element (2004)—Plan Policies		
LU-4.1	Direct Redevelopment Agency investments to those economic activities and locations with the greatest potential economic return.	The proposed Project would convert a non-productive site to a useful one through site remediation. It would add economic development within the central part of the City and serve as a gateway project. Also, with the South Bay Pavilion, the proposed Project would establish a large, clearly identified area of regionally serving economic activity, and serve the needs of the local Carson Community.
LU-5.1	Coordinate Redevelopment and Planning activities and resources to maximize commercial opportunities.	The proposed Project is being developed in Redevelopment Project Area No. One, pursuant to the Redevelopment Plan for that area. It is also being developed pursuant to numerous General Plan policies as discussed in the remainder of the Table.
LU-5.2	Implement and expand strategies to market, attract, and/or retain retail commercial areas and encourage businesses to participate.	The proposed Project would establish the Project site as a signature project along the I-405 Freeway, well located with regard to other freeways. The Project would offer high visibility in a new, planned development. It would include entertainment uses to attract visitors and meet the needs of local population Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
LU-5.3	Identify unique economic opportunities, such as niche markets, that will allow the City to capitalize on its location, its cultural diversity, and the tourism industry in the region.	The proposed Project would provide a regional facility in a mixed-use development, visibly noticeable along a major freeway corridor. The large scale of the Project and the proposed mix of visitor and local serving uses would create an opportunity to support a large range of uses, including specialized markets.
LU-6.2	Achieve a sustainable land use balance through provision of incentives for desired uses; coordination of land use and circulation patterns; and promotion of a variety of housing types and affordability.	The proposed Project would occur pursuant to the Area One Redevelopment Plan and its policies and opportunities. The proposed Project would include an internal circulation system that would be linked with the regional network and linked to new/improved freeway access at Avalon Boulevard. The Project's mitigation measures would include improvements to reduce impacts on the local road network. (Impacts would be reduced to less than significant levels, except at one location where impacts would be reduced, although not to a less than significant level.) The proposed Project would add up to 1,550 new housing units including both rental and ownership uses, thus adding to the range and mix of housing available in the City of Carson. Also, it would include affordable housing in accordance with the

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy		Analysis of Project Consistency
		Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement). Retail uses would serve both local (City residents) and regional populations. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
LU-6.3	Consider establishing minimum land use density requirements in certain areas such as mixed-use zones to provide more efficient, consistent, and compatible development patterns while also promoting greater potential for pedestrian and transit-oriented development.	The proposed Project would be implemented under a Specific Plan that allows for mixed-use development in an efficient manner. A minimum floor area ratio of 1.5 is established for vertically mixed-use development. Density and height limits would allow for mid-rise residential development including densities up to 60 units/acre. The Project includes provision for pedestrian and bicycle transit and can be linked to nearby public transit routes.
LU-6.4	Coordinate redevelopment and planning activities and resources to balance land uses, amenities, and civic facilities.	The proposed Project is being developed in Redevelopment Zone No. One, pursuant to the Redevelopment Plan for that area. It is also being developed pursuant to numerous General Plan policies as discussed in this Table. It is a mixed-use development with visitor amenities; e.g., retail entertainment and residential uses. The conceptual Plan identifies numerous plazas to enhance the pedestrian experience.
LU-6.6	Attract land uses that generate revenue to the City of Carson, while maintaining a balance of other community needs such as housing, open space, and public facilities.	The proposed Project would include up to approximately 1,995,125 sq.ft. of commercial use that would be generating revenue to the City, as well as up to 1,550 housing units intermixed with plazas and open space.
LU-7.3	Promote the use of buffers between more intensive industrial uses and residential uses.	The proposed Project would include no industrial uses. New residential development would not be located adjacent to intensive industrial uses.
LU-8.1	Amend the Zoning Ordinance to provide for those Mixed Use areas identified on the General Plan Land Use Plan.	The Project site is designated for Mixed Use–Business Park in the 2004 General Plan. The Project would involve a General Plan Amendment and Zone change to integrate the proposed Specific Plan into the City's principal planning documents. The Specific Plan would extend the General Plan's mixed-use designation to include residential development and allow for the appropriate mix of uses.

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
LU-8.3 Locate higher density residential uses in proximity to commercial centers in order to encourage pedestrian traffic and provide a consumer base for commercial uses.	The proposed Project includes high density residential development within a mixed-use project containing up to 1,995,125 sq.ft. of commercial activity. The site design includes a pedestrian circulation system that connects the various components of the site.
LU-11.1 Target potential sites or areas for the development of signature projects.	Project implementation would create a signature project at a location that has been identified as being conducive to such a project, due to the site's location along the I-405 Freeway, visual accessibility from the I-405 Freeway and its location within the central area of Carson.
LU-11.2 Encourage development of desired uses such as quality retail, restaurant uses, and entertainment in targeted areas.	The proposed Project would include up to 1,995,125 sq.ft. of commercial space. Based on the current Conceptual Plan, 81,125 sq.ft. is designated for restaurants, and 214,000 sq.ft. is designated for commercial recreation/entertainment.
LU-15.1 Encourage the location of housing, jobs, shopping, services and other activities within easy walking distance of each other.	The proposed Project includes mixed uses with up to 1,550 residential units and up to 1,995,125 sq.ft, within the Project site. The site design includes a pedestrian circulation system that connects the various components of the site thereby facilitating one type of pedestrian activity targeted by this policy.
LU-15.2 Maintain a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live in Carson.	The proposed housing units, up to 1,550 units in total, would contribute to the range of housing opportunities within the City of Carson. It would add rental and for-sale units that increase the diversity of available housing Also, it would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement).
LU-15.3 Ensure that community transportation facilities are connected to a larger transit network.	The proposed Project's internal circulation system would provide access to Main Street and Avalon Boulevard via Del Amo Boulevard, with accessibility to the I-405 Freeway via new ramps at Avalon Boulevard.
LU-15.4 Develop a center focus within the community that combines commercial, civic, cultural and recreational uses.	The Project site is located within the central part of the City. The Project's high-intensity development with commercial and entertainment venues would contribute development at a location amidst the Carson Civic Center, the Home Depot Center, California State University at Dominguez Hills, the South Bay Pavilion, and the Victoria Golf Course and Park, thus adding to the centrality of such community uses.

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
LU-15.5 Ensure that the design of public spaces encourages the attention and presence of people at all hours of the day and night.	The proposed Project is anticipated to offer entertainment and dining as well as shopping opportunities, oriented around a central Plaza. These activities would continue into the evening hours. The Specific Plan includes standards for public art and landscaping to enhance the public spaces.
LU-15.6 Ensure development of pedestrian-oriented improvements which provide better connections between and within all developments while reducing dependence on vehicle travel.	The proposed Project includes an internal system of pedestrian sidewalks and pathways that would interconnect all portions of the Project site.
City of Carson General Plan, Land Use Element(1982)—Goals and Objectives	
<u>General</u>	
1. Allow each type of land use sufficient area to develop to the fullest extent indicated by the economy and general welfare.	This general policy is reflected in the General Plan land use designations. The Project's support of the expected land use patterns is discussed below (Subsection 3.C.2.(a).(ii)) on page 136.
6. Encourage the development of stable industrial and commercial uses which will broaden the economic base to create a more self-sufficient local economy.	The proposed Project would include up to 1,995,125 sq.ft. of space for commercial development. Commercial activities are anticipated to include a broad array of uses to meet the needs of the local community.
<u>Residential Land Use</u>	
1. Residential areas should be organized into distinct districts and located in harmonious relationship with other adjacent or nearby land use activities.	Residential development would occur either as distinct developments, or in mixed-use configurations within Development Districts 1 and/or 3. While not necessarily occurring in distinct districts, development would occur pursuant to various design and development standards established in the Specific Plan to ensure harmonious relationships between uses; e.g., standards regarding site planning, building massing, color and materials, building detailing, etc.
2. Housing should be provided for a variety of income groups.	The proposed Project would add rental and for-sale units that vary in character from much of the existing housing within the City. Development would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement).
3. Residential areas should be served with schools, adequate parking, recreational parks and shopping areas in close proximity.	The proposed Project would provide proximity between residential and commercial uses, and would meet all parking needs on site. The Project residents would have access to twelve nearby parks; e.g., Victoria Golf Course and Park and schools. A new school (South Region High School # 4) is planned for the Project area. (Section IV.I.3, Schools, indicates that the Project could cause an exceedance of school capacity, but would mitigate

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
	Project impacts through the payment of SB 50 fees. Section IV.I.4, Parks and Recreation, indicates that project impacts on parks would be less than significant with the implementation of Project mitigation.)
5. Realistic density standards should be established to ensure adequate space, light and safety.	The Specific Plan includes density standards, including a maximum of 60 du/acre for residential development. The anticipated design of the Project includes provision for private open space, and safety.
Commercial Land Use	
1. The Carson Mall and its peripheral areas should continue to serve as the major retail center in the City offering the widest range of goods and services to the citizens of Carson and nearby communities. This regional shopping center, anchored on one side by the Civic Center complex and on the other side by California State University-Dominguez Hills, serves as a needed focal point for the City of Carson and links the northern and southern areas of the City.	The Project site lies in an area that is peripheral to the Carson Mall, now known as the South Bay Pavilion. The proposed Project would add to the focus of the central portion of the City as a major retail area. It would expand and broaden the intent of this policy by establishing a large complimentary commercial center in proximity to the South Bay Pavilion.
3. Most commercial areas should be served with arterial highway access and all commercial businesses should have an adequate supply of parking.	The proposed Project's internal circulation system would provide access to Main Street and Avalon Boulevard via Del Amo Boulevard, with accessibility to the I-405 Freeway via new ramps at Avalon Boulevard. The Project site would include on-site parking to meet the Project's parking needs.
4. Commercial activities should be screened or buffered from adjacent residential uses wherever possible.	The proposed Project includes commercial development along the southern part of the Project site, opposite to the residential neighborhoods beyond the Torrance Lateral to the south. As described more fully in Subsection 3.C.(3).(b) on page 164, existing residential units would be separated from proposed development by a minimum of approximately 185 feet, inclusive of the intervening Torrance Lateral (75 feet wide with service roads) and a landscaped slope that runs along this face of the Project site. The landscaped slope would rise approximately 13 to 16 feet to the Project site's finished grade level and Project development. This landscaped, horizontal and vertical separation would provide buffering. Within the Project site, residential development and commercial development would likely be placed in proximity to each other, as mixed-use development components. Such development would occur pursuant to the development and design guidelines set forth, for example, in the Carson Marketplace Specific Plan, regarding; landscaping, site planning, building massing, color and materials, building detailing, separation

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
	between residential and commercial uses, etc. New residents to the Project site would have the opportunity to select residential locations based on their preferences regarding accessibility to the various on-site commercial activities.
5. Commercial activities should be encouraged to have a broader commercial base to develop a self-sufficient economy.	The large scale of the Project and allowable mix of uses would support a large range of commercial activity. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
City of Carson General Plan, Housing Element (2002/2004)—Policies	
H-1.3 Promote economic well being of the City by encouraging the development and diversification of its economic base.	The proposed Project would include up to 1,995,125 sq.ft. of space for commercial development. Commercial activities are anticipated to include a broad array of uses; e.g., regional commercial, neighborhood commercial, restaurants, commercial recreation/ entertainment, and hotel uses. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
H-1.5 Establish and maintain development standards that support housing development while protecting the quality of life.	The proposed Project would provide up to 1,550 housing units. These housing units would be developed subject to development and design guidelines established in the Specific Plan, addressing such items as site planning, building massing, color and materials, building detailing, etc.
H-3.1 The development of quality affordable housing.	The proposed Project would include affordable housing in accordance with the Redevelopment Plan and applicable law. The Redevelopment Agency would address affordable housing through an Owner Participation Agreement.
H-3.2 Work to expand the resource of developable land by making underutilized land available for development.	The proposed Project would put to productive use a contaminated, former landfill/brownfield site, via site remediation.

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy		Analysis of Project Consistency
H-3.3	Promote a variety of housing types, prices and tenure in order to satisfy community demand and need.	The proposed housing units, up to 1,550 units in total, would add rental and for-sale units that increase the variety of housing opportunities within the City. Development would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement).
H-3.6	Promote the development of multifamily zoning.	The Project's Specific Plan would re-designate lands that are currently designated for non-residential development to a Mixed-Use zone that provides for multifamily residential unit up to 60 units per acre in density.
H-6.8	Continue to work toward increasing the number of owner-occupied units.	The proposed Project includes provision for up to 1,150 for-sale units.
City of Carson General Plan, Economic Development Element (2002)—Policies		
ED-1.2	Encourage the development of quality housing.	The proposed Project would include up to 1,550 new housing units. These units would be required to meet Specific Plan standards for design, landscaping, etc.
ED-1.4	Strengthen the physical image of Carson through visual enhancement along freeway corridors, major traffic routes, and areas adjoining residential neighborhoods. To this end: • Aggressively pursue code enforcement activities; • Develop good design standards; and • Establish a City identity.	The proposed Project has been designed to take advantage of its location adjacent to the I-405 Freeway. The proposed Project would: (1) present a substantial new development along the freeway edge that would attract public attention; (2) provide identification of the Project's visitor-oriented commercial recreation/ entertainment activities through building placement and/or signage; (3) include, through Specific Plan requirements, a set of sign regulations that would integrate the Project's proposed signage program with the overall aesthetic concept for the Project; and (4) include, through the Specific Plan, provisions for landscaping/ aesthetic treatment along the Project's freeway edge.
ED-1.6	Provide appropriate infrastructure to support economic development.	The proposed Project would include an internal infrastructure system that is designed to meet all on-site uses. As described in Sections J.1, Water Services, J.2., Sewer Services, and J.3, Electrical Service, the Project would not have significant impacts on existing services.
ED-3.6	Capitalize on potential physical and market linkages among land uses.	The proposed Project is a mixed-use Project that would include up to 1,550 units. These uses would provide an estimated 6,969 new residents that would support the Project's commercial components. The Project population would also support other commercial enterprises in the Project vicinity, and the commercial component would serve populations in nearby neighborhoods.

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy		Analysis of Project Consistency
ED-4.3	Support public/private efforts and link infrastructure and service costs with development projects.	The proposed Project is a privately sponsored project that would be developed within the City of Carson Redevelopment Agency's Redevelopment District 1 and would be developed pursuant to the goals of the Redevelopment Plan as described below.
ED-4.4	Encourage development opportunities that increase economic gains to the City.	The proposed Project would include up to 1,995,125 sq.ft. of space for commercial development. Commercial activities would include a broad array of uses; e.g., regional commercial, neighborhood commercial, restaurants, commercial recreation/entertainment, and hotel uses. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
ED-7.1	Encourage the diversification of land uses, while not alienating existing businesses or industries requiring space in Carson.	The proposed Project would increase the diversification of land uses by: (1) adding substantial amounts of new commercial and residential development; (2) including commercial activities that do not presently occur, or are non-present in the City; e.g., commercial recreation/ entertainment; (3) including housing that varies in density and relationship to commercial activity from the existing prevalent housing. The City has large amounts of industrial land available, including sites in the vicinity of the proposed Project, most of it located in districts better suited for industrial activity than the proposed Project. The Project's potential effect on existing businesses is addressed below in Subsection 3.c.(4) on page 165. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
ED-7.2	Improve the actual and perceived image of the City through improved design standards, amenities, security, continuing public improvements and positive advertising campaigns.	Development would occur pursuant to various design and development standards established in the Specific Plan to insure harmonious relationships between uses; e.g., standards regarding site planning, building massing, color and materials, building detailing, etc. These standards are more detailed than those currently included within the City Zoning Ordinance. See Section IV.B, Aesthetics, for more discussion.
ED-10.2	To develop signature projects,] encourage development of desired uses such as quality retail, restaurant uses, and entertainment in	The proposed Project uses include commercial recreation/ entertainment and restaurant uses, and an organized in a visitor-oriented district. The Project is of sufficient size

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
target areas.	to offer a range of such uses and support the anticipated inclusion of quality retail and restaurant uses. The Project is located within the central City at a highly visible location, one targeted for such development in existing plans.
ED-11.1 Encourage the redevelopment and cleanup of underutilized and contaminated land.	The proposed Project would put to productive use a contaminated, former landfill/brownfield site, via site remediation.
ED-11.2 Maintain proper infrastructure levels and flexible financing options to encourage redevelopment.	The proposed Project is a privately initiated Project that would be implemented in cooperation with the Carson Redevelopment Agency. It would include an internal infrastructure system that is designed to meet all on-site uses. As described in Sections J.1, Water Services; J.2, Sewer Services; and J.3, Electrical Service, the Project would not have significant impacts on existing services.
ED-11.3 Understand and promote available land inventory and initiate strategies to develop balanced land use planning.	The proposed Project would put to productive use a contaminated, former landfill/brownfield site, via site remediation. It would increase the amounts of housing and commercial activity within the City. Further, it would implement a mixed-use development with a mix/balance of uses that could serve as a model for mixed-use development.
ED-11.4 Encourage development of compatible uses and phase out non-conforming uses.	As described further, below, the Project's Specific Plan would limit uses on the Project site, and place the Project's larger commercial buildings and intensities in a non-residential district (District 2). The Specific Plan's development and design standards reduce potential conflicts between commercial and residential development in District's 1 and 3. As also discussed further below, the Project's commercial activity would avoid conflict with residential development to the south and southwest of the Project site due to vertical and horizontal distance, an intervening landscaped slope and design features for that development.
Carson Redevelopment Plan—Goals	
1. The elimination and prevention of the spread of blight and deterioration, and the conservation, rehabilitation, and redevelopment of the Project Area.	The proposed Project would put to productive use a contaminated, former landfill/brownfield site, via site remediation. It would add a substantial amount of new commercial activity to the City, improve the quality of the Project site, and generally enhance the Project vicinity. Potential secondary impacts on blight, due to lost economic opportunity at other locations within the City, is discussed below in Subsection 3.c.(4) on page 165. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
	proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
2. The encouragement, cooperation, and participation of residents, business persons, public agencies, and community organizations in the revitalization of the Project Area.	The proposed Project has been initiated by a private developer and is being implemented under a cooperative arrangement with the Carson Redevelopment Agency.
3. The provision of financial assistance to encourage private sector investment in the development and redevelopment of the Project Area.	The proposed Project has been initiated by a private developer and is being implemented under a cooperative arrangement with the Carson Redevelopment Agency.
4. The promotion of the economic well being of the Project Area by encouraging the diversification and development of its economic base, and to assist in both short and long term employment opportunities for the residents of the Project Area and the City.	The proposed Project would include up to 1,995,125 sq.ft. of space for commercial development. Commercial activities are anticipated to include a broad array of uses that would diversify and further develop the City's economic base; e.g., regional commercial, neighborhood commercial, restaurants, commercial recreation/entertainment, and hotel uses. Within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.
5. The improvement of housing and the assistance of low and moderate income persons and families to obtain homeownership.	The proposed housing units, up to 1,550 units in total, would contribute to the range of housing opportunities within the City of Carson. Also, it would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement).
6. The development of quality affordable housing.	The proposed Project would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement).
7. The provision of adequate roadways; traffic and circulation improvements to correct street deficiencies, alignment problems, and to eliminate road hazards; and to provide adequate street and freeway access throughout the Project Area.	The proposed Project would include an internal circulation system that would be linked with the regional network, and linked to new/improved freeway access at Avalon Boulevard. The Project's mitigation measures would include improvements to reduce impacts on the local road network. (Impacts would be reduced to less than significant levels, except at one location where impacts would be reduced, although not to a less than significant level.)
8. The stimulation of private sector investment in the full development of the Project Area.	The proposed Project is a privately initiated Project that is being developed pursuant to goals of the Carson Redevelopment Agency.

Table 10 (Continued)

Project Consistency with Applicable Land Use Policies of the City of Carson

Relevant Policy	Analysis of Project Consistency
9. The expansion of the resource of developable land by making underutilized land available for development.	The proposed Project would put to productive use, via site remediation, a contaminated, former landfill/brownfield site, adding 157 acres to the bank of developable land in the City.
10. The provision of needed or lacking public improvements and facilities which are sensitive to the environment.	The proposed Project would provide on-site infrastructure to meet the Project's needs. As described in Section IV.J, the Project would not have a significant impact on existing infrastructure.
12. The development of safeguards against noise and pollution to enhance the industrial, commercial, and residential community.	As described in Sections IV.G, Air Quality, and IV.H., Noise, the Project would include feasible mitigation measures to address potentially significant impacts regarding Noise and Air Quality.
14. The assembly and disposition of land into parcels suitable for modern integrated development with improved development standards, pedestrian, and vehicular circulation in the Project Area.	The proposed Project is an integrated, mixed-use development with a blend of residential and commercial uses, with an internal circulation that supports pedestrian travel. The proposed Project would be implemented via a Specific Plan that includes development and design standards.
Carson Redevelopment Plan – Objectives	
6. Focus traditional redevelopment activities in those portions of the Project Area, where appropriate, and provide the greatest visibility.	The proposed Project would establish the Project site as a signature project, large scale development, along the I-405 Freeway, well located with regard to major transportation facilities/freeways. The Project would offer high visibility in a new, planned development.
7. Update zoning designations within the Project Area to improve the City's competitiveness in the marketplace while generating desirable new development.	The Carson Marketplace Specific Plan would add a new mixed use designation on the Project site that would allow residential development as a component of the mixed-use array. This increases the number of uses that can be accommodated on the Project site, and enhances the attractiveness of the Project site for both residential and commercial developers.

Source: PCR Services Corporation, 2005.

Figure 10 on page 126. The 1982 designation is for Regional Commercial on the 11-acre parcel and the southeast and central portion of the 157-acre parcel; and Light Industrial for the

While the 2004 land use designation, Mixed Use–Business Park, allows the same uses on the Project site as the previous zoning, the designation varies in two respects. First, it allows more flexibility in the location of light industrial and regional commercial uses within the Project site by not restricting each part of the site for a single use. Second, it creates the possibility for the entire site to be developed in light industrial use only.[20]

The re-designation of the Project site is related to a similar re-designation of sites located on Main Street, opposite to the Project site, in the vicinity of Del Amo Avenue. In concert, the multiple sites offer a potential for a coordinated provision of light industrial, business park, and regional commercial uses in a transitional area between existing light industrial and regional commercial uses.[21] The re-designation recognizes a range of land uses that would be compatible with surrounding uses, while remaining flexible to accommodate market demand for the uses.

Project Consistency with the 1982 Land Use Map. The proposed Project would implement a new land use designation for the Project site: Carson Marketplace Specific Plan. The new designation would re-designate the site from light industrial and regional commercial uses to residential and regional commercial uses. This re-designation would be generally compatible with the previous designation for the following reasons:

- Commercial uses are allowed within industrial zones. Therefore, similar commercial development could occur within the Light-Industrial area under both the previous and the proposed designations. Use of the site for light-industrial uses is not required as such uses are not contemplated to occur within the Project site.

- The use of part of the Project site designated for light industrial uses for non-industrial use would not be a substantial detriment to the provision of light industrial activity within the City. The City has an unusually high amount of

[20] *The Business Park designation was developed to reduce land use conflicts between heavy industrial and residential uses that have historically occurred in the City and to accommodate a variety of businesses and professional offices, services, and associated business and retail activities in an attractive environment.*

[21] *Permitted light industrial uses are limited to those that "… provide for small-and medium-sized industrial uses which are not likely to have adverse effects upon adjacent properties. Such uses are intended to provide a buffer between residential and/or commercial land uses and other heavier industrial use." Also, as discussed in Subsection 3.C.(2)(a)(iii), below, the zoning that implements the land use designations includes provision for design considerations that address potential impacts of mixed-uses upon one another.*

industrial space, more than 50 percent of the City.[22] Therefore, numerous opportunities remain for light-industrial uses to occur elsewhere within the City.

- The 1982 Plan Goals for industrial use includes only one policy regarding the maintenance of industrial sites. Goal 6 states: "The City should attempt to maintain the industrial areas mainly in the sections of the City presently designated for industrial land uses. Goal 1 of the Commercial Land Use Goals, states: "The Carson Mall and its peripheral areas should continue to serve as the major retail center in the City offering the widest range of goods and services to the citizens of Carson and nearby communities…." Of the areas designated for light industrial use on the 1982 Land Use Map, the Project site is a small pocket that is located adjacent to residential development, and an area that could contribute to the establishment of a larger retail core within the periphery of the South Bay Pavilion, then called the Carson Mall. As such, use of the Project site for non-industrial uses would not disrupt larger industrial districts, or lead to potential conflicts between the Project's new residential development and industrial uses.

Project Consistency with the 2004 Land Use Map. The proposed Project would implement a new land use designation for the Project site: Carson Marketplace Specific Plan. The new designation would re-designate the site from its current Mixed Use–Business Park, which permits light industrial and regional commercial uses to a designation that permits residential and regional commercial uses. This re-designation would be generally compatible with the existing plan designation for the following reasons:

- Under the existing designation, the entire site could be developed for commercial uses, and therefore the use of the site for non-industrial uses is anticipated as a development option. The existing designation is intended to provide flexibility in the development of a site which is located between light industrial, regional commercial and residential uses. The designation provides an opportunity to meet the current market demand for development in a manner that is responsive to the site's unique location.

- The commercial development that could occur under the Mixed Use–Residential designation is equivalent to the commercial development that could occur under the Mixed Use–Business Park designation.

[22] *As described in Table LU-1 of the 2004 General Plan Update, in 2001, 5,497 acres out of 10,176.4 acres, 54 percent of the City is designated for industrial uses. Of that, 1,497 acres, is designated for light-industrial uses.*

- The addition of the residential development on the Project site would support numerous General Plan policies pertaining to the provision of housing. It would support those policies that encourage an increase in the amount of housing stock, and those that encourage an increase in the range of housing types and styles available. Further, it would support policies that encourage a full range of mixed-use development to provide greater opportunity for pedestrian and bicycle travel. At the same time, the introduction of residential uses on the Project site would not present an incompatible condition for existing off site uses.

As described in the previous paragraphs, the Project would be compatible with the plan map designations on the 1982 and 2004 General Plans, and would be supportive of the accompanying policies and regulations that support the existing plan map designations. Therefore, the proposed Project would be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment, and impacts related to City policies would be less than significant.

(iii) Zoning Regulations

As described above in Subsection 2.b.(2) on page 128, the City of Carson implements its General Plan through Specific Plans and Zoning. The Project site's existing zoning includes Regional Commercial with a Design Overlay on the 11-acre parcel north of Del Amo Boulevard; and Light Manufacturing with a Design Overly and Organic Refuse Landfill Overlay on the western portion of the 157-acre parcel, and Regional Commercial with a Design Overlay and Organic Refuse Landfill Overlay on the eastern portion of the 157-acre parcel. (See Figure 11 on page 129.)

These zoning categories provide a regulatory framework for implementing the City's General Plan land use designations for the Project site. These zoning categories delineate the uses that are allowed within each zone and provide development regulations regarding site requirements, site development standards, environmental effects/lighting and special requirements for certain uses. Of the various regulations, those that are most pertinent to the land use issues addressed in this Section of the Draft EIR include those related to allowable uses and development guidelines that address building massing; e.g., restrictions on building heights, setbacks, density, etc.

The Proposed Project would be implemented through a Specific Plan that would be Applicable to the Project site. The Specific Plan would replace the existing zoning in Districts 1 and 2 (the 157-acre parcel south of Del Amo Boulevard) with a Carson Marketplace Specific Plan designation. With regard to District 3, the 11-acre parcel north of Del Amo Boulevard, the

Specific Plan would be implementable as an overlay zone to the existing Commercial Regional (CR) zone in District 3 (the 11-acre parcel north of Del Amo Boulevard).[23] Under the Specific Plan designation and/or Specific Plan Overlay Zone, the Specific Plan would provide a set of regulations for the Project site. Those regulations would allow development of the Proposed Project as described above in Section II, Project Description, and analyzed in this Draft EIR. The following discussion identifies the relationship between existing zoning regulations and the types of development that they would allow, and the regulations that would be in effect under the proposed Specific Plan.

- Allowed Uses. The Specific Plan establishes two land use categories. The Commercial Marketplace (CM) category would be assigned to District 2. The CM category allows for a full range of commercial activity accommodating all of the Project's proposed commercial activity; i.e., neighborhood commercial, regional commercial, commercial recreation/entertainment, and hotel. Districts 1 and 3 would fall under the Mixed Use–Marketplace (MU-M) category. The MU-M category allows the same set of uses permitted within the RC category except for the following two variations: (1) it allows residential development; and (2) it does not allow regionally oriented stores that are greater than 50,000 square feet in size. These two variations support the establishment of a mixed-use community with the benefits of pedestrian access for residents (reduced vehicle miles traveled, etc), and market access for the businesses. At the same time, it restricts the establishment of the very large-scale, regionally oriented uses that generate larger levels of on-site population and traffic/parking from the residential areas. Thus, the range of commercial activity in the MU-M category is limited to a set of uses that can more easily achieve compatibility with the proposed residential uses, subject to appropriate design.

  The Specific Plan is similar to existing zoning to the extent that both would allow the Project's commercial activity. The Specific Plan would vary by introducing residential development to the Project site, while also allowing commercial uses. As described above, the introduction of residential uses implements a number of City policies. The addition of the residential uses would not cause adverse effects to commercial activity that might otherwise occur under the existing zoning. New residential development can occur in a mixed-use context that limits adverse affects on residential development with appropriate design constraints. For these reasons,

[23] *With an Overlay Zone, Development on the 11-acre parcel could occur under the provisions of the Specific Plan or pursuant to the regulations and development standards for the CR zone as set forth in Chapter 1 (Sections 9131.1 through 9138.71) of the Carson Municipal Code. Thus, the property owner of the 11-acre parcel may choose to process a development permitted pursuant to either the regulations and development standards for the CR zone or the regulations and development standards for the Carson Marketplace Specific Plan. If the property owner of the 11-acre parcel chooses to pursue a development program different than the one analyzed in this Draft EIR, additional CEQA review may be required.*

the proposed zoning changes are considered to be compatible with the existing zoning on the Project site.

- **Allowed Densities.** The Carson Marketplace Specific Plan establishes a maximum residential density of 60 units per acre, and a maximum commercial floor area ratio (FAR) of 0.33. Site density would also be limited by the total amount of development allowed: 1,550 units and 1,995,125 square feet of commercial use. Therefore, the Project's Specific Plan would place new restrictions on density on the Project site that would be more protective of the environment than the existing zoning.

  It may be noted that the Project's Specific Plan standards for residential density would be greater than the residential densities allowed elsewhere in the City; 60 units per acre versus 25 units per acre. Increased housing density at the Project site would support numerous City Policies that aim to increase the number and types of housing opportunities within the City. The Project's higher density housing would not occur within an existing neighborhood and would therefore not contrast with adjacent housing stock, or conflict with existing zoning standards aimed at limiting impacts on existing housing stock. The increased density would occur in an area that is suited for higher density development due to its Freeway accessibility. Further, the increased density would support the Project's mixed-use objectives. As the density/FAR limits would be established through a Specific Plan, the Project would not have any effect on zoning restrictions that are applicable to off-site locations. By adding limitations on the amount of development and specific density/(FAR) limitations, the Project's Specific Plan would add new limitations to development, and would therefore be compatible with the City's existing zoning provisions.

- **Maximum Height Limits**. The Carson Marketplace Specific Plan would establish a set of height limitations for the various site uses. Under these standards, residential development could have a maximum height of 75 feet, with mixed-used residential over commercial development south of Del Amo Boulevard toward the eastern edge of the Project site limited to 85 feet. Heights for commercial uses would vary, with the largest portion of the commercial buildings limited to 32 feet in height and incremental increases in height to 52 feet at limited locations. The theater and hotel could have base heights up to 60 feet and 75 feet, respectively, with additional heights on some architectural features up to 80 feet and 85 feet at limited locations.[24] In contrast, the Project site currently has no maximum height restrictions under the

[24] *The height limits and their effect on the overall massing of the proposed Project are discussed in more detail and are illustrated in Section IV.C, Aesthetics.*

existing Light Manufacturing and Regional Commercial designations.[25] Therefore, the proposed Project would establish a set of height requirements for the Project site where none currently exist, and would be more protective of the environment than the existing zoning.

It may be noted that the Project's Specific Plan standards for building heights would allow taller buildings than currently allowed under the City's Residential designation (30 feet), or Mixed Use designation (three stories or 45 feet, and four stories or 55 feet for buildings with affordable or senior households). At the same time, the Project's varied height restrictions would limit most commercial buildings to heights less than would be allowed under the Mixed Use designation. The Project's height limits, some greater than those allowed elsewhere in the City and some less, establish a set of restrictions that address the unique conditions for the Project and its setting. As the heights would be established through a Specific Plan, the Project would not have any effect on zoning restrictions that are applicable to off-site locations. The Project's height limits would be compatible with the City's existing zoning provisions.

- **Setbacks/Ground Coverage.** The Project's Specific Plan includes setback requirements to restrict the location of buildings within the Project site. One group of setback requirements addresses the Project edges. They require that buildings adjacent to the I-405 freeway and the Torrance Lateral be setback by 110 feet and 70 feet, respectively. Setbacks on Del Amo Boulevard, Main Street, and the Utility Corridor vary from 10 feet north of Del Amo Boulevard (from the back of the sidewalk) to 20 feet south of Del Amo Boulevard (from the back of the sidewalk). Within the Project site, internal setbacks would be provided in the mixed use areas, along Del Amo Boulevard. They would vary from 10 feet to 25 feet depending location and type of uses. Setbacks between residential uses and commercial buildings, or parking structures would be 25 feet.

  Direct comparisons of the Project's requirements with the requirements under existing zoning are somewhat speculative, as the imposed zoning setback at any location could vary depending on use and building orientation; i.e., the direction chosen for a building's frontage. Further, under the existing zoning, industrial use front-yard setbacks can vary (from 25 feet down to 10 feet, subject to the Planning Director's approval of landscaping plans). It is worth noting that the Project's most

[25] *The existing zoning does include restrictions on building height when new buildings are located in proximity of existing uses, potentially limiting heights in some specialized situations. However, the proximity criteria do not preclude unlimited heights, or very tall buildings that are accommodated by adequate separation from adjacent buildings.*

critical off-site interface, adjacent to existing residential development south and southwest of the Project site, would have a 70-foot setback, which would be substantially more than the 10-foot side-yard and rear-yard setbacks for industrial and commercial uses (or 20 feet for commercial front yards). Furthermore, the Project's 110-foot setback along the I-405 Freeway would be substantially greater than the existing commercial front yard setbacks of 20 feet. The Project's 20-foot setbacks along Main Street and Del Amo Boulevard, south of Del Amo, are at least equivalent to existing zoning on the Project site and to the multifamily residential development standard that occurs elsewhere in the City. The Project's 10-foot setbacks along Main Street and Del Amo Boulevard, north of Del Amo, could be similar to or less than setbacks under the existing zoning, subject to the application of the existing zoning. In summary, the Project's Specific Plan may allow some setbacks that are less at some locations than would occur under existing zoning. However, (1) the Specific Plan development would not necessarily have lesser setbacks than existing development, (2) would only have a potential for lesser impacts at limited locations, (3) would add new setback restrictions that are in many cases more restrictive than existing regulations would require (particularly along the important neighborhood and freeway edges), and would establish specific controls related to the proposed Project design. Therefore, on net the proposed setback regulations would be considered compatible with the existing regulations.

Overlay Zoning. Implementation of the proposed Project would replace the existing two overlay zones on the 157-acre parcel south of Del Amo Boulevard with provisions of the Carson Marketplace Specific Plan. In so doing, the Specific Plan would implement the purpose of the existing Design Overlay Zone by establishing design and development guidelines for proposed development and by providing site plan and design review procedures for consistency with the guidelines. It would establish specific site-design standards in contrast to the general design considerations that would otherwise be considered by the Planning Commission. Further, the purposes of the Organic Refuse Landfill Overlay Zone would be met through implementation of the RAPs, as approved by DTSC, and other mitigation measures and/or conditions that address construction at the Project site.

At the same time, Project implementation would add an additional overlay zone to the 11-acre parcel north of Del Amo Boulevard. With the additional overlay zone, the 11-acre parcel could be developed under the guidelines of the Carson Marketplace Specific Plan or the provisions of the existing CR and Design Overlay zoning. Should development occur according to the Specific Plan, impacts would be as

discussed in this EIR, with equivalent or more protective zoning protection. Should development be pursued under existing zoning, that development could be pursued independently of the Specific Plan provisions and, therefore, would not be adversely affected by the Specific Plan.

For the reasons cited above, it is concluded that the Specific Plan provides zoning provisions on the Project site that address the concerns addressed in existing site zoning and provides environmental protections that are generally equivalent to, or more protective of, the environment than the existing zoning. Therefore, the proposed Project would be compatible with the City's Zoning ordinance. Therefore, with regard to zoning, the proposed Project would be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment, and impacts related to City policies would be less than significant.

(b) SCAG Regional Comprehensive Plan and Guide

As described in Subsection 2.b.(4) on page 131, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) to address regional planning issues. Further, the RCPG includes numerous policies to bring about achievement of the goals set forth therein. SCAG policies that are applicable to the proposed Project were identified in the letter that SCAG submitted in response to the Project's Notice of Preparation.[26] The policies identified in that letter are listed in Table 11 on pages 156 through 161, which also provides a discussion of the relationship between each policy and the features of the proposed Project. The listing in the SCAG letter includes items from a few sources: (1) Chapters of the RCPG that address Growth Management, the Regional Standard of Living, the Regional Quality of Life, Social, Political and Cultural Equity, and Air Quality; (2) policies from the 2004 Regional Transportation Plan (RTP) that provides updated population, household and employment forecasts for use in the implementation of RCPG policies; and (3) Growth Visioning Principles that have been prepared by SCAG to provide a framework for local and regional decision making. All of these items are included in Table 11. Population, Housing and Employment estimates used for prepartion of the RTP were also included in the SCAG letter. Data pertaining to 2005 and the Project's estimated build-out year of 2010 are presented in Table 12 on page 162.

[26] *Letter to Mr. Ronald E. Winkler, from Brian Wallace, Associate Regional Planner, Intergovernmental Review. This letter is Included in Appendix A of the Draft EIR.*

Table 11

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy		Analysis of Project Consistency
Growth Management Chapter (GMC)		
3.01	The population, housing, and job forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies, shall be used by SCAG in all phases of implementation and review.	SCAG forecasts for housing, population and employment for the region, South Bay Cities Subregion, and the City of Carson are presented in Table 12 on page 162. The regional and sub-regional figures reflect adopted forecasts for implementation of Policy 3.01. The City figures are localized and are included for advisory purposes only. The proposed Project would include up to 1,550 dwelling units and is estimated to generate residential and employment populations of 6,969 residents and 5,320 employees, respectively.[a] As also indicated in Table 12, the Project growth is within the adopted regional and sub-regional forecasts. It reflects 0.5 percent or less of the regional growth for population, housing, and employment. At the sub-regional level, the Project would accommodate a notable proportion of the expected population and housing growth at 43.9 percent and 25.4 percent, respectively. Accommodation of a large portion of the anticipated growth, within a densely clustered Project adjacent to transportation networks, is consistent with SCAG policies. When considered on a longer-term basis, the Project's population and housing growth are not so notable. The SCAG estimates for population and housing growth in the sub-region between 2005 and 2025 are 98,975 and 36,267, respectively. The proposed Project's contribution would be only 7.0 percent and 4.2 percent, respectively. To the extent the Project's growth would exceed SCAG's advisory estimates, the City may consider the additional growth as a beneficial indicator of its ability to attract housing to the City. It is not anticipated that the Project would induce unanticipated growth, drawing on the local employment base and providing infrastructure sized to meet Project needs only. It is anticipated that SCAG will monitor development and continue to reflect the proposed Project in its future projections and planning.
3.03	The timing, financing, and location of public facilities, utility systems, and transportation systems shall be used by SCAG to implement the region's growth policies.	The proposed Project is a planned development that will provide on-site infrastructure to meet Project needs. On-site infrastructure would link with existing City and regional systems without generating the need to expand those systems. Infrastructure improvements would be created commensurate with development, and prior to occupancy. The EIR review process is providing a disclosure of Project features with review by SCAG. As noted above, the Project does not cause an exceedance of SCAG's advisory forecasts.

Table 11 (Continued)

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy		Analysis of Project Consistency
Growth Management Chapter Policies Related to the RCPG Goal to Improve the Regional Standard of Living		
3.04	Encourage local jurisdiction's efforts to achieve a balance between the types of jobs they seek to attract and housing prices.	The proposed Project is a mixed-use project that includes housing, at a range of prices, and commercial/entertainment (i.e., job generating) uses. All of these uses would contribute to the housing and employment choices within the City of Carson, which currently has a preponderance of light industrial uses.
3.05	Encourage patterns of urban development and land use, which reduce costs on infrastructure construction and make better use of existing facilities.	The proposed Project is an urban in-fill Project that would connect with existing infrastructure in the area. Large scale development at the Project site has been anticipated in redevelopment planning, and general plan development within the City for over a decade. The Project comprises a large scale planned development intended to provide utilities commensurate with its development.
3.09	Support local jurisdictions' efforts to minimize the cost of infrastructure and public service delivery, and efforts to seek new sources of funding for development and the provision of services.	The proposed Project contributes to the attainment of this policy by minimizing the cost of infrastructure (see the analysis under the previous policy) and by providing the City the means through property tax and related revenue sources to fund additional public service resources.
3.10	Support local jurisdictions' actions to minimize red tape and expedite the permitting process to maintain economic vitality and competitiveness.	This policy is directed toward local jurisdictions and recommends a set of actions that extend beyond that which can be responded to by the proposed Project. However, it may be noted that the Project's Specific Plan would set an efficient framework for review and processing of future Project permitting actions by the City.
GMC Policies Related to the RCPG Goal to Improve the Regional Quality of Life		
3.12	Encourage existing or proposed local jurisdictions' programs aimed at designing land uses which encourage the use of transit and thus reduce the need for roadway expansion, reduce the number of auto trips and vehicle miles traveled, and create opportunities for residents to walk and bike.	The proposed Project has been designed to encourage internal transit with mixed uses, as well as provisions for pedestrians and bicycles. The Project also provides a mix of on-site uses which allows people to perform multiple activities without leaving the area. As a large clustered development, with regional serving uses, the Project site can serve as a destination relative to the extension of public transit lines currently in the vicinity of the Project site.
3.13	Encourage local jurisdictions' plans that maximize the use of existing urbanized areas accessible to transit through infill and development.	The proposed Project is an infill project within an existing urbanized area. The Site is centrally located within the City of Carson and can serve as a destination relative to the extension of public transit lines currently in the vicinity of the Project site, and via such linkages, to the Metro Blue line.

Table 11 (Continued)

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy		Analysis of Project Consistency
3.14	Support local plans to increase density of future development located at strategic points along the regional commuter rail, transit systems, and activity centers.	The proposed Project is a large mixed-use activity center, immediately accessible to the I-405 and I-110 Freeways. The site is also served by the SR-91, and I-710 Freeways. The Proposed Project clusters population so as to support the extension of public transit service.
3.15	Support local jurisdictions strategies to establish mixed-use clusters and other transit-oriented developments around transit stations and along transit corridors.	See the previous discussions regarding the Project's mixed-use nature, its freeway accessibility, and its potential destination relative to extended public transit lines.
3.19	SCAG shall support policies and actions that preserve open space areas identified in local, state and federal plans.	The City's General Plan designates the Project site for urban development. The Project site is located within a Redevelopment District and is the focus of planning efforts to improve the site with development to meet a variety of City and Redevelopment Agency Policies. The Project site is not designated for open space uses.
3.22	Discourage development, or encourage the use of special design requirements, in areas with steep slopes, high fire, flood, and seismic hazards.	The Project site does not contain steep slopes, high fire or flood areas. The proposed Project would be designed in accord with engineering studies and recommendations for safe development on the Project site. All development would be consistent with the Remedial Action Plans (RAP) that have been prepared pursuant to guidance from, and approval of the Department of Toxic Substances Control (DTSC). Approval of the RAPs required the evaluation and a determination that the proposed Project would be protective of the public safety.
3.23	Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.	The Draft EIR for the proposed Project includes analysis for potential impacts regarding noise and seismic hazards. As part of the analysis, mitigation measures have been proposed to reduce potential impacts to less than significant levels. Refer to the respective sections of the Draft EIR for additional information.
GMC Policies Related to the RCPG Goal to Provide Social, Political, and Cultural Equity		
3.24	Encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the Regional Housing Needs Assessment.	As described in the City's Housing Element, the following housing needs for the City of Carson are accordance with calculations performed by SCAG: 623 units, of which 117 units would be for Very Low income households, 104 units would be for Low income households, 143 units would be for Moderate income households and 259 units would be for Above Moderate income households. The proposed Project includes 1,550 dwelling units. The proposed Project is within Redevelopment Project Area No. One; and the

Table 11 (Continued)

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy		Analysis of Project Consistency
		Redevelopment Agency would be responsible for affordable housing production in accordance with the Redevelopment Plan and applicable law. The Agency would address affordable housing for this project through an Owner Participation Agreement.
3.27	Support local jurisdictions and other service providers in their efforts to develop sustainable communities and provide, equally to all members of society, accessible and effective services such as: public education, housing, health care, social service, recreational facilities, law enforcement, and fire protection.	The proposed Project would provide new revenues for the support of public services. The Project Development's impact on public services has been evaluated in this EIR and mitigation measures to lessen impacts have been identified. The proposed Project would serve as a visitor destination with entertainment facilities and plazas for visitors. For further discussion, refer to Section IV.I, Public Services, of the Draft EIR.
Regional Transportation Plan (Core Regional Transportation Plan Policies)		
1st	Transportation investments shall be based on SCAG's adopted Regional Performance Indicators:	This policy is directed toward SCAG activities pertaining to the implementation of its own policies and to agencies with jurisdiction over the management of transportation systems (e.g., Caltrans, MTA, City transportation departments, etc.). The performance standards set levels of service and/or improvements that can be used to monitor the quality of transportation systems (e.g., improve travel speeds by 10 percent, sustain system performance at a cost of $20 per capita, etc.). Notwithstanding, for reasons identified above (an infill, higher density mixed-use project with freeway accessibility, etc.), the proposed Project is of a type that supports SCAG policies and contributes to the potential attainment of the performance goals. In addition, the proposed Project's design supports improved access to alternative transportation modes (e.g., transit, bicycles and pedestrian). (As indicated, in Section IV.C, Traffic, the Project's mitigation measures would include improvements to reduce impacts on the local road network. Impacts would be reduced to less than significant levels, except at one location where impacts would be reduced, although not to a less than significant level. The Project would have a significant impact at seven CMP freeway segments.) The Proposed Project, as analyzed and concluded in Section IV.G, Air Quality, of this Draft EIR, is consistent with the SCAQMD's Air Quality Management Plan and thus does not inhibit the Basin's ability to comply with the requirements of both the Federal and State Clean Air Acts. In addition, the

Table 11 (Continued)

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy		Analysis of Project Consistency
		Proposed Project does not propose any transportation improvements that are subject to SCAG's Transportation Conformity requirements.
2nd	Ensuring safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system will be RTP priorities and will be balanced against the need for system expansion investments.	The proposed Project supports transportation safety as its design does not create any situations wherein traffic hazards are created or exacerbated.
3rd	RTP land uses and growth strategies that differ from currently expected trends will require a collaborative implementation program that identifies required actions and policies by all affected agencies and sub-regions.	The proposed Project is not anticipated to cause a change in regional growth patterns. Project growth is anticipated in the SCAG forecasts for the region and subregion. (See discussion of SCAG Policy 3.01, above.)
4th	HOV gap closures that significantly increase transit and rideshare usage will be supported and encouraged.	This policy is not applicable to the proposed Project.
Air Quality Chapter Core Actions		
5.07	Determine specific programs and associated actions needed (e.g., indirect sources rules, enhanced use of telecommunications, provision of community-based shuttle services, provision of demand management-based programs, or vehicle-miles-traveled/emission fees) so that options to command and control regulations can be assessed.	The Proposed Project, as detailed in Section IV.G, Air Quality, has incorporated into its design a number of features that reduce vehicle trips and vehicle miles traveled, including, but not limited to, the following: (a) developing residential mixed-use neighborhoods; (b) including commercial uses that serve neighborhood and community needs in proximity to residential development; (d) provision for pedestrian and bicycle traffic; and (e) bicycle paths and landscaped pedestrian walkways.
5.11	Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional and local) consider air quality, land use, transportation and economic relationships to ensure consistency and minimize conflicts.	The Proposed Project as described in the analysis to the previous policy as well as Policy 4.01, has considered air quality, land use and transportation relationships to ensure consistency, and minimize conflicts. This EIR addresses impacts with regard to the SCAQMD's Air Quality Management Plan, SCAG's RCPG, and the County's CMP, as well as plans of the City of Carson.
Growth Visioning		
Principle 1: Improve **mobility** for all residents • Encourage transportation investments and land use decisions that are mutually supportive. • Locate new housing near existing jobs and new jobs near existing housing. • Encourage transit-oriented development. • Promote a variety of travel choices Principle 2: Foster **livability** in all communities		The proposed Project is an in-fill development within an existing urban area, located in the center of the City of Carson. Project development would not require alterations to existing stable residential neighborhoods. The proposed Project is a mixed-use development with a large array of commercial and residential activities. As such it places residents, services, and employees in proximity to one another, and in proximity to existing residential and commercial development in a City that

Table 11 (Continued)

Project Consistency with Applicable Land Use Policies—SCAG

Relevant Policy	Analysis of Project Consistency
• Promote infill development and redevelopment to revitalize existing communities. • Promote developments, which provide a mix of uses. • Promote "people scaled," walkable communities. • Support the preservation of stable, single-family neighborhoods.	contains a large amount of industrial land. Further, the proposed Project is a walkable community with clustered population and services - one that provides opportunities for bicycle transportation and that would be linked to the public transportation system.
Principle 3: Enable **prosperity** for all people • Provide, in each community, a variety of housing types to meet the housing needs of all income levels. • Support educational opportunities that promote balanced growth. • Ensure environmental justice regardless of race, ethnicity or income class. • Support local and state fiscal policies that encourage balanced growth. • Encourage civic engagement.	Many of the Principle 3 items apply to civic responsibilities that are beyond the scope of an individual project. However, it may be noted that the Project's housing units, up to 1,550 units in total, would contribute to the range of housing opportunities within the City of Carson. The Project would add rental and for-sale units that add diversity to the existing housing within the City. Also, it would include affordable housing in accordance with the Redevelopment Plan and applicable law (the Agency would address affordable housing through an Owner Participation Agreement). There is nothing in the Project that would inhibit the furtherance of stated principle.
Principle 4: Promote **sustainability** for future generations • Preserve rural, agricultural, recreational and environmentally sensitive areas. • Focus development in urban centers and existing cities. • Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste. • Utilize "green" development techniques.	The proposed Project is an in-fill Project within an existing urban area, located in the center of the City of Carson. It is located on a contaminated, former landfill site that would be remediated under the Project and does not contain rural, agricultural, recreational or environmentally sensitive areas. It is a clustered development that would increase densities at a strategic location within the City, adjacent to and/or in close proximity to nearby freeways and public transit, thereby contributing to a development pattern that supports the efficient use of infrastructure. The proposed Project would participate in Citywide solid waste recycling programs. The project proposes to meet or exceed the requirements of Title 24 of the California Energy Code, Part 6 through measures that may include: light colored roofing materials (with Energy Star roofing materials encouraged); Energy Star appliances to the greatest extent feasible (solar, electric, or lower-nitrogen oxide, gas-fired water heaters strongly encouraged); and Participation in energy efficiency programs offered by Southern California Edison.

[a] *It is assumed that the household size would be 4.6 persons per household for rental units and 4.46 persons per household for owner-occupied units. It is assumed that there would be one employee generated for every 375 square feet of floor area.*

Source: PCR Services Corporation, 2005.

Table 12

Comparison of Proposed Project and SCAG Forecasts

Forecast	Proposed Project	SCAG Forecasts 2005	SCAG Forecasts 2010	Increase (2005–2010)	Project Percentage
SCAG Regionwide (Adopted)					
Population	6,969	19,967,835	21,294,093	1,326,258	0.5%
Households	1,550	6,260,842	6,758,353	497,511	0.3%
Employment	5,320	8,368,607	9,456,903	1,088,296	0.5%
South Bay Cities (Adopted)					
Population	6,969	886,234	902,121	15,887	43.9%
Households	1,550	302,450	308,547	6,097	25.4%
Employment	5,320	422,066	480,449	58,383	9.1%
Carson (Advisory City)					
Population	6,969	95,856	97,532	1,676	415.8%
Households	1,550	25,446	26,296	850	182.4%
Employment	5,320	59,739	68,552	8,813	60.4%

Source: Southern California Association of Governments, 2004.

A review of the consistency analyses presented in Table 11 indicates that the proposed Project includes key features that support the policy directions set forth in SCAG's RCPG. Some of the key Project features include the following:

- The proposed Project would accommodate anticipated regional growth;
- It would provide needed housing and employment opportunities;
- It would comprise a mixed-use, infill project that would cluster density at a site that is regionally accessible via the I-405 and I-110 Freeways. As such it would reduce infrastructure costs, enhance access between jobs and housing opportunities, support pedestrian and bicycle travel, and provide opportunities to enhance linkages with public transportation.

On the basis of the discussion in Table 11, it is concluded that the proposed Project would be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment, and impacts related to SCAG policies would be less than significant.

(c) Los Angeles County Congestion Management Plan (CMP)

The traffic impacts associated with the proposed Project relative to the CMP are evaluated in Section IV.C, Traffic of this Draft EIR. As described therein, Project development would result in a significant impact at seven CMP locations.

(d) South Coast Regional Management District Air Quality Management Plan

Air quality impacts associated with the proposed Project would result from stationary and non-stationary sources associated with Project construction and operations. Section IV.G, Air Quality, of this Draft EIR evaluates the air quality impacts of the proposed Project and describes air quality mitigation measures that would reduce potential air quality impacts to a less than significant level to the extent feasible. The proposed Project would not result in an increase in the frequency or severity of an existing air quality violation or create a new violation, and the proposed Project is consistent with the population, housing and employment growth assumptions contained in the AQMP. As such, the proposed Project would be consistent with the policies and goals of the AQMP, and no significant impacts relative to AQMP land use policies and regulations would occur**.**

(3) Impacts on Existing Land Use Patterns

(a) Citywide Impacts

The Proposed Project would fill in a vacant site that is located in an area that lies between districts of highly varied use and character. The existing land uses on the four sides of the Project site are very distinct from one another, and do not comprise a single integrated neighborhood or community. Development to the south and southwest consists of residential neighborhoods. Development to the west, beyond Main Street, is made up of a predominantly light-industrial district with scattered commercial uses and development to the south consists of residential neighborhoods. The existing development on the eastern side of the Project site, a distinct commercial area, is substantially separated from the Project site by an infrastructure corridor that includes the I-405 Freeway, open space, and the Dominguez Channel. The area north of the Project site has a distinct character with open space, the Dominguez Hills Golf Course, a pocket of residential development, and the same infrastructure corridors that were just described as they extend north of the Project site, with open space and recreational areas beyond.

The implementation of the proposed Project would provide an in-fill development amongst these varied land uses. It would remediate and convert a brownfield site that has been identified as containing hazardous materials to a new developed community that would generally complement and balance Citywide development. The residential uses would add residential neighborhoods to a City that is in need of additional residential development. Further, the

entertainment and commercial/retail uses would serve local residents as well as regional visitors, and contribute to the diversity of uses in the City.

The Project Development would be centrally located within the City. It would have visibility along the I-405 Freeway which bisects the City, and would contribute, with the South Bay Pavilion, located across the I-405 Freeway, to a central City identity with regard to a place to go for shopping and entertainment. As a mixed-use project, it would provide a transitional use between the lower density residential units to the south and southwest, light industrial uses to the west and commercial/regional commercial uses to the east. As such, it would complement and balance the organization of land uses in the City.

(b) Impacts on Adjacent Land Uses

At a more localized level, the proposed Project site would become developed with uses that would face or be within close proximity of existing development on its four sides. The land uses relationships that would occur along each of the Project site edges are as follows:

- **The Residential Neighborhoods to the South and Southwest.** The residential neighborhoods located south and southwest of the Project site are made up of single family residential units and three mobile home parks that are interspersed among the single-family units. These residential units are located on the other side of the Torrance Lateral relative to the Project site. With implementation of the Proposed Project, existing residential units would be separated from proposed development by a minimum of approximately 185 feet, inclusive of the intervening Torrance Lateral (75 feet wide with service roads) and a landscaped slope that runs along this face of the Project site. The landscaped slope would rise approximately 8 feet to 16 feet (13 feet to 16 feet for most of its length) to the Project site's finished grade level and Project development. As such, the proposed Project would lie within a distinct area, separate from the residential development from the south, within an intervening open-space buffer.

- **The Eastern Project Edge.** The I-405 Freeway along the eastern edge of the Project site is a large-scale infrastructure facility. It does not represent a sensitive use.

- **The Northern Edge.** The uses along the northern edge of the Project site include a nursery lying within an open space easement, and beyond that the Dominguez Hills Golf Course and Practice Range. Project uses along this edge of the Project site would be Residential and/or mixed use residential/commercial. The Project's on-site activity would not interfere with the activities at the off-site locations, nor would off-site uses interfere with Project activities.

- **The Main Street Light-Industrial Edge.** The northwest boundary of the Project site faces Main Street, with development areas located on either side of Del Amo Boulevard. Main Street currently demarcates a boundary between the largely light industrial district to the west and non-industrial uses to the east. Project Development along this edge of the Project site would be mixed use, with residential and/or commercial uses. The existing uses in the vicinity of the Project site are not sensitive uses, and their on-site activities would not be interfered with due to the introduction of Mixed Use–Residential uses to the area.

(c) Conclusions Regarding Impacts on the Land Use Pattern

As described above, development on the Project site would not disrupt important linkages between existing districts surrounding the Project site. Further, the Project's proposed uses would not place uses of a nature or proximity that would alter the character of the existing land uses surrounding the Project site. As such, Project development would not result in the division, disruption or isolation of an existing established community or neighborhood. Impacts would be less than significant.

At the same time, it may be noted that the proposed Project would be close enough to the off-site residential area to the south and southwest to potentially have some impacts on off-site residential development. Potential impacts resulting from this proximity are addressed in Sections IV.C, Aesthetics; IV.H, Noise; IV.G, Air Quality; and IV.B, Transportation and Circulation.

(4) Impacts on the Sustainability of Existing Uses

The Proposed Project would contribute up to 1,995,125 square feet of commercial space with a mix of retail, entertainment and hotel uses. This development would support commercial economic activity that would become part of a larger economic fabric in the areas surrounding the Project site. While the Proposed Project's economic activity would contribute to the overall well being of the City and region, it would contribute to a competitive market framework which could potentially have an adverse economic effect at some competitive retail locations. Such economic effects could result in secondary impacts on the physical environment if they were to lead to abnormally high retail vacancies, abandoned, non-maintained buildings and/or a general deterioration. When this occurs, there can be affects on land use relationships in the area (i.e., aesthetics and security/safety). When these effects are substantial, they may potentially cause conditions generally referred to by terms such as "blight" or "urban decay."

As described in the State CEQA Guidelines, Section 15131(a), "Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated

economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes…. The focus of the analysis shall be on the physical changes."

As the Proposed Project introduces a large amount of commercial retail development within a highly urbanized area, a study was undertaken to identify the proposed Project's affects on the sustainability of existing retail areas within a 2.5- and 5-mile radius of the Project site (see Appendix J of the Draft EIR).[27] This report analyzed the Project's potential impacts on the commercial activities within a 2.5-mile radius of the Project site (a typical area of effect for large-format grocery stores) and within a 5.0-mile radius (a typical area of effect for regional centers). As concluded in the study, within specific retail sectors, Project development would have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. An adverse impact on vacancies and sales could occur, most likely in smaller, older retail centers. However, this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures. The addition of the Project's new retail activities would not likely cause any widespread, prolonged urban decay.

Further, the Economic Study also concluded that short-term vacancies and/or closures that may occur among the smaller, older retail stock could likely result in retail renovations or upgrades, an effect which would be beneficial to the City and its residents, or some of the space could transition from retail to non-retail uses, such as office or residential uses in response to market demands that are prevalent in the future.

Therefore, no districts are expected to fall into large-scale physical disrepair, unable to recover with natural increases in economic demand in the future. Impacts on the physical environment from Project induced vacancies or effects on sales would thus be less than significant.

4. MITIGATION MEASURES

As no significant land use impacts would occur, no mitigation measures would be necessary.

[27] *Stanley R. Hoffman Associates, Inc., October 2005.*

5. CUMULATIVE IMPACTS

a. Compatibility with Land Use Plans, Policies and Regulations

The potential for cumulative impacts occurs when the impacts of a proposed project and the impacts of related projects together yield impacts that are greater than the impacts that would occur separately. The identified related projects within the City of Carson are subject to compliance with City regulations and subject to review by the City for compliance with the General Plan and its zoning regulations. It is reasonable to assume that future projects approved in the surrounding area would have been found, as part of their respective approval processes, to be in compliance with local and regional planning goals and policies. If a related project was found to be in conflict with applicable land use plans, policies and regulations, it is reasonable to assume that its approval would involve findings that the related development did not have adverse land use impacts or that mitigation measures were incorporated into the development to reduce potential land use impacts to less than significant levels. In any case, as described above, the proposed Project would be compatible with City policies, land use plans, and regulations. Therefore, the proposed Project would not contribute to a cumulative effect of multiple projects having adverse effects on the environment due to their incompatibility with regulatory requirements. Thus, cumulative impacts regarding the land use regulatory framework would be less than significant.

b. Impacts on the Existing Land Use Pattern

A list of Related Projects is provided in Section III.B, Cumulative Development, Table 9 on page 117, with their locations identified on Figure 8 on page 119. The list includes a total of 36 related projects. These projects are diverse, varying in function, size, and location. As such, they would provide urban in-fill within the local area of each project, but would not comprise a major change in the land use patterns within the City or region.

None of the Related Projects are located in the immediate vicinity of the proposed Project; therefore, the proposed Project would not contribute with other projects to land use effects in the Project vicinity. The nearest related projects are located along Avalon Boulevard. These projects are located northeast of the I-405 Freeway, and would not have a nearby relationship to the proposed Project. Most of those related projects are fill projects in the area of the South Bay Pavilion, and contribute to the town center discussed above. Many of the related projects are located south of the Project site, in an area that is buffered from the Project site by the existing residential neighborhoods. Therefore, cumulative effects would not cause the division, disruption, or isolation of an existing established community or neighborhood.

c. Impacts on the Sustainability of Existing Uses

The analysis of the Project's impacts on the sustainability of existing uses, above, is based on a methodology that incorporates anticipated growth, inclusive of Related Projects. Such growth is combined with that of the proposed Project in estimating the amount of future retail services. Therefore, the impacts that have been conservatively attributed to the proposed Project are, in fact, cumulative impacts. As indicated above, within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. It is further forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Land use impacts prior to mitigation are less than significant. No mitigation measures are required.

IV. ENVIRONMENTAL IMPACT ANALYSIS
B. VISUAL RESOURCES

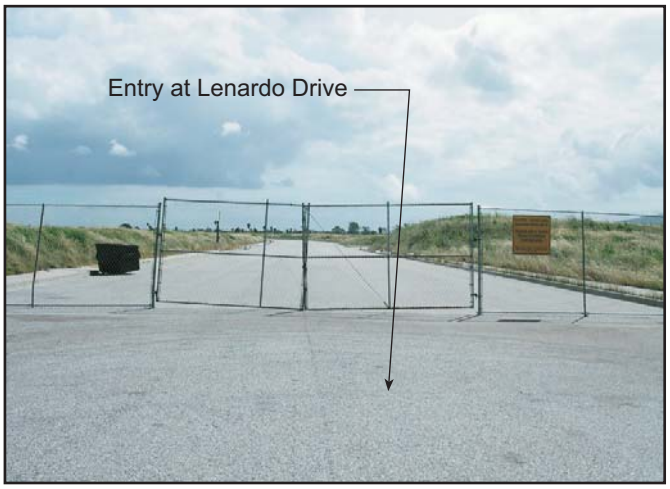
1. INTRODUCTION

The analysis of visual resources addresses the issues of aesthetics, views, day-time shading and nighttime lighting. The aesthetics analysis addresses the character of the Project and its general appearance in relationship to development in the surrounding areas, as well as the potential affect on the aesthetic character at off-site areas subject to increased vacancy rates with Project implementation. The view analysis addresses potential alterations in views that would occur as a result of Project implementation. The views analysis considers the locations from which the population has views of the surroundings, the nature of the existing views from those locations (i.e., what do people see), and whether the Project would substantially alter views of any valued scenic resources. The shading analysis addresses the potential of the Project to cast shadows on off-site sensitive uses, and therefore interfere with activities that require sunlight for their performance. The lighting analysis addresses the affects of artificial lighting on the nighttime appearance of the Project, and whether Project lighting would interfere with the performance of off-site activities.

2. ENVIRONMENTAL SETTING

a. Existing Visual Environment

The Project site is an undeveloped parcel, pocketed within an urbanized area. The existing visual characteristics of the site and its surrounding areas are shown in photographs presented in Figure 12 through Figure 16 on pages 170 through 174. Figure 12 illustrates the existing visual characteristics of the Project site, itself. Figure 13 illustrates the aesthetic and view conditions along Del Amo Boulevard as it passes through the Project site. Figures 14 thorough 16 illustrate aesthetic and view conditions in areas surrounding the Project site from the south, east, north, and west, respectively. The following discussion of aesthetic character addresses the appearance of existing sites and developments in the area. The subsequent discussion of views addresses view conditions (i.e. what people actually see) from prominent view locations (i.e. where they see it from) in the Project area.



Photograph 1

Photograph 2

Photo Location Map

Photograph 3

PCR

Figure 12
Photographs of the Project Site

Source: PCR Services Corporation, 2005

Photograph 4

Photograph 5

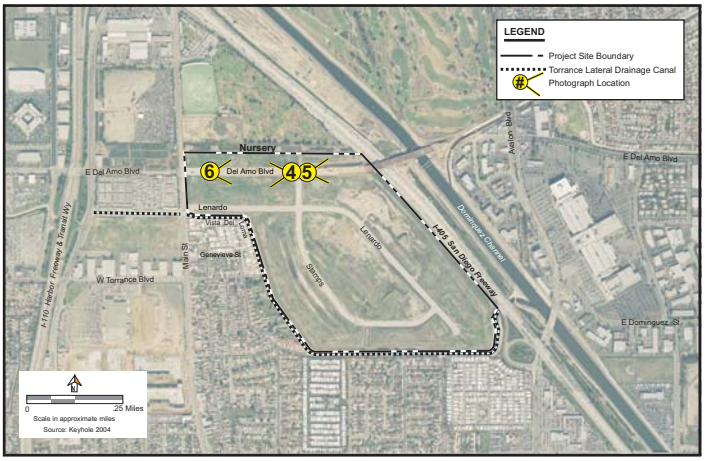


Photo Location Map

Photograph 6

PCR

Figure 13
Photographs from Del Amo Boulevard Through the Project Site

Source: PCR Services Corporation, 2005

Photograph 7

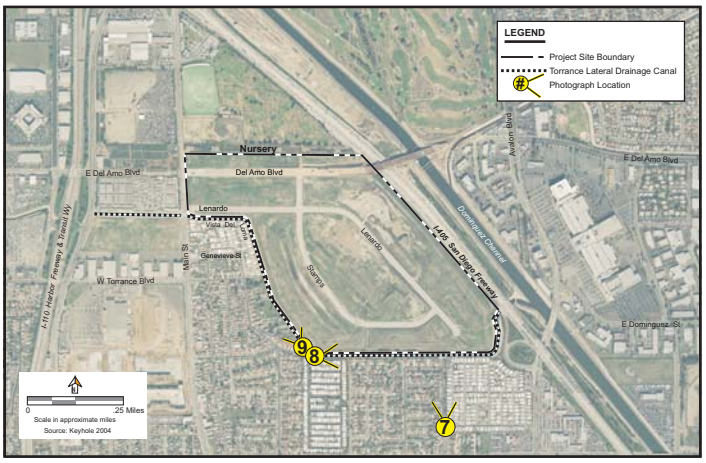


Photo Location Map

Photograph 8

Photograph 9

PCR

Figure 14
Photographs From Areas South of the Project Site

Source: PCR Services Corporation, 2005

Photograph 10

Photograph 11

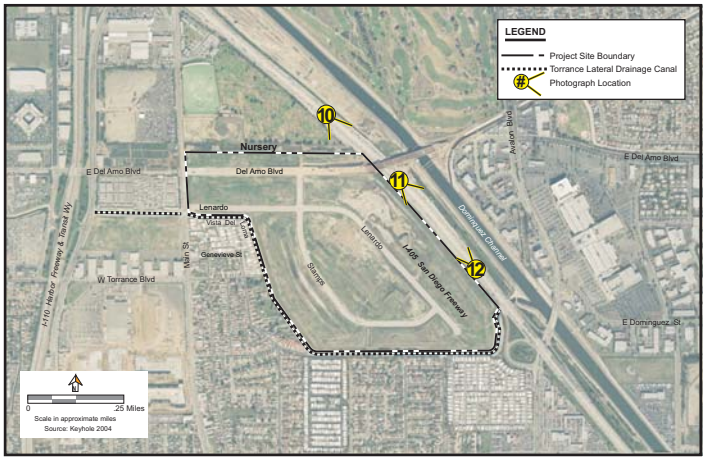


Photo Location Map

Photograph 12

PCR

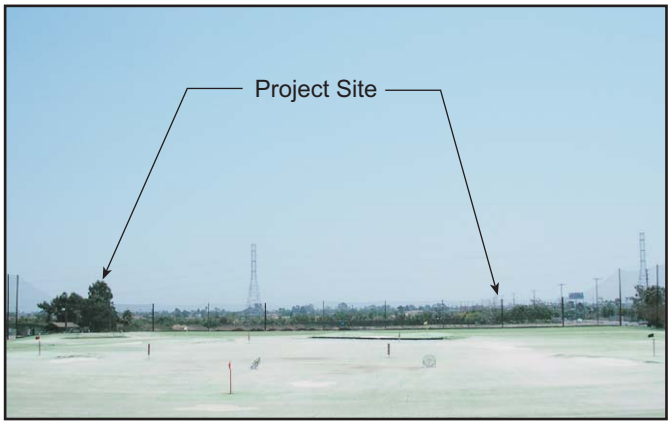
Figure 15
Photographs From I-405-East of the Project Site

Source: PCR Services Corporation, 2005

Photograph 13

Photograph 14

Photograph 15



Photograph 16

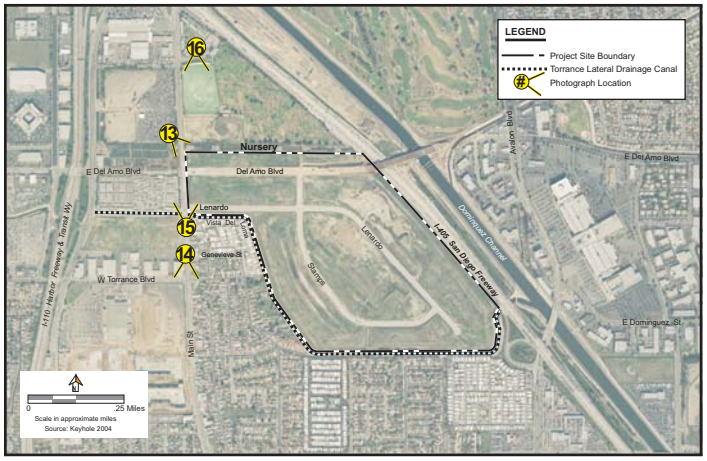


Photo Location Map

PCR

Figure 16
Photographs from North and West of the Project Site

Source: PCR Services Corporation, 2005

(1) Aesthetic Character

(a) Project Site

The 168-acre Project site is currently vacant and undeveloped. (See Figures 12 and 13 on pages 170 and 171.) The Project site consists of a 157-acre parcel (Districts 1 and 2), south of Del Amo Boulevard, and an 11-acre parcel north of Del Amo Boulevard (District 3). The 157-acre parcel operated as a Class II Landfill until 1965. At the time landfill operations were ceased, the landfill was covered with a final layer of soil. The Project site is predominantly bare soil that becomes green with nonnative grasses following winter rains and turns brown by summer. The 11-acre portion of the site north of Del Amo Boulevard is a typical urban vacant lot that is undeveloped and covered with loose soil and tall grass.

As such, the Project site does not contain unique, natural resources or other features that would be considered aesthetic resources. However, the large expanse of undeveloped land adds to the City's urban environment in a manner that contributes to the quality of its aesthetic setting. The Project site also allows exposure to large visual expanses and a feeling of spaciousness, thereby providing a visual break from surrounding development.

(b) Areas Adjacent to the Project Site

(i) Areas South and Southwest of the Project Site

The area that lies south and southwest of the Project is a residential neighborhood consisting of single family residential units and three mobile home parks that are interspersed among the single-family units. (See Figure 14 on page 172.) Most of the units are single story, but many include second stories. The residential neighborhood is separated from the Project site by the Torrance Lateral Drainage Channel, a concrete lined infrastructure improvement. The Channel strongly shapes the aesthetic character of the immediate area between the Project site, and the residential development to the south.

(ii) Areas East of the Project Site

The eastern edge of the Project site faces the I-405 Freeway (See Figure 15) and beyond that the Dominguez Channel, a large flood control facility. Together, the I-405 and Dominguez Channel, with an open space corridor between them, comprise a large area of infrastructure that distinctly separates the Project site from other uses in the larger community.

(iii) Areas West of the Project Site at Main Street

The western boundary of the Project site, at its most northern location, faces Main Street, with off-site uses consisting of light industrial uses (mini-storage), interspersed with vacant area, a nursery, and residential uses. As Main Street extends, north and south of the Project site, the number of uses increases (some retail, some more residential, etc), but the general visual character of Main Street in the Project area is dominated by light industrial activity. Buildings in this area are typically single story in height.

(iv) Areas North of the Project Site

The land directly north of the Project site consists of an open space/utility corridor with a nursery, grassy area and utility lines. Further north of the open space/utility corridor, lies the Dominguez Hills Golf Course and Practice Range, a small par-3 golf facility, which although improved for recreation activity, contributes to the feeling of open space in the Project vicinity.

(c) Regional Area

The Project site is located within a larger regional context that includes an extremely large range of uses: residential neighborhoods, commercial corridors, centralized commercial centers, light and heavy industrial uses and recreational uses, as well as schools and service facilities. These varied uses are dispersed in a patchwork arrangement, intermixed among the elevated freeways that stand as physical barriers between areas. While the character of development varies at a local scale, these uses blend into an overall pattern of a developed, urban/suburban environment, without remarkable organizing features.

(2) Views

(a) View Resources

The view-scape in the Project area is that of an urban environment characterized by an array of interspersed developments, open spaces, and infrastructure improvements. The Project vicinity does not contain notable features that would typically fall under the heading of view resource, e.g. unique geologic features, natural areas, etc. The Project site lies in a large basin with little vertical differentiation that might provide scenic quality (e.g. hillside areas). The nearest notable geologic feature, the Palos Verdes Peninsula is located approximately five miles southwest of the Project site. More distant features that define the basin are located at some distance. The San Gabriel Mountains are located approximately 25 miles to the northeast, and the Santa Ana Mountains are approximately 25 miles to the east.

The features of the Project's visual setting that might shape an appreciation of its visual character are limited to typical urban elements, and are subject to personal interpretation. Some viewers may look at the general urban environment, while some may appreciate the architecture of particular buildings or patches of open space/landscaping between buildings.

There are two notable features that might catch the eye of travelers through the area. The port for the Goodyear Blimp is located on the north side of the I-405 Freeway in the vicinity of the Project site. This site has visual value due to its expanse of open space and, when the blimp is in port, its familiarity as a cultural symbol. Also, there is a large fiberglass statue of a man holding a golf club on the south side of the I-405 Freeway. This statue advertises the Dominguez Hills Golf Course and has historic value (as an extant example of roadside mimic architecture), and may be a recognizable visual feature for some travelers through the area.

(b) View Locations

(i) Public Vantage Points

The Project Site is visible from the I-405 Freeway (along the northeast edge of the Project site), Del Amo Boulevard (east-west thoroughfare that bisects the northern portion of the site), and Main Street (north-south thoroughfare that defines the western edge of the site). None of these roadways is designated as a scenic highway.

I-405 Freeway

The I-405 Freeway provides the most notable views of the Project site, due to its large number of travelers and adjacency to the Project site. The view along the I-405 is mostly defined by its immediate surroundings consisting of vehicles, freeway walls, intermittent trees and signs, and freeway overpasses. (See Figure 15 on page 173.) Beyond that, there are views of the urban/suburban environment that are typical of freeway views throughout the South Bay to Orange County corridor. There are no notable natural features or scenic resources in the Project area. Views of the two notable cultural/historic features in the area, the Goodyear Blimp site, and the large statue of the man with a golf club, are available to passers-by on the I-405 Freeway. Views of the Project site from the I-405 Freeway, which is at a lower elevation than the Project site, are upward to limited views of fencing and an earthen slope along the eastern edge of the Project Site.

Del Amo Boulevard

Del Amo Boulevard passes through the Project site separating the 11-acre parcel on the north and the 157-acre parcel on the south. (See Figure 13 on page 171.) Views along Del Amo

Boulevard are predominantly shaped by the Project site's open area. Travelers through the area have expansive views, due to the lack of development.

Main Street

Views along Main Street are shaped by light industrial uses interspersed among vacant and underdeveloped lands on the west and residential development, the vacant Project site and open space on the east. (See Figure 16 on page 174.) The overall view is that of a low density urban street, with large tracks of vacant land. The Project site contributes to the low density character of the immediate area for a small stretch, as travelers approach from the north and south. Views of the Project site show a vacant, fenced edge. A slight berm on the south side of Del Amo Boulevard builds up from the Project site's edge towards the inner portions of the Project site, limiting views into, and over, the Project site from some locations.

(ii) Private Vantage Points

Residences Adjacent to the Project Site

Opposite to the Project site, along its south and southwest edges, there are approximately 100 residential units, including mobile home units and single-family residences. The units are typically one story in height; however, many units include second stories, thereby creating improved view opportunities for these units.

Short-range views from these locations are dominated by the Torrance Lateral. (See Figure 14 on page 172.) Mid-range views are dominated by the berm along the edges of the Project site. The berm rises approximately 13 feet to 17 feet above the Lateral for most of the length, with the rise diminishing to approximately 8 feet at the east-west/north-south turn at the edge of District 1. Long-range views are very limited due to the berm rising above most viewing locations in the residential area. However, there may be some limited residential locations where two-story structures are located opposite lower berm faces and offer more distant views of open areas beyond the Project site.

Other Private Locations

Views of the Project site are extremely limited, due to the flat terrain in the surrounding area and the prevalence of existing development. Further, there is limited private development in the Project area, with those uses not oriented toward providing long-range views over the Project site. A few taller buildings (e.g., office buildings) may provide some views over the Project site from outlying areas and some distant locations at increased altitude (e.g., the raised elevations in Rolling Hills/Palos Verdes). From the more distant locations, the Project site is a relatively small, undeveloped parcel located within an established urban environment.

Views of the site are also available from the Dominguez Hills Golf Course north of the Project site. Although buffered from the Project site by an open space/utility corridor and some distance, the openness of the Project site allows for distant views from this location. (See Photo 16 on Figure 16 on page 174.)

b. Policy and Regulatory Environment

(1) City of Carson

(a) General Plan of the City of Carson

The Carson General Plan sets forth objectives, goals, policies, and implementation measures that provide guidelines to meet the existing and future needs and desires of the community. Included within the General Plan are numerous guidelines pertaining to the design of the physical environment. Such Guidelines are included in both the 2004 and 1982 General Plans within the Land Use and Open Space Elements. Policies that are relevant to the visual qualities of the proposed Project are listed in Table 15 in the Plan Consistency analysis on page 202.

(b) Carson Zoning Ordinance

(i) General Zoning Provisions

The City of Carson implements its General Plan through Zoning and Specific Plans. The Project site is not currently included within the boundaries of an adopted Specific Plan. As described more fully in Section IV.A, Land Use, the Project's existing zoning includes the following: Regional Commercial with Design Overlay on the 11-acre parcel north of Del Amo Boulevard; Light Manufacturing with Design Overly and Organic Refuse Landfill Overlay on the western portion of the 157-acre parcel; and Regional Commercial with Design Overlay and Organic Refuse Landfill Overlay on the eastern portion of the 157-acre parcel.[28]

The City's zoning ordinance includes numerous guidelines that affect the final appearance of development within the City. For example, the ordinance addresses the general character of development by limiting the permitted uses, and addresses the massing of buildings on a project site by establishing regulations for building height, density, setbacks and space between buildings. The ordinance also addresses other design considerations including such

[28] *The Organic Refuse Landfill Overlay zone on the 157-acre parcel addresses issues that pertain to the public health, safety, and general welfare by regulating uses of organic refuse landfill sites. The zone does not include regulations regarding visual qualities.*

items as the use and character of walls, signage and lighting. Section IV.A, Land Use, of this Draft EIR includes an evaluation of the Project's relationship to the existing regulations as they relate to general site use and development compatibility. The zoning requirements that are more directly related to the visual qualities of development are identified in the analytical discussion of zoning regulations in Subsection 3.(c).(2).(a).iv on page 201.

(ii) Overlay Zoning

Overlay zones are an implementation mechanism used to address unique site conditions at particular locations that must be considered separately from the uses and standards that are otherwise applicable under the standard zoning classification.

The Project site's current Design Overlay (DO) zone designation provides for Site Plan and Design Review of future development in order to achieve special standards of design, architectural quality, style and compatibility, landscape treatment, and functional integration of neighboring developments. Review of projects in the DO zone requires findings by the Planning Commission that a project is compatible with the General Plan, any specific plans for the area and surrounding uses; compatibility of architecture and design with existing and anticipated development in the vicinity, including the aspects of site planning, land coverage, landscaping, appearance and scale of structures and open spaces; and other features relative to a harmonious and attractive development of the area.

(iii) Site Plan and Design Review

Section 9172.23 of the City Zoning Ordinance establishes procedures for Site Plan and Design Review by the Planning Commission for construction of buildings with estimated valuations of $50,000 or more. Under these provisions, site plans are reviewed in a manner similar to that described for the Design Overlay Zone.

(2) Caltrans

The State of California, Department of Transportation (Caltrans) is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within the state's boundaries. The proposed Project does not include roadway improvements that are under the jurisdiction of Caltrans; however, the Project faces the I-405 Freeway, which is a Caltrans facility, and the internal Project roadways would link to a new Freeway ramp improvement at Avalon, the I-405/ Avalon Boulevard Interchange Modification Project. Therefore, the Project would be expected to consider Caltrans Guidelines at locations where it would have aesthetic impacts on a Caltrans facility.

The Highway Design Manual provides guidelines for Caltrans projects and generally addresses landscaping and grading considerations. For example, it encourages visually compatible plantings that integrate highway facilities and surrounding communities, as well as integrate into the overall existing composition.

3. PROJECT IMPACTS

a. Methodology

The following analysis addresses the Project impacts that could occur under the proposed conceptual plan, and also the greatest impacts that could occur if the final site design were varied from the conceptual plan, subject to the limitations of the Specific Plan. The currently proposed Conceptual Plan is one design scenario that would be allowed under the Project's Specific Plan regulations. Variations in impacts on Visual Resources that might occur under other development scenarios are limited because of Specific Plan restrictions that limit residential development to Development District 1 and Development District 3; and that limit larger commercial buildings (greater than 50,000 sq.ft.) to Development District 2. The most notable variation that could occur would be a choice to relocate the theater and/or hotel uses, with their taller building heights than allowed for other commercial uses, to alternative locations. This would increase the size of potential development at such locations. Therefore, discussion of other development scenarios is provided in the applicable Subsections below.

(1) Aesthetics

The analysis of aesthetics is based on a three-step process as follows:

Step 1: Describe the massing and general configuration of buildings, open space and proposed landscaping treatments around the Project edges;

Step 2: Compare the resulting appearance to the existing site appearance and character of adjacent uses and determine whether and/or to what extent a degrading of the visual character of the area could occur (considering factors such as changes in the appearance of natural features and open space, and the blending/contrasting of new and existing buildings given uses, density, height, bulk, setbacks, signage, etc.); and

Step 3: Compare the anticipated appearance to standards within existing plans and policies which are applicable to the Project Site (regulatory analysis).

(2) Views

The analysis of views addresses view resources (what is seen) and view locations (from where it is seen). These elements were evaluated to determine whether views of existing resources occur, to what extent they would be altered should they occur, and whether the sight of a particular view resource would be obstructed.

To determine whether a potentially significant view impact would occur, a four-step process is used to weigh several considerations, as follows:

Step 1: Survey the visual setting to determine the nature of view characteristics and presence or absence of valued scenic resources.

Step 2: Identify the view locations in the proximity of the Project site, and the nature of the existing views from those locations.

Step 3: Evaluate whether a potential obstruction from Project development would substantially alter the view of valued view resources.

Step 4: Consider whether the proposed Project includes design features which offset the alteration of viewing conditions.

(3) Shade/Shadow

The shading analysis addresses the potential of the Project to cast shadows on off-site sensitive uses and whether shadows could substantially interfere with activities that require sunlight for their performance. The potential Project impacts were evaluated by identifying potentially sensitive uses lying adjacent to the Project site and then modeling the shading patterns that would occur in their vicinity from buildings on the Project site. Potential shadow impacts have been plotted for morning, noon, and afternoon hours, during the Equinoxes and the Winter and Summer solstices. These periods represent the portion of the day during which maximum seasonal shadows occur and which would be of concern to most people.

The analysis of potential shading impacts is based on the maximum potential height of the buildings that could occur in accordance with the Project's proposed development standards. This produces a shadow effect that is equal to the greatest shadow impact that might occur from Project buildings. Thus, the analysis results in a conservative estimate of shading impacts since the actual shading likely to occur would be less than that analyzed.

(4) Artificial Lighting

The lighting analysis addresses the affects of artificial lighting on the nighttime appearance of the Project and whether the Project lighting would interfere with the performance of off-site activities. The analysis begins with an identification of the characteristics of the area surrounding the Project site and areas that might be sensitive to impacts from off-site lighting. The analysis then identifies the nature of lighting that is proposed for the Project site, and describes the potential for causing off-site impacts. The analysis compares the anticipated off-site impacts to levels of lighting that could alter a neighborhood's character, or interfere with the performance of off-site activities.

b. Significance Thresholds

(1) Aesthetics

The proposed Project would have a significant impact on aesthetics, if:

- The proposed Project would substantially alter, degrade or eliminate the existing visual character of the area, including valued existing features, natural open space or other valued resources;
- The Project features would substantially contrast with the visual character of the surrounding area and its valued architectural image; or
- The implementation of the proposed Project would preclude the attainment of existing aesthetics regulations as expressed in applicable regional and City planning documents.

(2) Views

The proposed Project would have a significant impact on views, if:

- Project development would substantially obstruct an existing view of a valued view resource from a prominent view location.

(3) Shade/Shadow

The proposed Project would have a significant impact if:

- Shadow-sensitive uses would be shaded by Project structures for more than three hours between the hours of 9:00 A.M. and 3:00 P.M., between late October and early April, or more than four hours between the hours of 9:00 A.M. and 5:00 P.M. between April and late October.

(4) Artificial Lighting

The proposed Project would have a significant impact if:

- The Project would substantially alter the character of off-site areas surrounding the Project site.

- Project Lighting would interfere with the performance of an off-site activity.

c. Analysis of Project Impacts

(1) Project Design Features

The proposed Project would be developed under regulations, standards, and guidelines established in the Carson Marketplace Specific Plan. While these Specific Plan elements do not define specific building sizes, locations and appearance, they do set a framework that limits the potential affects of development on the visual qualities of the surrounding area. The implementation mechanisms of the Specific Plan require that site plan review be performed to review individual building projects for compliance with the Specific Plan requirements.

The Specific Plan's regulations, standards and guidelines are described in detail in Section II, Project Description. In summary, the key Specific Plan features that would shape the overall character of the development include the following:

- The total amount of development would be constrained by maximum development limits: 1,550 residential units and 1,995,125 square feet of commercial activity.
- Residential Density would be limited to 60 units per acre, and commercial floor area (FAR) would be limited to 33 percent (0.33) of the overall Project site.
- The heights of all buildings would be restricted depending on their use and size as shown in Table 13 on page 185. In summary, residential building heights would be limited to 75 feet. Generally, the largest portion of the commercial buildings would be limited to 32 feet in height, with incremental increases in height to 52 feet at limited locations. The theater and hotel could have base heights up to 60 feet and 75

Table 13

Building Height Development Standards

		Base Building	With Secondary Features [c]		With Major Features [c]	
USE	**AREA**	**Max. Height**	**Max. Height**	**Max. Width of Feature (% of elevation length)**	**Max. Height**	**Max. Width of Feature (% of elevation length)**
RESIDENTIAL						
Multi-family [a,b]	n/a	75 feet	75 feet	n/a	75 feet	n/a
COMMERCIAL						
Retail	>100,000 SF	32 feet	42 feet	30%	52 feet	15%
Retail	60,000-100,000 SF	30 feet	36 feet		48 feet	20%
Retail	40,000-60,000 SF	28 feet	34 feet		44 feet	30%
Retail	15,000-40,000 SF	28 feet	34 feet		40 feet	40%
Retail	<15,000 SF	22 feet	26 feet		30 feet	50%
Theater	n/a	60 feet	70 feet		80 feet	20%
Hotel	n/a	75 feet	79 feet		85 feet	15%
MIXED-USE						
Vertical mix of uses: two-story office/retail over at grade retail	10,000-30,000 SF	35 feet	40 feet	30%	45 feet	30%
Other vertical mix of uses[a,b]	n/a	75-85 feet	75-85 feet	n/a	75-85 feet	n/a
PARKING						
Parking Structure	n/a	45 feet	45 feet	n/a	45 feet	n/a
ACCESSORY STRUCTURES						
Accessory Storage		maximum height to be determined according to standard for principal use				

[a] *The maximum height of any living space in residential structures cannot exceed 74 feet, 11.9 inches, so as not to be classified as a high-rise structure as defined by Los Angeles County Fire Department regulations.*

[b] *The maximum height for vertically-mixed buildings is 85 feet when located within 1,000 feet of the project's easterly border (loosely defined as the 405 Freeway) as measured along the southern edge of Del Amo Boulevard. For buildings along the northern edge of Del Amo Boulevard or beyond the 1,000 foot area described above, the maximum height is 75 feet.*

[c] *Major and secondary features are building elements that are added to building faces to provide architectural interest, without adding to interior floor area. Major features are more prominent than secondary features, and are often used to focus visual attention with a vertical element that rises above the base building.*

Source: The Planning Center, October 2005.

feet, respectively, with additional heights on some architectural features up to 80 feet and 85 feet at limited locations.

- Project setbacks would limit development along the major project edges to the following: 110 feet along the I-405 Freeway, 70 feet facing the Torrance Lateral and existing residential development, 10 feet along Main Street and Del Amo Boulevard on the north side of Del Amo Boulevard, and 20 feet along Main Street and Del Amo Boulevard on the south side of Del Amo Boulevard.

Illustrations that portray the potential building shapes and locations are shown in Figures 17 thorough 20 on pages 187 through 190, respectively. Figure 17 illustrates the Project's conceptual plan, in plan and isometric views. It shows the Project densities and illustrates the Project's schedule of proposed height limits, whereby commercial buildings are limited to base building heights, but may have increased heights for secondary and major design features across limited portions of the buildings. It demonstrates that a substantial amount of the development would be at the lower permitted heights and that when higher limits are used, the building appearance may benefit from vertical variation.

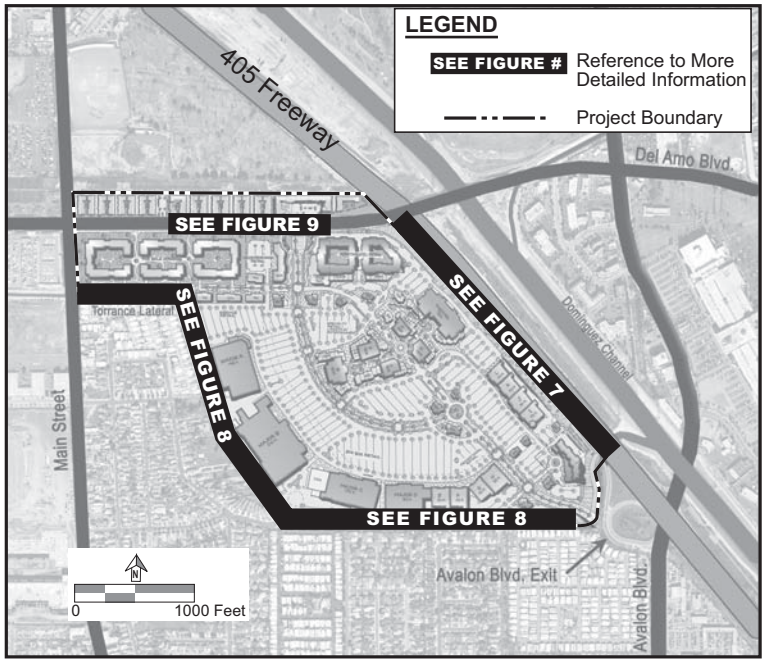
Figures 18 through 20 further illustrate the Project's visual qualities along key Project edges with cross-sections through site buildings, and elevations of the frontages along those edges. Each of the section and elevation illustrations reflects two sets of building heights. One set pertains to the building heights that are shown on the Project's conceptual plan. The second set of elevations shown (dotted lines) reflect the maximum building heights that would be allowed under the Specific Plan. These heights reflect potential building heights that could occur at those locations if taller buildings, such as the hotel or movie theater were moved to that location from the location shown in the conceptual plan. If buildings are located differently than shown on the conceptual plan, the overall massing of building would be limited by the Specific Plan's development and density limitations; and overall site densities similar to those shown, although the location of larger buildings would vary.

In addition to the general development guidelines that define the Project, the Specific Plan also includes numerous Project Design Features that address the design of the Project and its aesthetic qualities. Of the various such features, the following were considered elemental to the evaluation of aesthetic impacts discussed below:

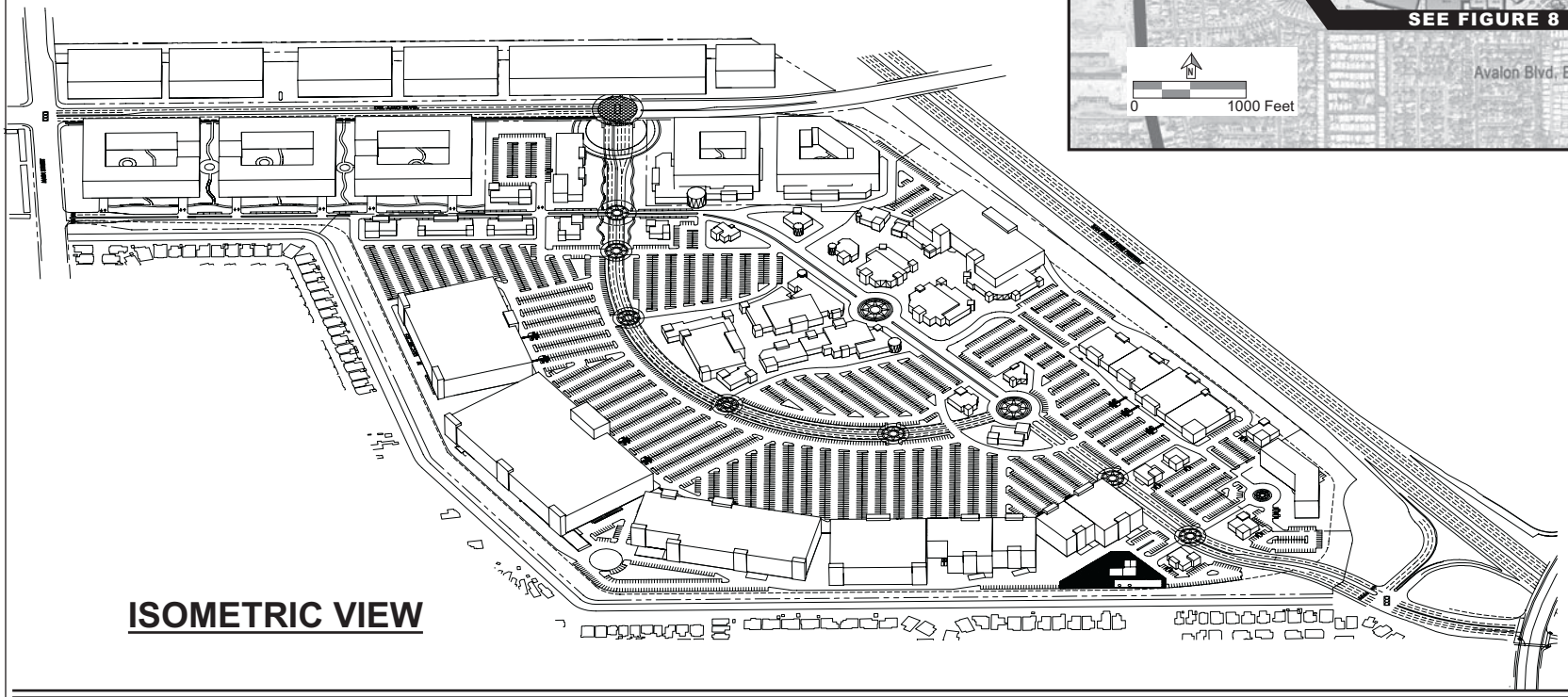
- **Landscaping**. As described in more detail in Subsection D.2.(a)(1).e of Section II, Project Description, all landscaping would be consistent with a plant palate of native trees, shrubs and groundcovers that would add uniformity to the Project site.[29] Plants

[29] *Plants would be limited to those that require lesser amounts of water consumption, and that are suited for potting and/or rooting without posing a threat to the remediation cap.*

PLAN VIEW



ISOMETRIC VIEW



PCR

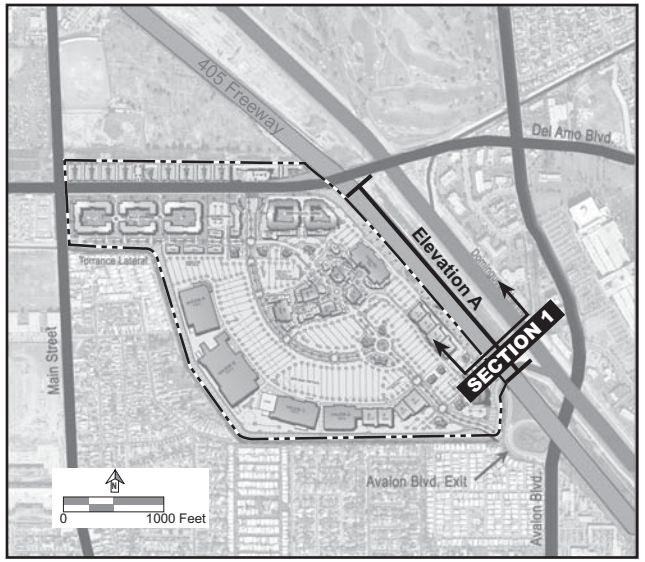
Figure 17
Conceptual Plan and Isometric Portrayal of Development

Source: Nadel Architects Inc., 2005

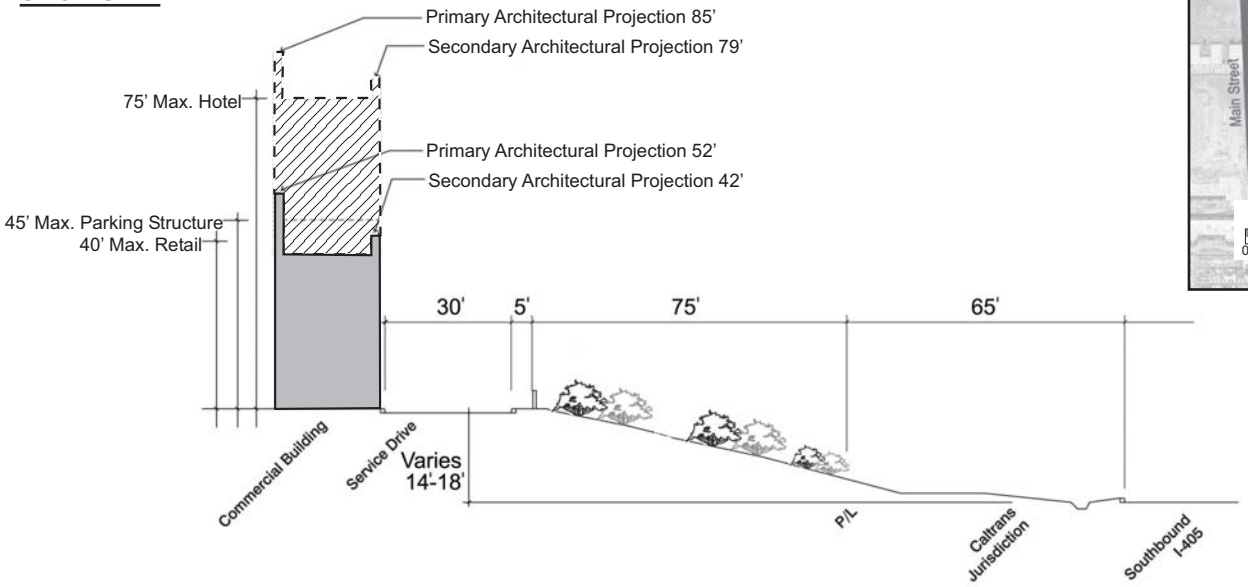
LEGEND

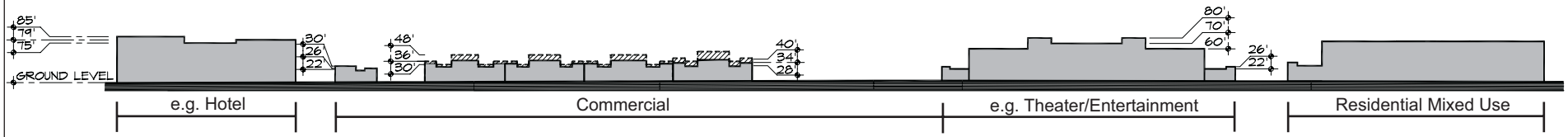
Maximum Building Heights Per Conceptual Plan

Maximum Building Envelopes with other Building Locations



SECTION 1





ELEVATION A: Facing the I-405 Freeway

PCR

Figure 18
Section and Elevation: I-405 Freeway

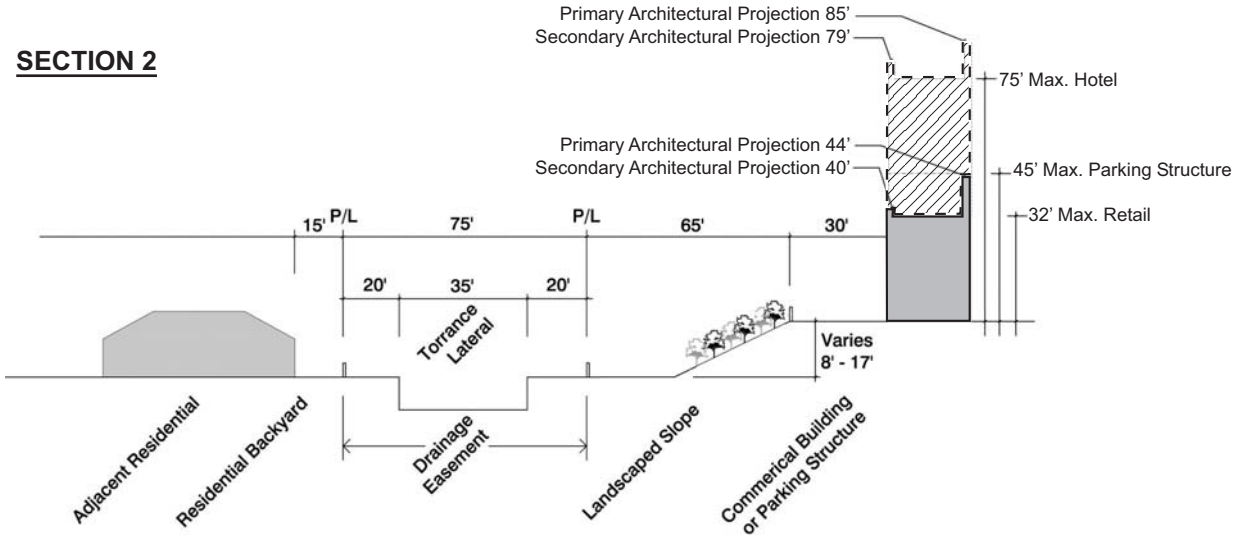
Source: Johnson Fain and Nadel Architects Inc., 2005

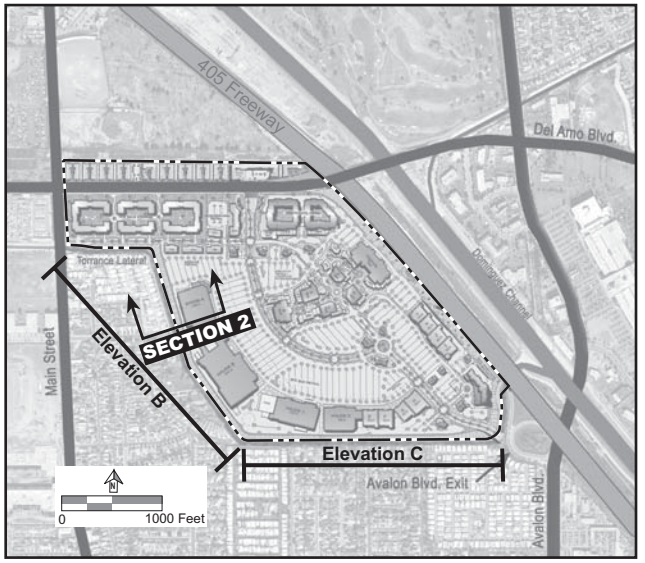
LEGEND

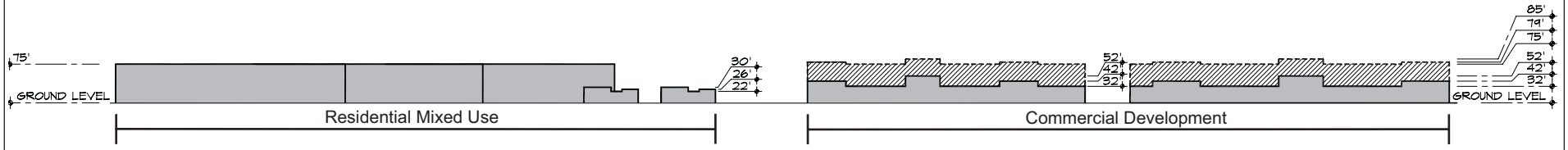
Maximum Building Heights Per Conceptual Plan

Maximum Building Envelopes with other Building Locations

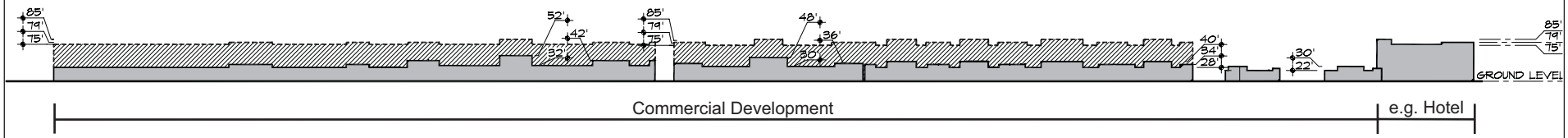
SECTION 2







ELEVATION B: Facing the Southwest Edge



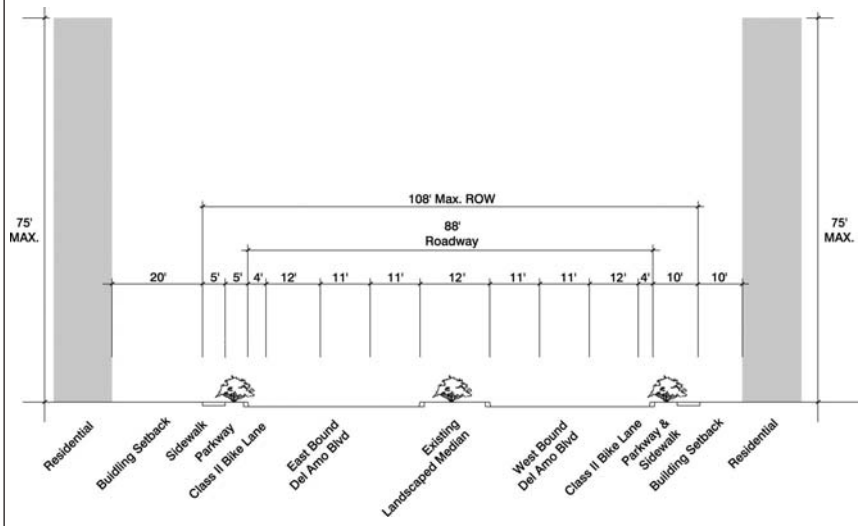
ELEVATION C: Facing the Southern Edge

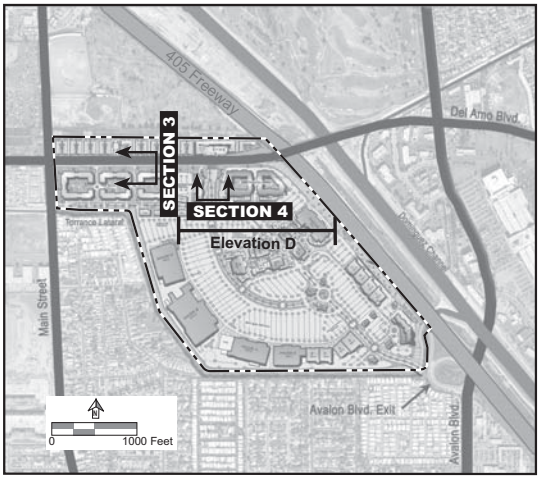
PCR

Figure 19
Section and Elevation: South and Southwest Edges

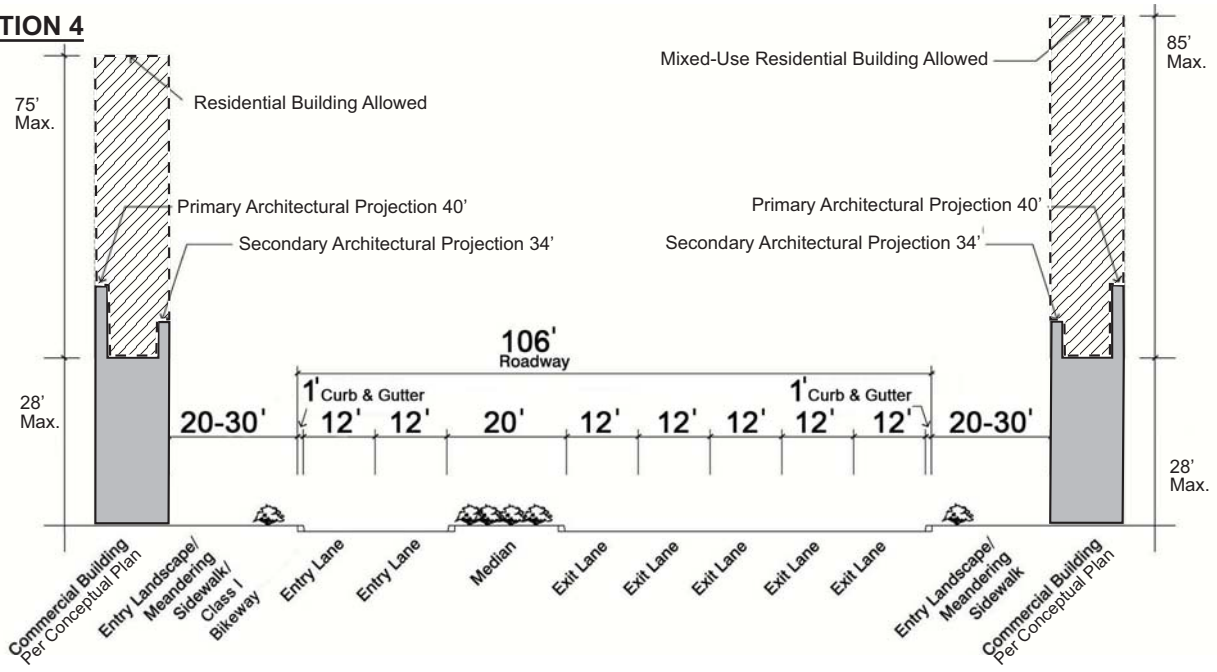
Source: Johnson Fain and Nadel Architects Inc., 2005

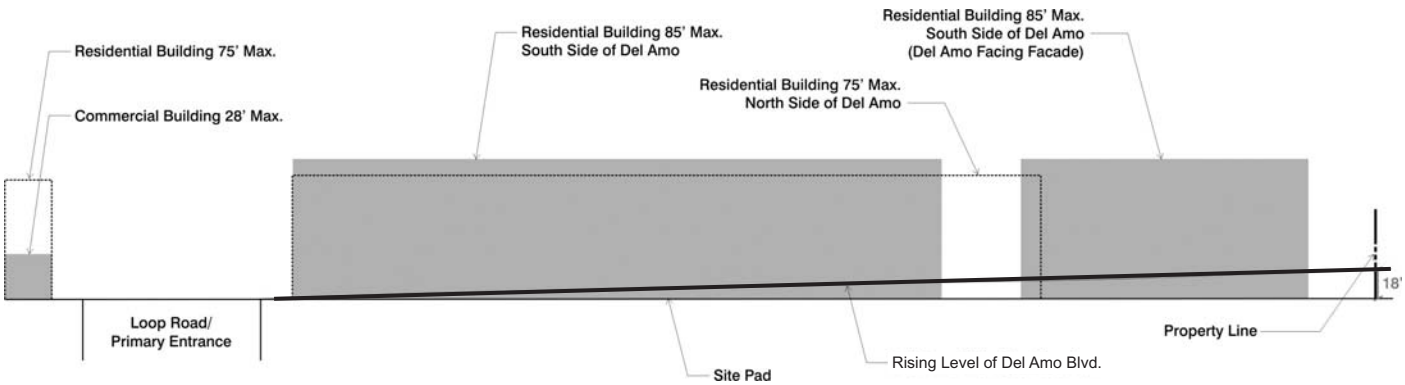
SECTION 3





SECTION 4





ELEVATION D

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Figure 20
Sections and Elevation-
Del Amo Boulevard

Source: Johnson Fain and Nadel Architects Inc., 2005

would be selected to support and complement the themes of the various Project components. Specially themed landscaping treatments would occur at key locations (e.g. freeway edge, channel slope and lifestyle and entertainment area). Of more detailed note: (1) landscaping themes on Del Amo Boulevard and Main Street would be coordinated with the landscaping of the Carson Street Conceptual Visualization and the Home Depot Center; (2) continuous shrub and ground cover plantings would be provided in the medians and edges of internal streets with vertical landscape and/or hardscape elements at a minimum of every 50 feet along the edges; (3) 5% landscape coverage would be provided in parking lots, and (4) 50% landscape coverage would be provided on parking structures visible to residences.

- **Buildings**. Buildings would include the following design features: varied and articulated building façades, featuring the use of colorful stucco, with a variety of architectural accent materials for exterior treatment at visually accessible locations.

- **Accessory facilities**. Wall façades would be varied and articulated. Accessory facilities such as trash bins, storage areas, etc., would be covered and screened.

- **Lighting**. Lighting would be limited in intensity, light control methods, and pole heights, so as to be directed on site, and not interfere with off-site activities.

- **Signs**. Signs would be limited in number and size as shown in Table 14 on page 192. The placement of the signs under the proposed conceptual plan is shown in Figure 21 on page 193. As indicated, the Project would provide a hierarchy of signs that would provide varied functions within the Project site. Taller signs would be located along the I-405 Freeway, where, two Freeway Icon signs (75 feet high) and 10 Freeway Monument signs (35 feet high) would be provided. Other signs would be more limited in size with four Primary Entry Monument signs limited to 15 feet in height and two Entry Arch sites limited to 25 feet. Main Street Entry and North Del Amo Entry Monument signs would be limited to 14 feet and 8 feet respectively. These signs would be located at selected locations, dispersed along roadways within the Project site.

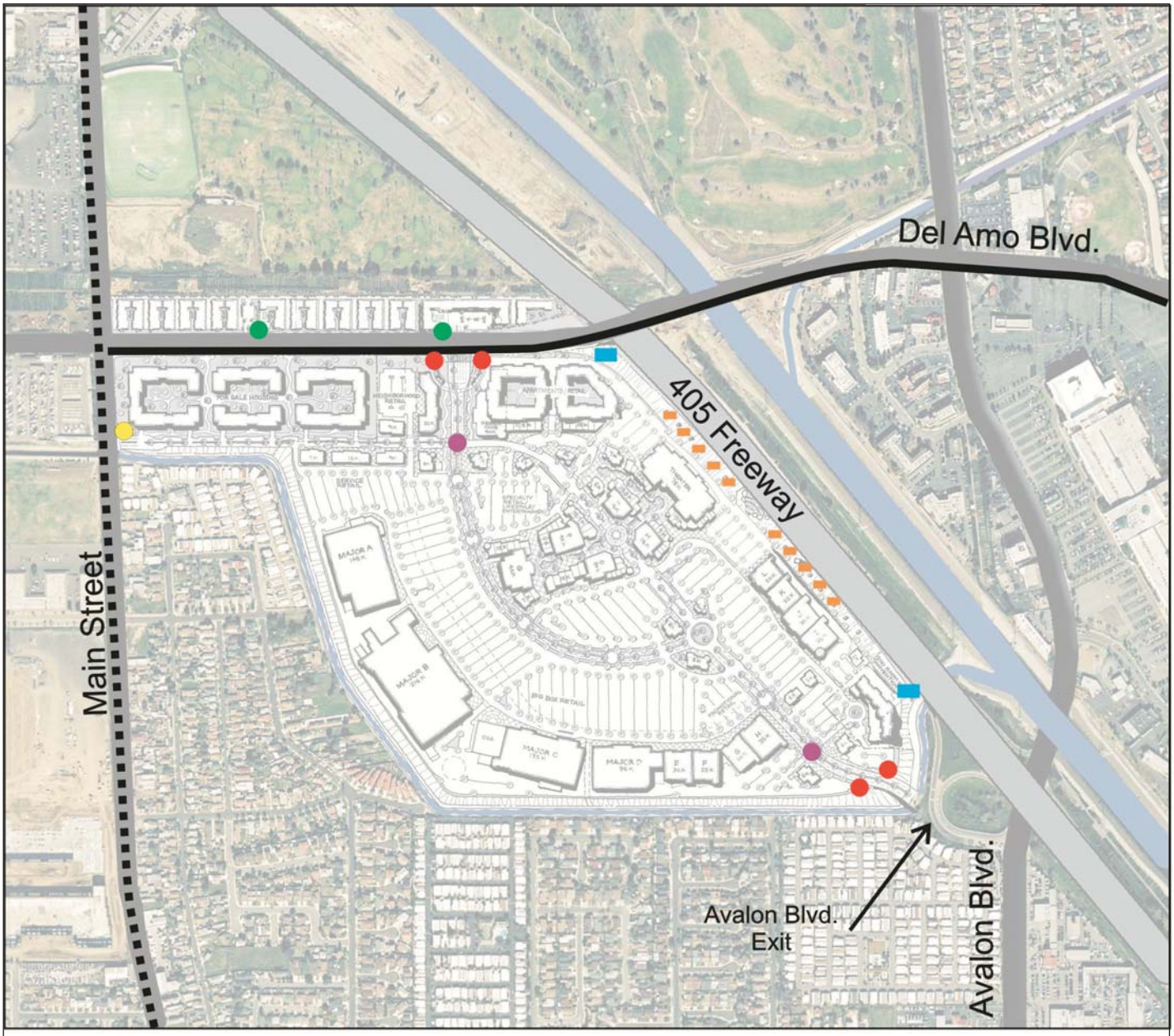
Table 14

Sign Standards

SIGN TYPE	MAXIMUM NUMBER	MAXIMUM SIGN DIMENSIONS		NOTES
		Height	Width	
Freeway Icon	2	70 feet [a]	25 feet	The base width will be 15-25 feet. If the base is greater than 15 feet, the sign will taper up to 15 feet at top. The attached reader board will be a maximum 16 feet high x 20 feet wide. The top of the reader board will be located no higher than 40 feet above the base of the sign. If only one Freeway Icon sign is constructed, it will most likely be located in a central location, between the Freeway Monument signage.
Freeway Monument	10	35 feet	20 feet	While the overall height is 35 feet, the sign is stepped up the slope along the freeway. Each sign consists of a sloped base - 5 feet high x 20 feet wide, tenant signage up to 15 feet high x 20 feet wide, and a tower element that extends 15 feet above the tenant signage and is 3 feet in width.
Primary Entry Monument	4	15 feet	20 feet	While the overall height is 15 feet, the sign consists of tenant signage up to 10 feet high x 20 feet wide and a tower element that extends 5 feet above the tenant signage and is 3 feet in width.
Entry Arch	2	25 feet	40 feet	Each arch consists of two towers, each with a dimension of 25 feet high x 3 feet wide. Each arch will span approximately 40 feet in width over the roadway. The banner element will be no greater than 3 feet in height x 40 feet in width.
Main Street Entry Monument	1	14 feet	8 feet	While the overall height is 14 feet, the sign consists of tenant signage up to 6 feet high x 8 feet wide and a tower element that extends 8 feet above the tenant signage and is 3 feet in width.
North Del Amo Entry Monuments	2	8 feet	12 feet	If the signage serves residential development, the sign dimensions shall be no greater than 6 feet high x 8 feet wide.

Note: Signage adjacent to the freeway will comply with Caltrans standards and requirements.
[a] *Heights of Freeway Icon signs are measured from the adjacent freeway grades.*

Source: The Planning Center, October 2005.



LEGEND

- Freeway Icon
- Freeway Monument
- Primary Entry Monument
- Entry Arch
- Main Street Entry Monument
- North Del Amo Entry Monument

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0 1,000 Feet

Scale in approximate feet

Source: The Planning Center, 2005

Figure 21
Conceptual Signage Plan

(2) Project Impacts

(a) Impacts on the Aesthetic Character of the Area

The impact of the proposed Project on aesthetics addresses five issues: (1) whether proposed development would substantially affect a valued aesthetic resource; (2) whether the visual character of the proposed development would substantially contrast with the visual character of surrounding development; (3) whether the Project would adversely affect existing retail activities so as to cause increased vacancies, with adverse affects on aesthetic character at off-site locations; (4) whether proposed development would cause greater effects than anticipated in existing regulations; and (5) whether the Project's construction activities would cause substantial changes to the environment of a nature different than those identified for the proposed Project.

(i) Impacts on Valued Resources

The proposed Project site is currently a large vacant parcel. It is fenced and contains no unique natural features or valued visual features. However, due to its lack of buildings, the site contributes to the visual quality of the area by offering visual relief from development, and offering a sense of spaciousness to those surrounding and traveling through the Project area (see Figure 13 on page 171 and Figure 15 on page 173). This open character of the site would be considered a valued resource.

Development of the Project site would convert its undeveloped appearance to one of development. This would constitute a substantial change to the aesthetic character of the Project site, and in so doing reduce the valued sense of spaciousness offered by the Project site. This change would have the greatest affects for travelers along Del Amo Boulevard, which is a public view corridor traveled by a large number of people. For these travelers, the open space would be converted to development on either side of the roadway that could be up to 75 feet tall, and 85 feet on the southern side of Del Amo Boulevard at the eastern end of the Project site (see Figure 20 on page 190). The change would also be noticeable by travelers along the I-405 Freeway (Photos 10 and 12 on Figure 15 on page 173), residential locations along the southerly/southwesterly edge of the Project site (Photos 7 through 9 on Figure 14 on page 172), and golfers at the Dominguez Hills Golf Course (Photo 16 on Figure 16 on page 174). Based on the impacts on Del Amo Boulevard, a public thoroughfare, and the overall impact on all of the surrounding locations combined, the conversion of the undeveloped area to a developed appearance would be considered a significant impact.

(ii) Impacts on Contrast with Existing Development

Relationship to Nearby Uses

The proposed Project would develop the site with uses that would lie adjacent to surrounding off site areas. The resulting visual relationships with the off-site areas would be as follows:

- **The Residential Neighborhoods to the South and Southwest.** (See Photos 7 through 9 on Figure 14 on page 172.) The area that lies south and southwest of the Project is a residential neighborhood consisting of single family residential units and three mobile home parks that are interspersed among the single-family units. Most of the units are single story, but many include second stories. The residential units would be separated from proposed development by a minimum of approximately 185 feet, inclusive of the intervening Torrance Lateral (55 feet wide with service roads) and the slope along the Project edge (see Cross-Section 2 on Figure 19 on page 189). The Specific Plan requires that the slope be landscaped with a combination of native and adapted drought tolerant trees, shrubs and groundcovers in order to soften the development edge as viewed from outside the southern and western edge.

  The development at the top of the slope would be designed pursuant to the Specific Plan guidelines. The potential massing of buildings under the proposed Conceptual Plan is shown in Elevations B and C on Figure 19 on page 189. Building heights for commercial buildings would vary from 22 feet to 32 feet depending on store size, with extensions up to 52 feet at limited locations for secondary and major building design features. Of the various design guidelines in the Specific Plan, several would reduce potential visual impacts along this Project edge. These include the following: (1) varied and articulated building footprints and wall facades, with vertical and horizontal offsets and varied roof ridge lines, (2) the use of colorful stucco, adobe stone, and sandstone for the exterior treatment of buildings, and (3) the covering and screening of accessory facilities (e.g. trash bins, storage areas, etc.).

  As shown in the proposed Conceptual Plan, the proposed Project would place uses on the Project site that vary from the existing off-site residential uses. However, the new development would not create a substantial contrast with the visual character of the surrounding area for the following reasons: (1) Project buildings would be located at some distance from residential units in a distinct district; (2) the buildings would be at a higher elevation, atop the berm, reducing the visual linkage between Project buildings and the residential uses; (3) the Project would provide landscaping on the buffer space between the Project uses and existing residential uses; (4) The maximum Project building heights that would occur along this edge under the Conceptual Plan would restrict much of the development to heights in the range of 28 feet to 32 feet,

which is not substantially greater than the heights of the two-story residential units; (5) the Project buildings and residential units would not sit side by side within a common view seen by large numbers of people from a public area; and (6) the Project design would follow guidelines established in the Carson Marketplace Specific Plan that would add interest to buildings and walls facing the existing development.

If development were to occur under a development scenario that varies from the proposed Conceptual Plan, impacts along this Project edge would be substantially similar to those of the Conceptual Plan due to Specific Plan restrictions that limit residential development to District 1 and District 3. The one notable exception is that development under the Specific Plan would allow a relocation of the theater and hotel, with building architectural features up to 80 feet and 85 feet, respectively, along a 70-foot setback. This would cause greater impacts than the Conceptual Plan by allowing larger commercial buildings along this Project edge. Unlike the currently proposed commercial uses, the theater and hotel uses would create a substantially greater contrast with the existing residential development. A substantial contrast could result in a significant impact. However, such an impact can be reduced to a less than significant level through the provision of a greater setback for these uses to increase the amount of buffer area, and reduce the exposure of nearby residents to such a contrast. A mitigation measure is proposed below to reduce such an impact to a less than significant level.

- **The Eastern Project Edge.** (See Photos 10 through 12 on Figure 15 on page 173. The proposed Project would add a new developed appearance to the top of the Project site along the I-405 Freeway. The building massing and its relationship to the Freeway are illustrated in Section 1 and Elevation A on Figure 18 on page 188.

  The I-405 Freeway along the eastern edge of the Project site is a large-scale infrastructure facility. It does not contain development, and therefore it has no potential for generation of contrast with existing development. Development along freeway edges, particularly commercial development, is a common and expected occurrence. The visual impact of the Project along the I-405 Freeway would be controlled by Specific Plan limitations and requirements including the following: (1) Separation between Project buildings and the I-405 freeway by 175 feet, inclusive of a 14-foot to 18-foot landscaped berm (with visually compatible plantings that would work in conjunction with signage and building facades) that would face freeway travelers; and (2) the Project design features that would include the 360 degree architecture, varied and articulated building footprints and wall facades, and the use of colorful stucco, adobe stone, and sandstone for the exterior treatment of buildings, and the covering and screening of accessory facilities (e.g. trash bins, storage areas, etc.).

The appearance of the freeway edge would be largely shaped by the signage that would be located within the landscaped slope facing the freeway. The proposed signage is intended to support the Project's role as a signature project, and attract attention. Consistent with this objective, the proposed signage program would allow two Freeway Icon signs (up to 70 feet high by 25 feet wide) and up to 10 Freeway Monument signs (up to 35 feet high by 20 feet wide). (See Figure 21 on page 193.)

Signs are often considered to detract from the aesthetic character of areas in which they are located. Such occurrences are more notable when signs are oversized for their context, disjointed, and individually unattractive. At the same time, signs can be attractive and add interest to an area, as well as useful information. The Carson Marketplace Project proposes a program of signs along the freeway, consistent with the Project's function as a signature Project, and commercial center for the City of Carson. This program would be implemented under the provisions of the Specific Plan.

The signage program presented in the Conceptual Plan, as shown on Figure 21 , has been configured to blend the signs into an overall thematic presentation along the freeway edge. Signs placed into such a thematic presentation can minimize unexpected contrasts between Project elements (i.e. buildings, landscaped buffer area, and multiple signs), thus avoiding a significant impact on the aesthetic character of this Project edge. If signage were to occur in a configuration that varies from that shown in the Conceptual Plan, it is not assured that a thematic presentation of the signs would occur and substantial contrast be avoided, in which case a significant impact could occur along this Project edge. A mitigation measure is included below to assure that the presentation of signs along this Project edge is in substantial compliance with that presented in the Conceptual Plan, to avoid such a significant impact.

- **The Northern Edge** The Project would add new residential and mixed use development adjacent to the northern edge of the Project site, which is an open-space utility corridor. There are no structures located along the northern edge of the Project site, and therefore there is no potential for contrast with existing development. The changes to the Project site's amenity as a neighbor to the golf course is addressed in the discussion of visual resources, above.

- **The Main Street Light-Industrial Edge** (See Photos 13 through 15 on Figure 16 on page 174). The northwest boundary of the Project site faces Main Street, with development areas located on either side of Del Amo Boulevard. Main Street currently demarcates a boundary between the largely light industrial district to the west and non-industrial uses to the east. Project development along this edge of the Project site would be mixed-use, with residential and commercial uses. The proposed

conceptual plan shows residential development along this Project edge. The aesthetic character of Main Street is shaped by its varied uses. If commercial development were provided it would be in keeping with the existing commercial/light industrial character of uses west of Main Street. New residential development, as shown in the conceptual plan, would offer a use that occurs north and south of the Project site along the east side of Main Street. While the mid-rise buildings would be taller than other residential development in the area, mid-rise residential buildings are commonly found in the vicinity of mixed use areas, and would not be considered to adversely contrast with existing buildings. Project development, with new landscaping, would replace the somewhat degraded character of the site. As was the case along other Project edges, impacts would be limited by the Specific Plan requirements including: the 360 degree architecture, varied and articulated building footprints and wall facades, and the use of colorful stucco, adobe stone, and sandstone for the exterior treatment of buildings.

Regional Context

The proposed Project is located within an urbanized area. Development to the west is comprised of a predominantly light-industrial district with scattered commercial uses, and development to the south consists of residential neighborhoods. The existing development on the eastern side of the Project site, a distinct commercial area, is substantially separated from the Project site by an infrastructure corridor that is comprised of the I-405 Freeway, open space, and the Dominguez Channel. The area north of the Project site has a distinct character with open space, the Dominguez Hills Golf Course, a small area of residential development, and the same infrastructure corridors as it extends north of the Project site, with open space and a recreational area beyond.

The implementation of the proposed Project would provide an in-fill development amongst these uses. In so doing it would contribute to the general urban character of the area. Development in District 2 would be commercial in nature and would have a maximum FAR of 0.33. With this limitation, large portions of District 2 would remain devoid of buildings, with large tracts of parking area. The development would have a character that is typically expected at interspersed locations throughout this region. The Carson Marketplace Specific Plan proposes landscaping and design treatments to add to the attractiveness of the Project. Among the landscaping features are the following: landscaping themes on Del Amo Boulevard and Main Street that would be coordinated with the Carson Street Conceptual Visualization and the Home Depot Center, continuous shrub and ground cover plantings in the medians and edges of internal streets with vertical landscape and/or hardscape elements at a minimum of every 50 feet along the edges, themed landscaping treatments at key locations (e.g. freeway edge, channel slope and lifestyle and entertainment area), 5% landscape coverage in parking lots, and 50% landscape coverage of parking structures visible to residences. Key design features have been identified above, including varied and articulated building facades, featuring the use of colorful stucco,

with a variety of architectural accent material for the exterior treatment of buildings. Signs across the Project site would be provided per a hierarchy of number and size that would be established in the Specific Plan so as to relate signage to specific purposes.

Development in Districts 1 and 3 would be mixed-use in nature. Their character under the conceptual plan would be dominated by the residential development, which would include mid-rise residential units. The maximum residential heights and densities would be 75 feet and 60 units per acre, respectively. The development character would convey mid-rise housing characteristics. This development would be located in an active urban area adjacent to and close to nearby freeways and would contribute to the urban form in an expected manner, and would therefore be in keeping with the overall character of the regional area. To the extent the development fully uses the available heights allowed, the occurrence of taller buildings on the Project site would offer vertical variation and would not necessarily be considered an adverse condition. If less residential development than shown in the conceptual plan were to occur, and more commercial development were provided in its place, the overall massing of development would be less. Commercial development has more stringent height and FAR limits, and stand-alone commercial development greater than 50,000 sq.ft. would not be allowed in these Districts. Commercial development would be in keeping with the character of other such development that is interspersed throughout the area. Development would occur under the same Specific Plan guidelines that were noted for the commercial development in District 2.

Environmental Operations and Equipment Station

In addition to the uses described above, the Project site would include an operations and equipment station for operations of the landfill gas system that would be required as a component of the Projects site remediation program. This station would include a small building, up to 20 feet tall, and a flare stack(s) up to approximately 35 feet tall on an approximately 1-acre site, surrounded by a wall.

While this use may vary from the commercial and residential development described above, its impacts on aesthetic character would not be substantial. Due to restrictions imposed by the SCAQMD, the station can not be located within 1,000 feet of residential development. Therefore, there would be no contrast with adjacent residential development. Further, the station would be subject to the Design Standards of the Specific Plan. Thus, even though the nature of the use is varied, its design can be blended with other site buildings, through architectural treatments. As a small building placed amongst the larger Project, with similar architectural treatments, the station would not cause a substantial contrast with surrounding buildings.

Conclusions Regarding Impacts on Contrast

As discussed above, the proposed Project would provide a distinct development set among the City's urban environment. Whether built according to the currently proposed Conceptual Plan, or variations from the Conceptual Plan that would be allowed under the

Specific Plan, the Project would portray a character that is in keeping with similar large-scale developments within the region. Further, except as noted below, development along the Project edges would be limited and not substantially contrast with the visual character of the surrounding area and its valued aesthetic image, and impacts on aesthetic character would be less than significant. These conclusions apply to all development under the proposed Conceptual Plan, and all development allowed under the Specific Plan, with two exceptions. Potentially significant impacts on aesthetic character were identified for development that might vary from the Conceptual Plan along two Project edges. In the first case, if the theater and hotel were to be located along the southern/southwestern Project edge, the additional heights allowed for those buildings, given their commercial nature, could result in a substantial contrast with the existing off-site residential development. In the second case, if signage along the eastern/I-405 Project edge were provided in a manner that is not consistent with that shown in the Conceptual Plan, the overall thematic scheme that minimizes contrast within the Project site may not occur. Mitigation measures are included below to address both of these potential impacts, and reduce them to less than significant levels.

(iii) Off-site impacts on Aesthetic Character

The proposed Project would not involve direct changes to the aesthetic character of any off-site locations. However, the Proposed Project poses a potential to affect existing retail businesses in the City, particularly the area in proximity to the Project site, with a resulting increase in retail vacancies within existing off-site retail areas at off-site locations. An increase in vacancy in any area has numerous potential land use consequences. Among these are the boarding of buildings and lack of maintenance, which can cause degradation of the visual appearance of the areas affected.

In order to determine whether such affects could result with implementation of the proposed Project, a study was undertaken to identify the proposed Project's affects on the sustainability of other economic areas (see Appendix J of the Draft EIR). This study is discussed more fully in Section IV.A., Land Use. In summary, the report concludes that during the short-term (the first five years following completion of the proposed Project), an impact on vacancy and sales per square foot would likely occur, most likely in smaller, older retail centers. However, the growth in retail demand that is forecasted to occur over the next 15 years is sufficient to support existing retail development as well as the proposed Project. As a result, long-term adverse impact on existing retail businesses is not anticipated. Thus, the addition of the Project's new retail activities would not likely cause any widespread, prolonged urban decay.

In addition, the study also concludes that short-term vacancies and/or closures that may occur among the smaller, older retail uses could likely result in retail renovations or upgrades – such as is occurring at the Del Amo and Southbay Pavilion Malls – or some of the space could transition from retail to non-retail uses, such as office or residential uses.

These conclusions suggest that there could be some decline in the viability of some existing off-site retail businesses that would detract from the aesthetic character of their surroundings. However, such occurrences would be limited and of short-term duration. The analysis of such impacts in Section IV.A., Land Use, concluded that no areas of the City are expected to fall into large-scale physical disrepair that would be unable to recover with natural increases in economic demand in the future. Therefore, impacts on the physical environment from Project induced vacancies or effects on sales per square foot, inclusive of impacts on the visual quality of the area, are concluded to be less than significant.

(iv) Comparison of Proposed Project with Existing Regulations

General Plan Policies

The Carson General Plan sets forth objectives, goals, policies, and implementation measures that provide a guideline for day-to-day land use policies and to meet the existing and future needs and desires of the communities, while integrating a range of state-mandated elements. Included within the General Plan are numerous guidelines pertaining to the design of the physical environment. Such Guidelines are included in both the 2004 and 1982 General Plans within the Land Use and Open Space Elements.[30] Policies that are particularly relevant to the visual qualities of the proposed Project are listed in Table 15 on page 202. Table 15 also evaluates the relationship between the Project's design features. As indicated, the design features are consistent with the general plan policies, and thus, a less than significant impact would occur.

Zoning Regulations

Section IV.A, Land Use, provides an analysis of the Project's consistency with the existing zoning regulations that are applicable to the Project site. As indicated, the proposed Specific Plan would provide zoning provisions that cover issues addressed in existing site zoning and would provide environmental protections that are generally equivalent to, or more protective of the environment than the existing zoning; and therefore, the proposed Project would be compatible with the City's Zoning ordinance. The analysis addresses zoning mechanisms that restrict the potential affects of development on the visual quality of the area: e.g. (1) allowed uses, (2) maximum height limits, (3) setbacks, (4) sign restriction, and (5) lighting regulations.

[30] *This analysis addresses the Land Use Elements of both the 1982 and 2004 Plans in order to address currently adopted policies, as well as previous policies and issues that may be raised under the legal challenge to the 2004 Plan.*

Table 15

Project Consistency General Plan—Design-Related Policies

Relevant Policy	Analysis of Project Consistency
Land Use Element—2004	
LU-12.3 Review landscape plans for new development to ensure that landscaping relates well to the proposed land use, the scale of structures, and the surrounding area.	The Carson Marketplace Specific Plan establishes landscaping concepts for the various areas of the Project site, and identifies a palette of permitted plants. The Specific Plan further requires site plan review for compliance with the Specific Plan to ensure that landscaping is provided consistent with this policy.
LU-12.5 Improve City appearance by requiring landscaping to screen, buffer and unify new and existing development. Mandate continued upkeep of landscaped areas.	The residential uses on the south and southwest sides of the Project site would be separated from proposed development by a minimum distance of approximately 185 feet that would serve as a buffer, inclusive of the intervening Torrance Lateral (75 feet wide with service roads) and a slope that runs along this face of the Project site. The slope rises approximately 8 feet to 16 feet to the Project site's finished grade level and Project Development which would also add to the buffer between proposed uses and the adjoining off-site residential uses. To further enhance this buffer, the Specific Plan proposes landscaping of the slope with a combination of native and adapted drought tolerant trees, shrubs and groundcovers. The only other location where new development would face existing development is the Main Street edge. The Specific Plan proposes landscaped setbacks along Main Street following the themes established in the Carson Street Conceptual Visualization and the Home Depot Center, thus creating a continuity of landscape appearance within the City.. Maintenance of landscaping would be provided in perpetuity through arrangements established by Applicant or its successors.
LU-13.1 Promote a rhythmic and ceremonial streetscape along the City's arterial roadways, continuing the use of landscaped medians.	The Specific Plan identifies landscaping concepts for each of the roadways, and includes the use of landscaped medians for all roads other than the Loop Road. The existing 15-foot landscaped median on Del Amo, a throughway across the Project site, would be maintained.
LU-13.3 Continue and, when possible, accelerate the undergrounding of utility lines throughout the City.	Proposed development would include undergrounding of utilities within the Project site.

Table 15 (Continued)

Project Consistency General Plan—Design-Related Policies

Relevant Policy		Analysis of Project Consistency
LU-13.4	Encourage architectural variation of building and parking setbacks along the streetscape to create visual interest, avoid monotony and enhance the identity of individual areas. Encourage pedestrian orientation by appropriate placement of buildings.	The Specific Plan includes design standards that require architectural variation, and landscaped setbacks, 360 degree architecture, varied and articulated building footprints and wall facades, and the use of colorful stucco, adobe stone, and sandstone for the exterior treatment of buildings.
LU-13.5	Continue to require landscaping treatment along any part of a building site which is visible from City streets.	Landscaped setbacks would be provided along all of the existing City streets.
LU-13.7	Ensure proper maintenance of parkways along arterial streets and landscaping of private property visible from the public right-of-way.	Maintenance of landscaping would be provided in perpetuity through arrangements established by Applicant or its successors.
LU-14.1	Work with Caltrans to provide and maintain an attractive freeway environment in Carson, including access ramps.	The Specific Plan includes landscaping and signage guidelines for the slope facing the I-405 Freeway. The Specific Plan requires visually compatible plantings that would work in conjunction with signage and building facades, thus creating an overall composition. In so doing, the Project would address Aesthetic recommendations of the Caltrans, Highway Design Manual.
LU-14.2	Require new commercial or industrial development adjacent to and visible from freeways and freeway ramps to incorporate full architectural and landscape treatment of the building on the freeway side.	The proposed Specific Plan includes design guidelines for development along the Project's I-405 edge. These guidelines include landscaping treatments for the slope facing the I-405 Freeway.
LU-14.4	Provide entry markers with landscaping on the major arterials.	The Specific Plan requires entryway landscaping treatments that separates them from their surrounding context via differing heights, color and textures.
Open Space Element—2005		
OSC-1.2	Maintain existing landscaping along the City's major streets and expand the landscaping program along other arterial streets throughout the community.	The Specific Plan includes landscaping treatments for all of the City's major streets. The recommended treatments for the two existing major City streets serving the Project site (Del Amo Boulevard and Main Street) require coordination with the landscaping themes of Carson Street Conceptual Visualization and the Home Depot Center, thus creating a continuity of visual treatments.
OSC-1.3	Require that adequate, usable and permanent private open space is provided in residential developments.	All residential development would include private open space, pursuant to the requirements of Section 9128.15 of the City of Carson Municipal Code.

Table 15 (Continued)

Project Consistency General Plan—Design-Related Policies

Relevant Policy	Analysis of Project Consistency
Land Use Element—1982	
Residential Land Use	
1. Residential areas should be organized into distinct districts and located in harmonious relationship with other adjacent or nearby land use activities.	Residential development would occur either as distinct developments, or in mixed-use configurations within Development Districts 1 and/or 3. Development would occur pursuant to various design and development standards established in the Specific Plan to insure harmonious relationships between uses; e.g., standards regarding site planning, building massing, color and materials, building detailing, etc.
5. Realistic density standards should be established to ensure adequate space, light and safety.	The Specific Plan includes a residential density limit of 60 du/acre. Development would be provided under Specific Plan guidelines that include landscaping requirements and minimum distances between buildings.
Commercial Land Use	
4. Commercial activities should be screened or buffered from adjacent residential uses wherever possible.	The residential uses on the south and southwest sides of the Project site would be separated from proposed development by a minimum distance of approximately 185 feet that would serve as a buffer, inclusive of the intervening Torrance Lateral (75 feet wide with service roads) and a slope that runs along this face of the Project site. The slope rises approximately 8 feet to 16 feet to the Project site's finished grade level and Project Development which would also add to the buffer between proposed uses, and the adjoining off-site residential uses. To further enhance this buffer, the Specific Plan proposes landscaping of the slope with a combination of native and adapted drought tolerant trees, shrubs, and groundcovers.
Source: PCR Services Corporation, 2005.	

The greatest impacts that could occur from Project development under the limitations established in the proposed Specific Plan have been addressed in the analysis in the remainder of this Section of the EIR. As indicated, development pursuant to the Specific Plan would not have a significant impact on the visual quality of the environment, except for two situations (tall buildings along the southern/southwestern Project edge, and signs along the I-405 Freeway), which can be mitigated. Since the Project, with the implementation of the proposed mitigation measures below, would not result in significant impacts and for the reasons stated in Section IV.A, Land Use, it is concluded that the Project would be compatible with existing zoning protections for the Visual Quality of the environment.

(v) Construction Impacts

Development of the proposed Project would also cause changes in the aesthetic conditions of the Project site during the time of construction. Construction would occur over several years. Activities would include site work, provision of infrastructure/streets, the sequential addition of buildings, and finally, the provision of landscaping and other aesthetic treatments.

The Proposed Project site currently has an altered and somewhat degraded appearance, with fencing around the site edges (see Photo 1 on Figure 12 on page 170). During the Project's development, the site would take on the appearance of a typical construction site. Construction activities related to Project development would bring construction workers and heavy equipment to the Project site to engage in typical construction activities (e.g., earth movement, materials delivery, building construction, etc.).

As buildings begin to rise on the site, its appearance would change in an incremental fashion from one of openness to one associated with full buildout of the area. At various times, the site would contain buildings in various stages of development, at various locations. Completed buildings would add, incrementally, to the total buildout effect described above.

Accordingly, construction impacts would cause an alteration in the site's aesthetic conditions. Site construction would be quite noticeable for travelers along Del Amo Boulevard. Views of construction activity would not be particularly noticeable from other locations, due to intervening development and the Project's elevation atop the berm. Because of the site's higher elevation in relationship to other, surrounding locations, e.g. the I-405 freeway, and residential areas south and southwest of the Project site, direct views of construction at and below ground level would be limited. This includes views of grading activity, with related equipment, workers and site disturbance. Impacts on views from these location would occur primarily with the construction of buildings as they arise on the Project site.

The short-term changes in the site's aesthetic conditions would not be considered to result in substantial impacts on the environment due to the following: (1) views of construction activity would be limited (occurring primarily for travelers along Del Amo Boulevard); (2) the site appearance would be typical of construction sites in urban areas; (3) the site currently has a somewhat degraded character; and (4) construction would occur within an urban setting and not adjacent to aesthetic resources, where unique or special visual conditions would be affected. As buildings arise on the Project site, the loss of undeveloped area and a feeling of spaciousness would be incrementally altered. At some point during construction, enough of the new buildings would be on site to cause the significant impact identified above regarding loss of a valued visual resource.

(b) Impact on Views

The impacts of the proposed Project on views addresses the impacts that would be caused by Project buildings locating between visual resources and view locations that surround the Project site. The nature of the existing views and view resources as well as the view locations are discussed in Subsection 2.a.(2).(a) of the Existing Conditions discussion, above.

As discussed therein, the view resources surrounding the Project site are limited. The view-scape in the Project area is that of an urban milieu with its array of interspersed developments, open spaces, and infrastructure improvements. The Project vicinity does not contain notable features that would typically fall under the heading of view resource, e.g. unique geologic features, natural areas, etc. The features of the Project's visual setting that might shape an appreciation of its visual character are limited to typical urban elements that may be subjectively appreciated, such as the architecture of particular buildings or patches of open space/landscaping between buildings. The two notable features that might catch the eye of travelers through the area are the Goodyear Blimp site, located on the north side of the I-405 Freeway, and the large fiberglass statue of a man holding a golf club on the south side of the I-405 Freeway.

The view locations that are addressed in the analysis include views from both public and private locations. Views toward and over the Project site from public vantage point are available from the I-405 Freeway, Del Amo Boulevard and Main Street. Views toward and over the Project site are available from limited residential units south and southwest of the Project site, and from fairly distant taller buildings, and buildings located in distant areas with raised elevations.

(i) Impacts from Public Vantage Points

I-405 Freeway

The I-405 Freeway provides the most notable views of the Project site, due to its large number of travelers and adjacency to the Project site. Views toward and over the Project site are limited, due to the site's location, which is off to the side of the freeway, and the berm along the edge of the Project site that limits longer-range views over and beyond the Project site (see Photos 10 through 12 on Figure 15 on page 173, and Section 1 on Figure 18 on page 188). Development beyond the Project site is urban in nature, without unique scenic resources. Therefore, Project development would not interfere with views of any such features. As described in the environmental setting subsection, above, the two visual resources along the I-405 Freeway – the Goodyear Blimp (when it is in port) and the large statue of the man with a golf club – are located north of the Project site and would remain visible from Freeway locations once Project development is complete.

Del Amo Boulevard

Del Amo Boulevard passes through the Project site separating the 11-acre parcel on the north (District 1) and the 157 -acre parcel on the south (Districts 1 and 2). Views of areas surrounding the Project site for both eastbound and westbound travelers on Del Amo Boulevard are limited (see Photos 4 through 6 on Figure 13 on page 171). The Project site's elevation and berms are at a higher elevation, thereby blocking clear views of surrounding development and features. When surrounding areas are apparent, those views are of the general urban environment and not toward any identified visual resource.

Main Street

Views along Main Street are shaped by light industrial uses interspersed among vacant and underdeveloped lands on the west and residential development, the vacant Project site, and open space on the east (see Photos 13 through 15 on Figure 16 on page 174). Views beyond the Project site are limited. Existing development on Main Street, north and south of the Project site, limits views over the site from distances beyond that development to the vicinity of the site entrance at Del Amo Boulevard. Views are further limited due to the berm along the western edge of the Project site and raised elevations within the Project site, that rise above Main Street. There are no views of unique scenic resources from vantage points along Main Street.

(ii) Private Vantage Points

Residential Neighborhood Adjacent to the Project Site

Views over the Project site from the residential neighborhood located to the south and southwest of the Project site are limited. The locations in this area currently have views toward the 8-foot to 16-foot slope (13 feet to 16 feet for most of its length) that lies along the edge of the Project site (see Photos 7 through 9 on Figure 14 on page 172). The raised slope presents a face to the adjacent areas that rises higher than ground level and first floor locations, limiting views of distant locations. However, views over the Project site may be available from some second-story rooms where they occur amongst the approximately 100 units adjacent to the Project site, or from a few more distant units located within the neighborhood. However, the number of such occurrences would be extremely limited. Views of the Project site at all from the remainder of the residential units in the neighborhood are blocked by existing development. Views of the site from neighborhood streets are available (from Grace Avenue, Neptune Avenue, Deloris Street, Dominguez Street, and Torrance Boulevard), however, these views also face the site berm and do not extend beyond the Project site. Again, there would be no views available of unique scenic resources, from vantage points within this area.

Other Private Locations

Views over the Project site are extremely limited, due to the flat terrain of the surrounding area and the prevalence of existing development. Existing development in the Project area blocks views of the Project site from more distant areas that lie at elevations lower than the intervening buildings. However, a few taller buildings (e.g., office buildings) may provide some views over the Project site from outlying areas and some distant locations at increased elevations (e.g., from the Palos Verdes Peninsula). From the more distant locations, the Project site is a relatively small, undeveloped parcel located amongst the urban environment. From such locations, the Project site becomes part of the scenery. Further, there is limited private development in the Project area, with those uses not oriented toward providing long-range views over the Project site.

Views of the site are also available from the Dominguez Hills Golf Course north of the Project Site (see Photo 16 on Figure 16 on page 174). Views from this location are shaped by the short- to mid-range views of the utility corridor and Project site, itself. The nearby Big Man statue and Blimp facility are located north of the golf course and their views would not be affected.

(iii) Conclusions Regarding View Impacts

The Project site is not considered a view resource, as it is in a degraded state, and does not include qualifying unique or natural qualities. The existing scenery in the Project area is limited to that of an urban setting with its array of interspersed developments, open spaces, and infrastructure improvements. The Project vicinity does not contain notable features that would typically fall under the heading of view resource, e.g. unique geologic features, natural areas, etc. Views of the two notable features that might catch the eye of travelers through the area, the Goodyear Blimp site located on the north side of the I-405 Freeway, and the large fiberglass statue of a man holding a golf club located on the south side of the I-405 Freeway would not be lost due to Project development. Views over the Project site are limited due to intervening development, the flat terrain in the areas surrounding the Project site, and that the Project site sits atop a berm that slopes down to surrounding areas. Therefore, the proposed Project would not substantially diminish any such views, and impacts on views of unique, valued scenic resources would be less than significant.

(c) Shade and Shadow Impact

The analysis of potential shading impacts focuses on the length of time for which sunlight for light, warmth, and overall quality of life is expected for land uses which include routinely useable outdoor spaces. Such uses are termed “shadow sensitive.” Uses typically considered shadow sensitive include parks, residences and recreational areas, churches, and schools.

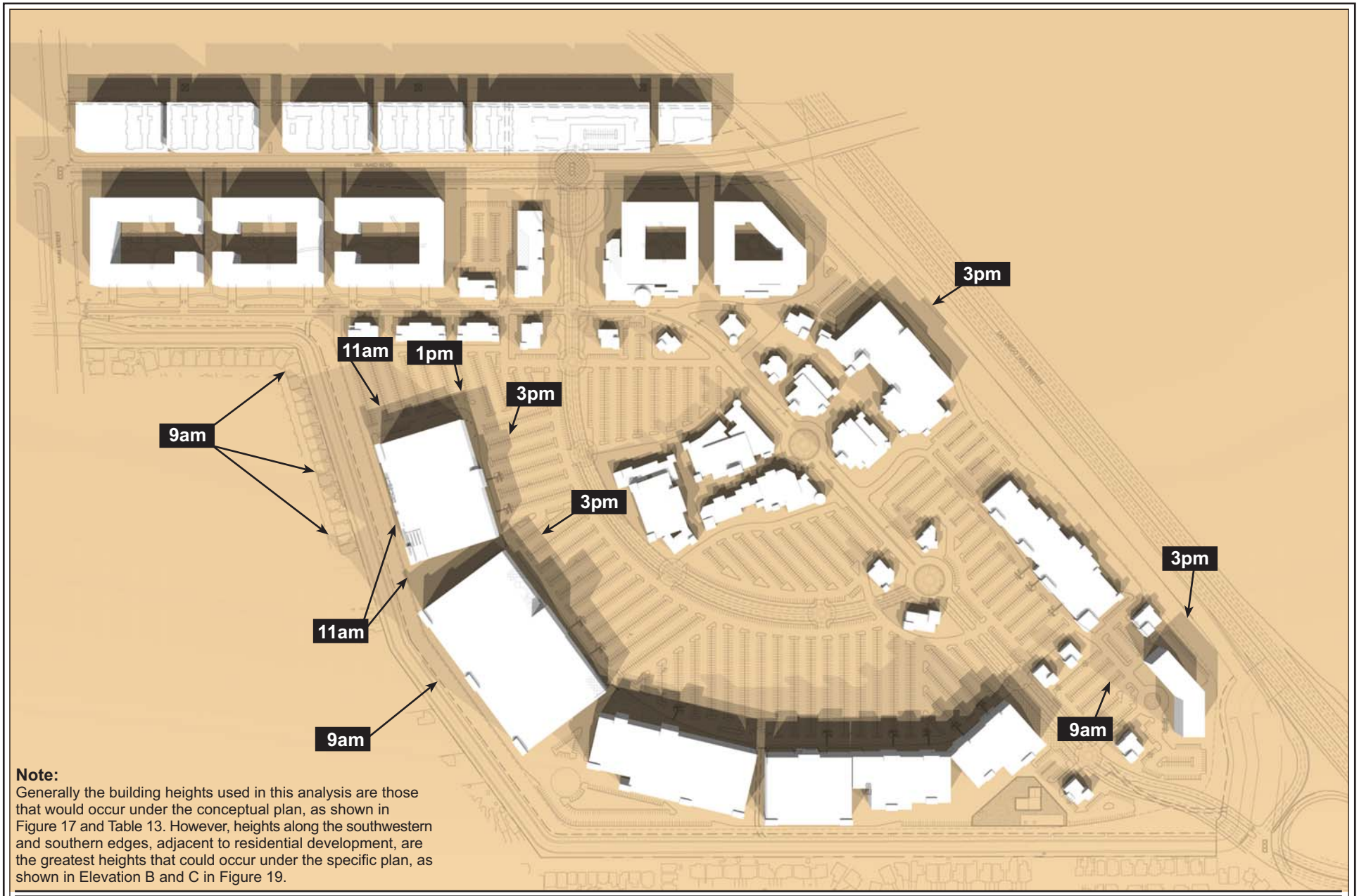
The shading analysis focuses on impacts that could occur at existing off-site locations. Shading within the site is considered a consequence of Project development and thus concluded to be an acceptable condition as new residents have the option of considering shading conditions when they select their residential locations. It is expected that people preferring greater amounts of sun access would choose locations accordingly and, at the same time, some population would exercise a preference for more shaded areas.

Shadow-sensitive uses in the vicinity of the proposed Project are confined to the residential uses located south and west of the Project site. There are approximately 100 residential units located opposite the Project site, across the Torrance Lateral. The shading that would occur in the vicinity of these residential uses is shown in the shading diagrams presented in Figures 22 through 24 on pages 210 through 212. These figures show the daily shading patterns for the winter solstice, fall equinox and summer solstice, respectively.[31] Shading impacts for other times of the year fall between the ranges that occur on these dates.

The shading analyses in Figures 22 through 24 are based on the building locations shown in the Conceptual Plan and Isometric Portrayal shown in Figure 17 on page 187. The building heights over most of the Project site are also the heights shown there, as shown in Table 13 on page 185. However, the heights used for the analysis on the southwest and southern edges of the Project site, the focus of this shading analysis due to the adjacent residential uses, are the maximum heights that could occur, pursuant to the Specific Plan limitations. These are the taller heights shown in Elevations B and C on Figure 19 on page 189. That is, they represent building envelopes that would be available should the theater or hotel be located along this Project edge. Thus, the potential shading conditions shown are overstated, since the heights analyzed, could only occur within a portion of the envelope shown.

Shadows are a function of the season, latitude and longitude, the height and shape of the structure casting the shadow, and topography. Due to the earth's rotation and annual revolution around the sun, the sun's position relative to any structure is constantly changing throughout the annual cycle. Consequently, shadows cast by a structure change substantially during the day, and from day to day throughout the year. Early morning shadows are quite long in westerly directions, shortening into northerly midday shadows as the sun moves from an eastern rise to a zenith, then gradually lengthening in an easterly direction as the sun approaches its late afternoon or evening setting location in the west. In the winter, when the period of sunlight is shorter and the sun is lower in the sky, shadows are uniformly longer than in summer for the same time of day.

[31] *Shading impacts at the spring equinox are similar to those of the fall equinox. The fall equinox has been represented here, since it occurs during daylight savings time when there is a greater opportunity to enjoy daylight activities.*



Note:
Generally the building heights used in this analysis are those that would occur under the conceptual plan, as shown in Figure 17 and Table 13. However, heights along the southwestern and southern edges, adjacent to residential development, are the greatest heights that could occur under the specific plan, as shown in Elevation B and C in Figure 19.

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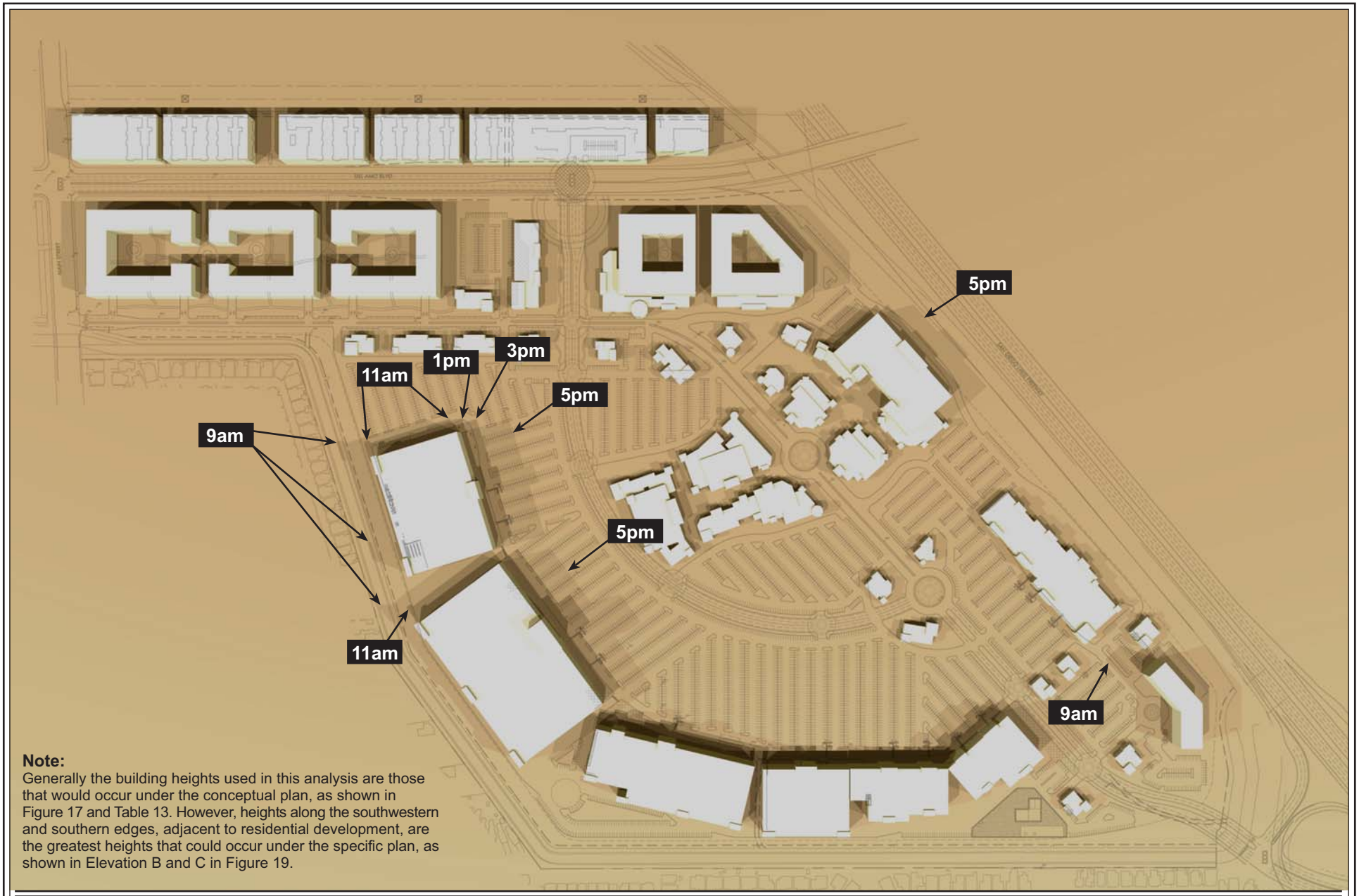
Source: Nadel Architects, 2005

Figure 22
Winter Solstice Shadows



Note:
Generally the building heights used in this analysis are those that would occur under the conceptual plan, as shown in Figure 17 and Table 13. However, heights along the southwestern and southern edges, adjacent to residential development, are the greatest heights that could occur under the specific plan, as shown in Elevation B and C in Figure 19.

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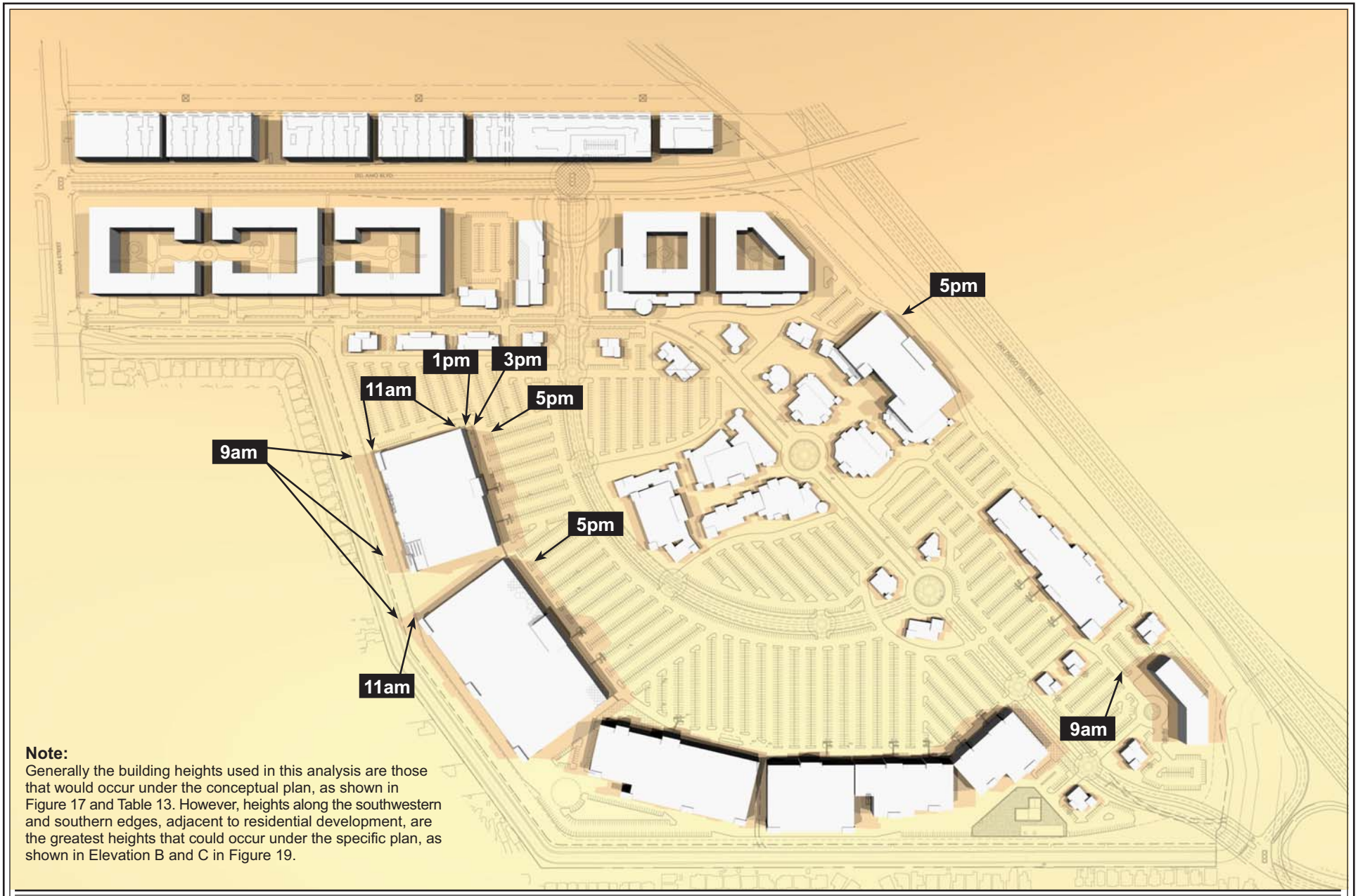
Source: Nadel Architects, 2005

Figure 23
Equinox Shadows



Note:
Generally the building heights used in this analysis are those that would occur under the conceptual plan, as shown in Figure 17 and Table 13. However, heights along the southwestern and southern edges, adjacent to residential development, are the greatest heights that could occur under the specific plan, as shown in Elevation B and C in Figure 19.

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Source: Nadel Architects, 2005

Figure 24
Summer Solstice Shadows

As indicated in Figures 22 through 24, the maximum off-site shading that could occur on sun-sensitive uses is limited. The greatest shading on nearby residential development would occur during winter mornings. Shading on the residential properties during the hours analyzed would occur for less than one hour. This is less than the 3-hour significance threshold, and impacts on shading would thus be less than significant.

(d) Impact of Artificial Lighting

The proposed Project is located within an urban area, amidst existing roadways (including the I-405 Freeway) with numerous sources of nighttime illumination. These uses establish ambient lighting levels typical of urban areas. There is an overall urban glow, with brighter lighting along major thoroughfares and commercial districts, and more subdued lighting within residential neighborhoods and developments.

The proposed Project would add new lighting to the Project area causing increases to the lighting levels of the existing setting. Project lighting would be typical of lighting anticipated with the Project uses, and would continue the existing lighting patterns. At the same time, Project lighting would be provided pursuant to the Project's lighting guidelines, which include requirements limiting light intensity, light control methods (e.g. shielding of lighting), and pole heights. The intention of these guidelines is to limit the lighting to levels within the needed range of lighting required for the Project uses and site security. In particular, the guidelines focus lighting on-site, and limit the glow that could occur on the Project site.

The analysis of potential impacts from Project lighting is concerned with the following issues: (1) additional glow from the Project site that would change the ambient lighting conditions in the Project area, (2) direct views of site lighting that could cause glare to population in surrounding areas, and (3) spillover lighting onto adjacent properties that could interfere with activities on those properties. The Project's increases in lighting at the Project site would not substantially alter the lighting characteristics of the area with regard to these issues. Because Project lighting would be akin to similar development in the Project area, and would be limited via lighting intensity and shielding, the Project's ambient lighting would blend with surrounding areas, and not offer a substantial contrast with the overall urban lighting conditions. Because site lighting would be directed on site through limited pole heights and shielding, the Project lighting would not cause off-site glare, or interference with off-site activities. Since, the Project lighting would not substantially alter the character of off-site areas surrounding the Project site and would not interfere with off-site activities, impacts of Project lighting would be less than significant. Notwithstanding, it is noted that lighted signs can cause distraction from and be out of character with residential development. Therefore, a mitigation measure is proposed to limit any such potential off-site affects on residential development adjacent to the Project site.

4. MITIGATION MEASURES

The above analysis identified a significant impact regarding the loss of a valued aesthetic resource; i.e., the spaciousness that is provided by the undeveloped Project site. The loss of spaciousness occurs as a result of placing development at the Project's location rather than by the particular type, size or location of development. Any notable development on the Project site would change its currently undeveloped character. Therefore, this significant impact cannot be mitigated.

Two other potentially significant impacts were identified that could occur if development varied from that shown in the proposed Conceptual Plan. Accordingly, two mitigation measures are proposed that address potentially significant impacts that could occur due to the location of taller buildings along the Project's southern/southwestern edge than could occur from buildings portrayed in the Conceptual Plan, and variations in sign placement that could occur along the Project's I-405 edge. A mitigation measure is also proposed to insure that sign lighting does not adversely affect residential development adjacent to the Project site.

Mitigation Measure B-1 The minimum setback for hotel and theater uses along the Torrance Lateral, adjacent to residential uses, shall be 250 feet.

Mitigation Measure B-2 The distribution, placement and orientation of signs along the I-405 Freeway shall be in substantial compliance with the signage concepts presented in the Conceptual Plan.

Mitigation Measure B-3 The line of sight between lighted signs on the Project site and existing residential development along the Torrance Lateral, opposite to the Project site shall be minimized.

Otherwise, the proposed Project would not generate significant impacts on the environment. This conclusion was based on the assumed implementation of the Specific Plan regulations, guidelines, and standards. The Specific Plan includes a mechanism for site plan review of all development to insure that it does in fact meet the requirements of the Specific Plan. As many of Specific Plan features were relied upon in the above analysis, the following mitigation measure is proposed:

Mitigation Measure B-4 All Project development shall undergo site plan review by the Planning Manager to assure that the following design measures have been implemented:

- **Landscaping**. All Landscaping shall be consistent with a plant palate of native trees, shrubs and groundcovers that shall add uniformity to the Project

site. Plants shall be selected to support and complement the themes of the various Project components. Specially themed landscaping treatments shall occur at key locations (e.g. freeway edge, channel slope and lifestyle and entertainment area). Of more detailed note: (1) landscaping themes on Del Amo Boulevard and Main Street shall be coordinated with the landscaping of the Carson Street Conceptual Visualization and the Home Depot Center; (2) continuous shrub and ground cover plantings shall be provided in the medians and edges of internal streets with vertical landscape and/or hardscape elements at a minimum of every 50 feet along the edges; (3) 5% landscape coverage shall be provided in parking lots, and (4) 50% landscape coverage shall be provided on the sides of parking structures visible to residences.

- **Buildings**. Buildings shall include the following design features: varied and articulated building façades featuring the use of colorful stucco, with a variety of architectural accent materials for exterior treatment at visually accessible locations.

- **Accessory Facilities and Walls**. Wall facades shall be varied and articulated. Accessory facilities such as trash bins, storage areas, etc., shall be covered and screened.

- **Lighting**. Lighting shall be limited in intensity, light control methods, and pole heights, so as to be directed on site, and not interfere with off-site activities.

5. CUMULATIVE IMPACTS

A list of Related Projects is presented in Section III.B in Table 9 on page 117, with their locations identified on Figure 8 on page 119. None of these projects is located in the immediate vicinity of the proposed Project. Except as noted below, none of the related projects would contribute to the same visual context as the proposed Project. The nearest related projects are located along Avalon Boulevard. These projects are located north of the I-405 Freeway, which acts as a large buffer between the Project site and uses along Avalon Boulevard. Many of the Related Projects are located south of the Project site, in an area that is buffered from the Project site by the existing residential neighborhoods.

One related project of note is Related Project No. 32, a small retail development located on Main Street to the south of the proposed Project site. This small project, which does not lie adjacent to the Project site, would contribute with the proposed Project, to the overall character of Main Street between Carson Street and the I-405 Freeway. This roadway segment was described in the analysis of Project impacts as having a somewhat mixed urban character defined by a range of different land use types. This related project is consistent with the existing range of uses along Main Street and would be consistent with the existing mix of urban uses which

already includes interspersed, commercial development, thereby precluding potential visual impacts.

Furthermore, all related projects in the City of Carson would be subject to numerous provisions of the Carson Municipal Code, which includes development standards, procedures for Site Plan and Design Review, and, for some sites, design review under the Design Overlay zoning designation. Therefore, other projects in the City of Carson would be expected to minimize adverse visual impacts. Should other projects result in significant impacts due to unusual circumstances, those occurrences would be isolated and at some distance from the proposed Project. The impacts of the related projects would be less than significant. However, since the proposed Project would have significant impact, cumulative impacts would also be significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project would result in the conversion of the undeveloped vacant site to a developed use, causing a loss of spaciousness that contributes to the aesthetic quality of the Project site and its surroundings. This impact is a significant impact that is inherent in the development of the site, and thus cannot be mitigated or avoided. Two other potentially significant impacts were identified that could occur if development varied from that shown in the proposed Conceptual Plan. Accordingly, mitigation measures were included to address impacts that could occur if buildings taller than those shown in the Conceptual Plan were located along the Project's southern/southwestern edge, or a variation in sign placement were to occur along the Project's I-405 edge. These mitigation measures reduced the related impacts to a level that is less than significant. Otherwise the proposed Project would not have significant impacts on aesthetic character of the surrounding area, views, shading conditions, or nighttime illumination.

IV. ENVIRONMENTAL IMPACT ANALYSIS
C. TRAFFIC, CIRCULATION AND PARKING

1. INTRODUCTION

This section is based on the technical report, *Traffic Impact Study for the Carson Marketplace,* prepared by Kaku Associates, October 2005. This Study has been reviewed and approved by the City's traffic engineer. The traffic study presented in Appendix D of this Draft EIR analyzes the potential impacts of the Project on the surrounding street and freeway system, including the Project's driveway access points, public transportation, access during construction, and parking.

2. ENVIRONMENTAL SETTING

a. Regional Network

The San Diego (I-405) and the Harbor Freeway (I-110) provide the primary regional access to the Project site via interchanges located at I-405/Avalon Boulevard, I-405/Main Street, I-110/Figueroa Street, and I-110/Hamilton Avenue. The I-405 Freeway/Avalon Boulevard interchange is located near the southeast corner of the Project site. The I-405 Freeway/Main Street interchange is located approximately 0.4 miles north of the Project site's Main Street/Del Amo Boulevard intersection. The I-110/Hamilton Avenue interchange (southbound) and the I-110/Figueroa Street interchange (northbound) are located approximately 0.3 miles southwest of the Project site's Main Street/Del Amo Boulevard intersection.

b. Local Street Network

The existing street system serving the Project site includes Avalon Boulevard, Main Street, Vermont Avenue, Hamilton Avenue, and Figueroa Street in the north-south direction and Del Amo Boulevard, Carson Street, Torrance Boulevard, 213th Street, and 190th Street in the east-west direction. Del Amo Boulevard via Stamps Drive, Main Street via Lenardo Drive, Avalon Boulevard and the I-405 southbound ramps via Lenardo Drive provide direct access to the Project site. In order to identify streets and intersections most likely to be impacted by Project traffic, in consultation with the City of Carson, the following 27 intersections were identified as part of the Project's traffic study area.

1. Figueroa Street & I-405 southbound on-ramp;

2. Figueroa Street & I-405 northbound off-ramp;
3. Main Street & I-405 southbound on-ramp;
4. Main Street & I-405 northbound off-ramp;
5. Vermont Avenue & Del Amo Boulevard;
6. Hamilton Avenue & Del Amo Boulevard;
7. Figueroa Street & Del Amo Boulevard;
8. Main Street & Del Amo Boulevard;
9. Stamps Drive & Del Amo Boulevard (future intersection);
10. Avalon Boulevard & Del Amo Boulevard;
11. Hamilton Avenue & I-110 southbound ramps;
12. Figueroa Street & I-110 northbound ramps;
13. Main Street & Lenardo Drive (future intersection);
14. Hamilton Avenue & Torrance Boulevard;
15. Figueroa Street & Torrance Boulevard;
16. Main Street & Torrance Boulevard;
17. Lenardo Drive & I-405 southbound ramps (future intersection);
18. Avalon Boulevard & I-405 southbound ramps;
19. Avalon Boulevard & I-405 northbound ramps;
20. Main Street & 213th Street;
21. Avalon Boulevard & 213th Street;
22. Vermont Avenue & Carson Street;
23. Figueroa Street & Carson Street;
24. Main Street & Carson Street;

25. Avalon Boulevard & Carson Street;

26. I-405 southbound ramps & Carson Street; and

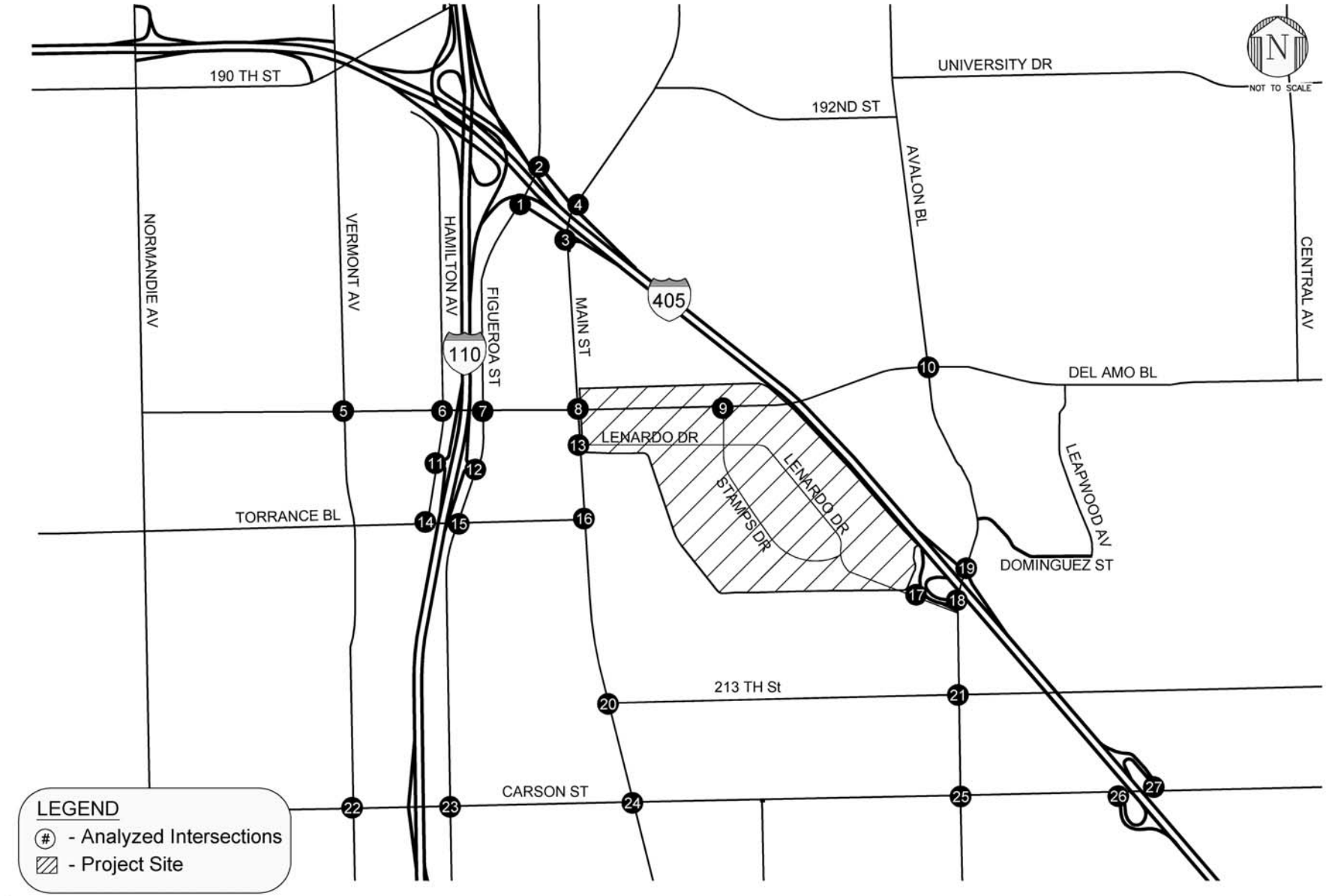
27. I-405 northbound ramps & Carson Street.

Figure 25 on page 220 shows the regional street network, the Project site, and the 27 study intersections. Figures 6A through 6C and Table 1 of the traffic technical report, presented in Appendix D of this Draft EIR, provide additional information regarding distribution patterns, median type, speed limits and parking limitations for key street segments. Appendix A of the traffic technical report also provides diagrams of the existing lane configurations for the 27 study intersections.

c. Existing Intersection Traffic Volumes and Service Levels

Existing weekday morning and afternoon peak hour intersection turning moving count data for the 27 study intersections are shown in Figure 3 of the traffic technical report (Draft EIR Appendix D). All of the study intersections are controlled by traffic signals except for the intersections of Figueroa Street & I-405 northbound off-ramp, Hamilton Avenue & Del Amo Boulevard, and Hamilton Avenue & 110 southbound ramps which are controlled by stop signs. The determination of service levels is based on the City of Carson's Intersection Capacity Utilization (ICU) method of intersection analysis. Traffic conditions and definitions associated with the range of service levels for signalized intersections are described in Table 16 on page 221. Level of service definitions for stop-controlled intersections are provided in Table 17 on page 221. As summarized in Table 18 on page 222, all of the 24 study intersections are currently in operation at Service Level D, or better, during the morning peak hour. Service Level D is considered an acceptable level of service. During the afternoon peak hour, 20 of the 24 study intersections are currently operating at acceptable levels of service better. The following four intersections are operating at LOS E during the afternoon peak hour.

- Intersection No. 6. Hamilton Avenue & Del Amo Boulevard (all-way stop-controlled);
- Intersection No. 11. Hamilton Avenue & I-110 southbound ramps (all-way strop-controlled);
- Intersection No. 19. Avalon Boulevard & I-405 northbound ramps; and
- Intersection No. 22. Vermont Avenue & Carson Street.



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Not to scale

Source: KAKU Associates, 2005

Figure 25
Street Network and Analyzed Intersections

Table 16

Level of Service Definitions for Signalized Intersections

Level of Service	Intersection Capacity Utilization	Definition
A	0.000-0.600	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701-0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901-1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths

Source: Transportation Research Board, Highway Capacity Manual, Special Report 209, 1994

Table 17

Level of Service Definitions for Stop-Controlled Intersections

Level of Service	Average Total Delay (seconds/vehicle)
A	$\leq$ 10.0
B	> 10.0 and $\leq$ 15.0
C	> 15.0 and $\leq$ 25.0
D	> 25.0 and $\leq$ 35.0
E	> 35.0 and $\leq$ 50.0
F	> 50.0

Source: Transportation Research Board, Highway Capacity Manual , 2000.

Table 18

Intersection Level of Service Analysis Summary
Existing (Year 2005) Conditions

Intersection	Existing Conditions			
	AM Peak Hour		PM Peak Hour	
	V/C or Delay	LOS	V/C or Delay	LOS
1. Figueroa St & I-405 SB On-Ramp	0.385	A	0.410	A
2. Figueroa St & I-405 NB Off-Ramp [1]	22.3	C	17.3	C
3. Main St & I-405 SB On-Ramp	0.466	A	0.637	B
4. Main St & I-405 NB Off-Ramp	0.695	B	0.720	C
5. Vermont Av & Del Amo Bl	0.596	A	0.706	C
6. Hamilton Av & Del Amo Bl [2]	21.1	C	36.3	E
7. Figueroa St & Del Amo Bl	0.628	B	0.591	A
8. Main St & Del Amo Bl	0.590	A	0.635	B
9. Stamps Dr & Del Amo Bl	Future Intersection			
10. Avalon Bl & Del Amo Bl	0.557	A	0.621	B
11. Hamilton Av & 110 SB Ramps [2]	20.8	C	47.2	E
12. Figueroa St & 110 NB Ramps	0.739	C	0.742	C
13. Main St & Lenardo Dr	Future Intersection			
14. Hamilton Av & Torrance Bl	0.657	B	0.648	B
15. Figueroa St & Torrance Bl	0.743	C	0.744	C
16. Main St & Torrance Bl	0.585	A	0.652	B
17. Lenardo Dr & I-405 SB Off-Ramp	Future Intersection			
18. Avalon Bl & I-405 SB Ramps	0.750	C	0.779	C

Table 18 (Continued)

Intersection Level of Service Analysis Summary
Existing (Year 2005) Conditions

Intersection	Existing Conditions			
	AM Peak Hour		PM Peak Hour	
	V/C or Delay	LOS	V/C or Delay	LOS
19. Avalon Bl & I-405 NB Ramps	0.894	D	0.933	E
20. Main St & 213th St	0.761	C	0.681	B
21. Avalon Bl & 213th St	0.549	A	0.691	B
22. Vermont Av & Carson St	0.833	D	0.911	E
23. Figueroa St & Carson St	0.669	B	0.826	D
24. Main St & Carson St	0.558	A	0.791	C
25. Avalon Bl & Carson St	0.758	C	0.821	D
26. Main St & 213th St	0.526	A	0.500	A
27. I-405 NB Ramps & Carson St	0.623	B	0.571	A

Note: ICU Methodology used for signalized intersections.
2000 HCM Unsignalized Methodology used for unsignalized intersections.
[1] *Intersection controlled with stop signs on 2 approach directions*
[2] *Intersection controlled with stop signs on all approach directions*

Source: Kaku Associates, October 2005.

(1) Site Access

The Project site consists of two primary components divided by Del Amo Boulevard. The majority of the Project site, consisting of 157 acres, is located south of Del Amo Boulevard and an 11-acre portion is located north of Del Amo Boulevard. The Project site north of Del Amo Boulevard has direct access to both Del Amo Boulevard and Main Street, although no paved driveways or roads currently exist. The Project site south of Del Amo Boulevard contains two existing paved streets, Stamps Drive and Lenardo Drive. Lenardo Drive intersects Main Street and Stamps Drive intersects Del Amo Boulevard. In the south portion of the Project site,

Lenardo Drive currently dead ends within the Project site, short of the I-405/Avalon Boulevard southbound off ramp.

(2) Freeways

(a) Selected Freeway Segments

The Project site is located within a regional freeway network. The Project's regional commercial uses and residential uses suggest the regional nature of the Project and the potential impact on freeway segments in the area. The following freeway segments are located within the Project's freeway traffic study area:

- State Route 91
  - I-110 Interchange to Avalon Boulevard;
  - Avalon Boulevard to Central Avenue;
  - Central Avenue to Wilmington Avenue;
  - Wilmington Avenue to Alameda Street/Santa Fe Avenue; and
  - Alameda Street/Santa Fe Avenue to Long Beach Boulevard.
- Interstate Route 110
  - Anaheim Street to Pacific Coast Highway;
  - Pacific Coast Highway to Sepulveda Boulevard;
  - Sepulveda Boulevard to Carson Street;
  - Carson Street to Torrance Boulevard;
  - Torrance Boulevard to I-405 Interchange;
  - I-405 Interchange to SR-91 Interchange;
  - SR-91 Interchange to Redondo Beach Boulevard;
  - Redondo Beach Boulevard to Rosecrans Avenue; and
  - Rosecrans Avenue to El Segundo Boulevard.
- Interstate Route 405
  - Long Beach Boulevard to I-710 Interchange;
  - I-710 Interchange to Alameda Street;

- Alameda Street to Wilmington Avenue;
- Wilmington Avenue to Carson Street;
- Carson Street to Avalon Boulevard;
- Avalon Boulevard to I-110 Interchange;
- I-110 Interchange to Vermont Avenue;
- Vermont Avenue to Normandie Avenue;
- Normandie Avenue to Western Avenue;
- Western Avenue to Crenshaw Boulevard;
- Crenshaw Boulevard to Redondo Beach Boulevard; and
- Redondo Beach Boulevard to Hawthorne Boulevard.

- Interstate Route 710

  - Pacific Coast Highway to Willow Street;
  - Willow Street to I-405 Interchange;
  - I-405 Interchange to Del Amo Boulevard;
  - Del Amo Boulevard to Long Beach Boulevard;
  - Long Beach Boulevard to SR-91 Interchange; and
  - SR-91 Interchange to Alondra Boulevard.

(b) Existing Freeway Conditions

Existing freeway mainline traffic volumes were obtained from *2004 Traffic Volumes on California State Highways* (California Department of Transportation [Caltrans]). Existing conditions on the study freeway segments are as follows:

- State Route 91 - This freeway is operating at LOS E or F during the A.M. peak hour in the westbound direction from Central Avenue on the west to Alameda Street/Santa Fe Avenue on the east.

- Interstate Route 110 - This freeway is operating at LOS E or F during the A.M. peak hour in the northbound direction from Carson Street on the south to State Route 91 on the north and during the P.M. peak hour in the southbound direction.

- Interstate Route 405 - This freeway is operating at LOS E or F during the A.M. peak hour in the northbound direction from Long Beach Boulevard on the south to the I-

110 Interchange on the north. The southbound direction is operating at LOS E or F during the P.M. peak hour from the I-710 Interchange on the south to Avalon Boulevard on the north. The northbound direction of the freeway is operating at LOS E or F from Normandie Avenue on the south to Redondo Beach Boulevard on the north during both the A.M. and P.M. peak hours.

- Interstate Route 710 - This freeway is operating at LOS E or F during the A.M. and P.M. peak hours in the southbound direction from Pacific Coast Highway on the south to the I-405 Interchange on the north.

d. Public Transportation

The Project study area is served by 11 bus lines operated by two different transportation agencies. The City of Carson operates seven of the 11 bus lines. The Los Angeles County Metropolitan Transportation Authority (MTA) operates the remaining four bus lines. All of these bus lines have stops near the Project site. The bus routes serving the Project area are described as follows:

(1) City of Carson Circuit Transit System

All Carson Circuit routes run in one direction, while regional bus lines run in both directions. All buses meet every 40 minutes at the Bus Terminal just north of the South Bay Pavilion.

- CAA (Cal-State Dominguez Hills) – This line runs along Central Avenue, Avalon Boulevard, Del Amo Boulevard, Leapwood Avenue, and Dominguez Street.

- CAB (Keystone) - This line operates along Avalon Boulevard, Carson Street, Main Street, and Figueroa Street.

- CAC (Scottsdale) – This line runs north-south along Avalon Boulevard.

- CAD&G (Metro Blue Line) - These lines operate in opposite directions along Avalon Boulevard, Del Amo Boulevard, Carson Street, and Dominguez Street.

- CAE (Turmont) - This line operates along Central Avenue, Avalon Boulevard, and Del Amo Boulevard.

- CAF (Business Center South) - This line operates along Avalon Boulevard, Del Amo Boulevard, Figueroa Street, and 213th Street.

- CAH (Hemingway Park) - This line operates along Avalon Boulevard.

(2) Metropolitan Transportation Authority

- MTA Line 205 – Line 205 operates between Willowbrook and San Pedro, passing through Compton, Carson, and Wilmington. In the vicinity of the Project site, this line operates on Carson Street, Avalon Boulevard, and Vermont Avenue.

- MTA Line 445 – Line 445 is an express line that operates between San Pedro and downtown Los Angeles, passing through Wilmington and Carson on the 110 Freeway.

- MTA Lines 446/447 – Lines 446/447 operate between San Pedro and downtown Los Angeles passing through Wilmington, Carson, and Los Angeles. In the vicinity of the Project, these lines operate on Avalon Boulevard and the 110 Freeway.

- MTA Line 550 – Line 550 operates between San Pedro and West Hollywood passing through the Mid-City, Exposition Park, and Harbor City areas of the City of Los Angeles. In the vicinity of the Project site, this line operates on Normandie Avenue, Vermont Avenue, and the 110 Freeway.

3. PROJECT IMPACTS

a. Methodology

(1) Project Construction

Construction traffic, including worker traffic and hauling, and construction activities that could disrupt through traffic and emergency access are compared with existing conditions in the Project vicinity. Construction impacts are determined on a case-by-case basis according to the length of time and frequency of any street closures, the classification of the impacted street, use of the street by emergency vehicles, temporary loss of pedestrian and vehicle access to any adjacent parcels, temporary loss of access to transit stops, and the availability of alternative locations of transit stops within one-quarter mile of the Project site, should they need to be relocated due to Project construction.

(2) Project Operation

The impact of the Project's traffic on the local and regional street system are based on a comparison of the Project's traffic with future cumulative traffic conditions. In order to evaluate the potential impact of the proposed Project on the local street system, the traffic generated by the proposed Project is separately assigned to the surrounding street system and added to the

cumulative base projections to represent cumulative plus Project conditions. The Intersection Capacity Utilization (ICU) method of intersection analysis is used to determine the intersection volume-to-capacity (V/C) ratio and corresponding level of service (LOS) for each signalized study intersection. The *Highway Capacity Manual* (Transportation Research Board, 2000) methodology for analysis of unsignalized intersections, wherein the level of service is based on average delay time per vehicle entering the intersection, was used to analyze the stop-controlled intersections.

The methodology for evaluating street capacity involves several steps, including the identification of existing base year (2005) traffic conditions, the calculation of ambient growth and related projects traffic to determine future (2010) cumulative baseline conditions (without the Project's traffic), the calculation of Project traffic, the assumed distribution of Project and related projects traffic, and an evaluation of the effects of Project traffic on 2010 baseline conditions. The following traffic scenarios are evaluated in the study:

- Existing (2005) Conditions - The analysis of existing traffic conditions provides a basis for the remainder of the study. The existing conditions analysis includes an assessment of streets, traffic volumes, and operating conditions within the study area.

- Cumulative (2010) Base Conditions - The objective of this scenario is to project future traffic growth and operating conditions that could be expected to result from regional growth and related projects in the vicinity of the Project site by the year 2010.

- Cumulative (2010) plus Project Conditions – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future conditions with the addition of Project-generated traffic. The impacts of the proposed Project on future traffic operating conditions were then identified.

Trip generation estimates for the related projects incorporate a combination of trip generation rates contained in Trip Generation, 7th Edition (Institute of Transportation Engineers [ITE], 2003). Service level analyses are based on the peak traffic periods (periods of heaviest traffic demand) are anticipated to occur during the weekday morning and afternoon peak hours.

(a) Cumulative Base Conditions (Future 2010 Conditions Without the Proposed Project)

Future traffic projections without the proposed Project were developed for the year 2010. The objective of this analysis is to project future traffic growth and operating conditions that are expected to result from ambient regional growth and related projects in the vicinity of the Project site by the completion of the Project. The cumulative base traffic forecasts reflect growth in

traffic from two primary sources: (a) background or ambient growth in the existing traffic volumes to reflect the effects of overall regional growth both in and outside of the study area, and (b) traffic generated by related projects located within the study area and in the vicinity of the Project site. In the analysis of cumulative base conditions, estimated trips associated with related and ambient traffic are assigned to the local street system on the basis of geographic trip distribution patterns. Related projects are anticipated for completion prior to buildout of the Project in 2010.

(i) Related Projects

Cumulative base traffic forecasts include the effect of other development projects, called related projects. Related projects are projects that are expected to be implemented in the vicinity of the Project site prior to the buildout date of the proposed Project. These related projects are taken into account in terms of the extent of growth, the location of growth, and the origins/destinations of trips. The City of Carson provided a list of 36 related or cumulative projects expected to be completed in the Project study area by year 2010. The list of related projects is presented in Table 9 on page 117 of this Draft EIR.

(ii) Ambient Growth

An ambient growth factor of 1.0 percent per year is applied to adjust the existing base year traffic volumes to reflect the effects of regional growth and development by the year 2010. The factor was developed after review of year Southern California Association of Governments (SCAG) year 2000 and year 2015 model data and the background growth rates contained in the CMP for the South Bay subregion. This adjustment is applied to the base year 2005 traffic volume data to reflect the effect of ambient growth by the year 2010. Ambient growth in traffic is due to the combined effects of continuing development outside the Project study area, intensification of existing developments, and other factors and occurs in addition to related projects and Project traffic.

(iii) Traffic Distribution

The evaluation of the geographic distribution of the traffic generated by the related projects depends on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which the employees and potential patrons of the proposed commercial developments would be drawn, the geographic distribution of activity centers to which residents of the proposed residential development would be drawn, and the location of the Project in relation to the surrounding street system. Using these factors, the distribution patterns were developed and used for the related projects. The estimated trips generated by the related projects are assigned to the local street system on the basis of the geographic trip distribution patterns. These volumes are then added to the existing traffic volumes and the ambient growth to represent cumulative base conditions (i.e., future conditions

without the proposed Project). Traffic distribution patterns associated with the Project's regional commercial and hotel uses; residential uses; and neighborhood commercial, entertainment, and restaurant uses are shown in Figures 6A through 6C, respectively, of the traffic technical report (see Draft EIR Appendix D)

(b) Cumulative Base with the Project (Future 2010 Conditions)

To determine the cumulative base with Project conditions, the Project-generated traffic volumes are added to the cumulative base traffic volumes to develop cumulative plus Project peak hour traffic volumes. The Project's estimated traffic is based on trip generation rates for various land uses and their geographic distribution.

(i) Trip Generation Rates

Trip generation rates for the Project's range of land uses, as shown in Table 19 on page 231, are developed in accordance with procedures established by the Institute of Transportation Engineers (ITE) Trip Generation Manual (7th Edition [2003]). In addition to trips generated by individual uses, the ITE generation rates account for additional vehicle trips that may be generated by the Project's proposed uses (e.g., employee and delivery/service trips). In estimating the Project's trips, pass-by trip reduction and internal trip credits are taken for the Project's commercial components. Pass-by credits account for trips that would have been passing by the Project site regardless of the Project, and, as such, would have not been generated specifically by the Project. These trips are not new trips generated by the Project because they are already on the adjacent roadway system. In addition, internal trips are not included in the analysis of off-site traffic impacts since these would not enter the surrounding street system. Internal trips, which are either made by walking or by vehicle, occur entirely on internal roadways and are a key characteristic of a multi-use development. Detailed ITE trip generation rates and codes for the Project's proposed land uses are listed in Tables 6 and 7 in the technical traffic report presented in Appendix D of this Draft EIR.

(ii) Mitigation Phasing

A mitigation phasing program is the methodology employed in the evaluation of the point at which significant impacts on study intersections occur. The mitigation phasing program is formulated to establish thresholds at which a development phase would trigger a significant impact at impacted intersections. The magnitude of the Project's impacts at the various impacted intersections were reviewed to determine the percentage of development at which significant impacts would be triggered. The mitigation phasing program allows the implementation of mitigation measures at the point of occurrence, rather than requiring the street improvements before they are actually needed.

Table 19

Carson Marketplace
Proposed Project Trip Generation Estimates [a]

No.	Land Use	Size	Unit	Daily	AM			PM		
					In	Out	Total	In	Out	Total
	REGIONAL RETAIL									
1	Shopping Center	500.000	KSF	19,332	251	160	411	869	942	1,811
	(Less-20% Internal)			(3,866)	(50)	(32)	(82)	(174)	(188)	(362)
	(Less-25% Pass By - PM & Daily)			(4,833)	0	0	0	(217)	(236)	(453)
	Subtotal			10,633	201	128	329	478	518	996
2	Supermarket	70.000	KSF	6,078	139	89	228	373	359	732
	(Less-20% Internal)			(1,216)	(28)	(18)	(46)	(75)	(72)	(146)
	(Less-40% Pass By)			(1,945)	(44)	(28)	(73)	(119)	(115)	(234)
	Subtotal			2,917	67	43	109	179	172	352
3	Electronic Superstore	50.000	KSF	2,252	10	4	14	110	115	225
	(Less-20% Internal)			(450)	(2)	(1)	(3)	(22)	(23)	(45)
	(Less-10% Pass By)			(180)	(1)	0	(1)	(9)	(9)	(18)
	Subtotal			1,622	7	3	10	79	83	162
4	Home Improvement Superstore	150.000	KSF	4,262	97	83	180	173	195	368
	(Less-20% Internal)			(852)	(19)	(17)	(36)	(35)	(39)	(74)
	(Less-20% Pass By)			(682)	(16)	(13)	(29)	(28)	(31)	(59)
	Subtotal			2,728	62	53	115	110	125	235
5	Discount Club	150.000	KSF	6,270	60	24	84	318	318	636
	(Less-20% Internal)			(1,254)	(12)	(5)	(17)	(64)	(64)	(127)
	(Less-30% Pass By)			(1,505)	(14)	(6)	(20)	(76)	(76)	(153)
	Subtotal			3,511	34	13	47	178	178	356
6	Home Furnishing Superstore	350.000	KSF	16,734	128	55	183	632	772	1,404
	(Less-20% Internal)			(3,347)	(26)	(11)	(37)	(126)	(154)	(281)
	(Less-20% Pass By)			(1,339)	(20)	(9)	(29)	(101)	(124)	(225)
	Subtotal			12,048	82	35	117	405	494	898
7	Office Supply Store	50.000	KSF	1,700	7	3	10	90	80	170
	(Less-20% Internal)			(340)	(1)	(1)	(2)	(18)	(16)	(34)
	(Less-20% Pass By)			(476)	(1)	0	(2)	(14)	(13)	(27)
	Subtotal			884	5	2	6	58	51	109
8	Pet Supply Superstore	50.000	KSF	2,480	11	4	15	124	124	248
	(Less-20% Internal)			(496)	(2)	(1)	(3)	(25)	(25)	(50)
	(Less-10% Pass By)			(198)	(1)	0	(1)	(10)	(10)	(20)
	Subtotal			1,786	8	3	11	89	89	178
	Subtotal for Regional Retail Center	***1,370.000***	***KSF***	***36,129***	***466***	***280***	***744***	***1,576***	***1,710***	***3,286***
	NEIGHBORHOOD RETAIL									
9	Supermarket	20.000	KSF	2,731	40	25	65	107	102	209
	(Less-20% Internal)			(546)	(8)	(5)	(13)	(21)	(20)	(42)
	(Less-40% Pass By)			(874)	(13)	(8)	(21)	(34)	(33)	(67)
	Subtotal			1,311	19	12	31	52	49	100

Table 19 (Continued)

Carson Marketplace
Proposed Project Trip Generation Estimates [a]

No.	Land Use	Size	Unit	Daily	AM			PM		
					In	Out	Total	In	Out	Total
10	Shopping Center	110.000	KSF	7,225	101	65	166	320	347	667
	(Less-20% Internal)			(1,445)	(20)	(13)	(33)	(64)	(69)	(133)
	(Less-25% Pass By - PM & Daily)			(1,806)	0	0	0	(80)	(87)	(167)
	Subtotal			3,974	81	52	133	176	191	367
	Subtotal for Neighborhood Retail Center	***130.000***	***KSF***	***5,285***	***100***	***64***	***164***	***228***	***240***	***467***
	RESIDENTIAL									
11	Apartments	400	DU	2,554	40	160	200	155	83	238
12	Condominiums	1,150	DU	5,117	62	302	364	298	147	445
	Subtotal for Residential	***1,550***	***DU***	***7,671***	***102***	***462***	***564***	***453***	***230***	***683***
	HOTEL									
13	Hotel	300	Rooms	3,058	98	62	160	94	83	177
	Subtotal for Hotel	***300***	***Rooms***	***3,058***	***98***	***62***	***160***	***94***	***83***	***177***
	RESTAURANTS									
14	High-Turnover (Sit Down) Restaurant	50.000	KSF	6,358	300	276	576	333	213	546
	(Less-20% Internal)			(1,272)	(60)	(55)	(115)	(67)	(43)	(109)
	(Less-20% Pass By)			(1,017)	(48)	(44)	(92)	(53)	(34)	(87)
	Subtotal			4,069	192	177	369	213	136	350
15	Fast Food Restaurant	15.000	KSF	10,740	395	263	658	200	192	392
	(Less-20% Internal)			(2,148)	(79)	(53)	(132)	(40)	(38)	(78)
	(Less-30% Pass By)			(2,578)	(95)	(63)	(158)	(48)	(46)	(94)
	Subtotal			6,014	221	147	368	112	108	220
16	Quality Restaurant	16.125	KSF	1,450	8	5	13	81	40	121
	(Less-20% Internal)			(290)	(2)	(1)	(3)	(16)	(8)	(24)
	(Less-10% Pass By)			(116)	(1)	0	(1)	(7)	(3)	(10)
	Subtotal			1,044	5	4	9	58	29	87
	Subtotal for Restaurants	***81.125***	***KSF***	***11,127***	***418***	***328***	***746***	***383***	***273***	***657***
	COMMERCIAL RECREATION/ENTERTAINMENT									
17	Multiplex Movie Theater	4500	Seats	3,600	12	1	13	130	230	360
	(Less-20% Internal)	110.000	KSF	(720)	(2)	0	(3)	(26)	(46)	(72)
	(Less-10% Pass By)			(288)	(1)	0	(1)	(21)	(37)	(58)
	Subtotal			2,592	9	1	9	83	147	230
18	Bowling Alley	25.000	KSF	833	47	31	78	31	44	89
	(Less-20% Internal)			(167)	(9)	(6)	(16)	(6)	(9)	(18)
	(Less-10% Pass By)			(67)	(4)	(3)	(6)	(3)	(4)	(7)
	Subtotal			599	34	22	56	22	31	64
19	Fitness Center	35.000	KSF	1,153	18	24	42	72	70	142
	(Less-20% Pass By)			(231)	(4)	(5)	(8)	(14)	(14)	(28)
	Subtotal			922	14	19	34	58	56	114

Table 19 (Continued)

Carson Marketplace
Proposed Project Trip Generation Estimates [a]

No.	Land Use	Size	Unit	Daily	AM			PM		
					In	Out	Total	In	Out	Total
20	Multi-Purpose Recreation Center	44.000	KSF	2,450	39	10	49	91	56	147
	(Less-20% Internal)			(490)	(8)	(2)	(10)	(18)	(11)	(29)
	(Less-20% Pass By)			(392)	(6)	(2)	(8)	(15)	(9)	(24)
	Subtotal			1,568	25	6	31	58	36	94
	Subtotal for Commercial Recreation/Entertainment	***214.000***	***KSF***	***5,681***	***82***	***48***	***130***	***221***	***270***	***502***
	TOTAL			**68,951**	**1,266**	**1,244**	**2,508**	**2,955**	**2,806**	**5,772**

[a] *Trip generation rates are those provide by the Institute of Traffic Engineers (ITE). The rates and Land Use Codes for each use are discussed further in the Traffic Technical Report (Appendix D).*

Source: Kaku Associates, October 2005.

The mitigation phasing program is predicated on an assumption that the Avalon Boulevard/I-405 interchange improvements, including the extension of Lenardo Drive to Avalon Boulevard, realignment of the southbound I-405 ramps to intersect the Lenardo Drive extension rather than Avalon Boulevard directly, a new southbound on-ramp at the east leg of the Avalon Boulevard/Lenardo Drive intersection, and reconfiguration of the northbound off-ramp to permit left-turns to southbound Avalon Boulevard, would be implemented concurrently with the Project and that the interchange improvements are a separate off-site project to be undertaken by an entity other than the Applicant.

(3) Freeway Traffic

(a) Freeway Level of Service

The analysis of potential impacts on the regional transportation system, including impacts on the I-110, I-405, SR-91, and I-710 freeways is conducted in accordance with the transportation impact analysis procedures outlined in the Los Angeles County Congestion Management Plan (CMP). Freeway segment levels of service are determined based on V/C ratios and the definitions shown in Table 20 on page 234. In accordance with the values established in the Highway Capacity Manual, a LOS E service capacity of approximately 2,200 vehicles per hour per lane is used for freeway mixed-flow lanes. For the purposes of the analysis, auxiliary and high-occupancy vehicle (HOV) lanes are analyzed as the equivalent of half of a mixed-flow lane.

Table 20

Level of Service Definitions for Freeway Mainline Segments

Level of Service	Volume/Capacity Ratio
A	0.00 - 0.35
B	>0.35 - 0.54
C	>0.54 - 0.77
D	>0.77 - 0.93
E	>0.93 - 1.00
F(0)	>1.00 - 1.25
F(1)	>1.25 - 1.35
F(2)	>1.35 - 1.45
F(3)	>1.45

Source: Metropolitan Transportation Authority, 2004 Congestion Management Program for Los Angeles County, Appendix B.

(b) Cumulative (2010) Conditions

Projected year 2010 cumulative base peak hour traffic volumes are developed by adjusting the existing freeway mainline traffic volumes from 2004 Traffic Volumes on California State Highways using 1.0 percent per year as the growth factor for the freeways in the region.

(4) Access

The impact of the Project's points of access on the adjacent existing streets is determined by calculating the V/C ratio to find the corresponding LOS under future cumulative base with Project conditions.

(5) Regional Transit

The analysis of Project traffic in relation to the regional transportation system is conducted according to the 2004 Congestion Management Plan (CMP) for Los Angeles County (Los Angeles County Metropolitan Transportation Authority, 2004). The CMP Section D.8.4 provides a methodology for estimating the number of transit trips expected to result from a project based on the projected number of vehicle trips. This methodology assumes an average vehicle ridership (AVR) factor of 1.4 per estimated vehicle trips in order to estimate the number of person trips to and from the Project. The CMP also provides guidance regarding the percent of person trips assigned to public transit depending on the type of use (commercial/other or

residential) and the proximity to transit services. The nearest designated CMP transit corridor is the Harbor Freeway Corridor, approximately 0.4 miles to the west. In accordance with CMP guidelines, where a site is located more than one-quarter mile boundary from existing services, approximately 3.5 percent of the project person trips may use public transit to travel to and from the site. To calculate the impact of the Project on regional transit, the projected number of person trips on transit is compared to existing conditions.

(6) Parking

The determination of the impact of the Project on parking is made according to a comparison between the City's Development Standards and the Project's estimated peak demand. The Draft EIR parking analysis recognizes that, although the City of Carson Development Standards provide peak parking ratios for individual land uses, the Development Standards do not account for combined peak parking demand. While this appropriately recognizes that separate land uses generate different parking demands on an individual basis, it does not reflect the fact that the combined peak parking demand, when a mixture of land uses shares the same parking supply, can be substantially less than the sum of the individual demands. For example, retail uses peak in the early- to mid-afternoon while restaurant uses peak in the lunchtime and/or evening hours (depending on the type of restaurant) and cinema uses peak in the evening hours.

The Project's estimated peak parking demand is based on the Urban Land Institute (ULI) Shared Parking Model. The ULI describes shared parking as a parking space that can be used to serve two or more individual land uses without conflict or encroachment. The opportunity to implement shared parking is the result of two conditions:

- Variations in the peak accumulation of parked vehicles as the result of different activity patterns of adjacent or nearby land uses (by hour, by day, by season); and
- Relationships among land use activities that result in people's attraction to two or more land uses on a single auto trip to a given area or development.

Three types of shared parking factors were considered in the parking demand analysis: (1) variations in time-of-day accumulation of parking demand, (2) seasonal variations in parking demand, and (3) internal capture between the various uses. Peak demand ratios, time-of-day variation factors, and seasonal variation factors are based on ULI research and are provided in Appendix D of the technical traffic report, which is presented in Appendix B of this Draft EIR.

The residential and commercial components of the Project are considered separately, both due to the typical approach of providing dedicated (non-shared) spaces for residents and the fact

that the residential and commercial components are physically located in different portions of the Project site.

b. Thresholds of Significance

(1) Construction Impacts

The Project would have a significant traffic and circulation impact relative to construction, if construction traffic or activities cause the following:

- Substantial delays and disruption of existing traffic flow, including emergency access.

(2) Operational Impacts

(a) Intersection Capacity

The Project would have a significant impact relative to local intersections if the following occurs:

- The increase in the V/C ratio that can be attributed to the Project is equal to or exceeds 0.020, and the intersection is projected to operate at LOS E or F (represented by a V/C ratio of 0.901 or greater) under future base plus Project conditions.

Under these standards, a project would not have a significant impact at an intersection, regardless of the V/C ratio increase, if the intersection is operating at LOS A, B, C or D under future plus Project traffic conditions. Conversely, if an intersection is or is projected to be operating at LOS E or F, the project would have significant impact if it caused an increase of more than 0.02 in the V/C ratio at any individual intersection.

(b) CMP Traffic Impacts

The CMP traffic impact analysis guidelines indicate that an impact on the regional transportation (freeway) system is considered to be significant under the following conditions:

- The proposed Project increases traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C increase of 0.02), causing LOS F (V/C > 1.00); or

- If the facility is already at LOS F, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by 2 percent of capacity (i.e., V/C increase of 0.02).

(c) Access

Project access impacts would be considered significant under either of the following conditions:

- A new site access intersection is projected to operate at LOS E or F during one or both of the peak hours; or

- An existing site access intersection is projected to operate at LOS E or F during one or both of the peak hours and the increase in the V/C ratio at an existing site access intersection that can be attributed to the Project is equal to or exceeds 0.020.

(d) Public Transportation

The determination of significance considers the number of additional passengers expected with the implementation of the Project and the available transit capacity. A significant impact would occur if projected transit riders exceed available or projected transit capacity.

(e) Parking

The Project would have a significant impact on parking if the project provides less parking than is needed to meet the Project's parking demand.

c. Analysis of Project Impacts

(1) Project Design Features

The primary ingress and egress location for Development District 3 would be provided at the intersection of Del Amo Boulevard and Stamps Drive, where the north leg of the intersection would provide for entry and exit of vehicular traffic. The proposed design for the north leg of this intersection is two inbound (northbound) and three (southbound) lanes. This configuration would allow one left-turn lane, one shared through/right-turn lane, and one right-turn lane on the southbound approach. A second access driveway would intersect westbound Del Amo Boulevard between the intersections of Del Amo Boulevard and Stamps Drive (on the east) and Del Amo Boulevard and Main Street (on the west). This access driveway would provide right-

turn-in/right-turn-out movements only. No access to Main Street would be provided from District 3.

Access points to Development Districts 1 and 2 include the intersections of Del Amo/Stamps Drive and Main Street/Lenardo Drive. At Del Amo Boulevard and Stamps Drive, the south leg of Stamps Drive would provide vehicular access to and from the Project site. The intersection would be developed with two inbound (southbound) and five outbound (northbound) lanes on Stamps Drive, south of Del Amo Boulevard. This configuration would provide for two left-turn lanes, one through lane, and two right-turn lanes on the northbound approach. In addition, Del Amo Boulevard would be improved to provide two left-turn lanes, two through lanes, and one right-turn lane on the westbound approach and two left-turn lanes, two through lanes, and two right-turn lanes on the eastbound approach. This intersection would be signalized as part of the Project.

The Main Street at Lenardo Drive access location for Development Districts 1 and 2 would be signalized . The proposed southbound configuration would consist of one left-turn lane and two through lanes. The westbound lane configuration would consist of one left-turn lane and one right-turn lane, while the northbound lane configuration would consist of two through lanes and a right-turn lane. Proposed lane configurations for all access and egress points are illustrated in Appendix A of the traffic technical report (see Appendix D of this Draft EIR).

(2) I-405 Interchange

In addition to the Project's on-site circulation system, the City is also pursuing improvements to the Avalon Boulevard/I-405 Freeway interchange as an off-site improvement for the Carson Marketplace project. This interchange would also improve general freeway access and circulation in the Project area. In summary, the ramp improvements would allow for full freeway movements at the Avalon Boulevard/I-405 Freeway interchange (i.e., southbound and northbound on- and off-ramps). Because of the critical nature of this improvement relative to area circulation patterns, the Project's traffic analysis incorporates the assumption that the ramp improvements would be implemented concurrently with the proposed Project. Even though the ramp improvements are an off-site improvement, a mitigation measure has been included in the Draft EIR to assure that the ramp improvements actually occur. Even though the ramp improvements would be implemented as a separate project, the potential impacts of those improvements are discussed in Section VI.C., which addresses the full range of impacts that could occur with the implementation of this particular, and critical, improvement. Interchange improvements include (1) the extension of Lenardo Drive to Avalon Boulevard; (2) realignment and reconfiguration of the I-405 southbound on/off-ramps that currently intersect with Avalon Boulevard; (3) a new I-405 southbound on-ramp to be the east leg to the new Avalon Boulevard/Lenardo Drive intersection, and (4) reconfiguration of the I-405 northbound off-ramp to allow left-turn movements to southbound Avalon Boulevard.

Specific improvements to allow access at this intersection to the Project site would include the following improvements:

- Lenardo Drive would be extended to intersect with Avalon Boulevard where the new I-405 southbound on-ramp is proposed as an east leg to the intersection. The following is the lane configuration proposed at this intersection:
  - Southbound approach: one dedicated through lane, a through and right-turn lane, and a free flow right-turn lane;
  - Northbound approach: two through lanes, and a right-turn lane for traffic onto the new I-405 southbound on-ramp; and
  - Eastbound approach: two left-turn lanes, a shared through/right turn lane, and a right turn lane.

- The existing I-405 southbound on/off-ramps are proposed to intersect Lenardo Drive as a north leg to this proposed new 'T' intersection. The following is the lane configuration proposed at this intersection:
  - Southbound approach: a left-turn lane, a shared left/right-turn lane, and a right turn lane;
  - Westbound approach: one dedicated through lane, a shared through/right-turn lane, and a right-turn lane; and
  - Eastbound approach: two left-turn lanes and two through lanes.

- A part of the proposed improvements to the Avalon Boulevard/I-405 interchange is to provide left-turn capability from the I-405 northbound off-ramp to southbound Avalon Boulevard. The following is the lane configuration proposed at this intersection:
  - Southbound approach: two through lanes, and a free-flow right-turn lane onto I-405 northbound on-ramp;
  - Westbound approach: two left-turn lanes and a free-flow right-turn lane; and
  - Northbound approach: two left-turn lanes and two through lanes.

(3) Project Impacts

(a) Construction Impacts

(i) Worker Trips

Project construction would generate traffic from construction worker travel, as well as the arrival and departure of trucks delivering construction materials to the site and the hauling of debris and exported soils generated by on-site demolition and excavation activities. Both the number of construction workers and trucks would vary throughout the construction process in order to maintain a reasonable schedule of completion. The number of on-site construction workers, based on specific construction activity underway (i.e., excavation, building erection, etc.), would range from approximately 15 to almost 300. The lower number of daily workers would be associated with the implementation of the approved RAPs, whereas the higher number of daily workers would be associated with the finishing phases, including installation of drywall, electrical systems, and similar activities.

In general, the majority of the construction workers are expected to arrive and depart the Project site during off-peak hours (i.e., arrive prior to 7:00 A.M. and depart between 3:00 to 4:00 P.M.) thereby avoiding travel during the A.M. and P.M. peak traffic periods. Consequently, the impact of construction worker traffic on peak-hour traffic in the vicinity of the Project site would be limited. Given the off-peak nature of construction worker traffic, a less than significant impact is anticipated with regard to the local roadway network as well as the freeway mainline and the freeway on/off-ramps.

(ii) Hauling

Off-site truck trips generated by construction activities would include haul trucks, delivery trucks, and trash trucks. While construction workers would arrive from many parts of the region, and thus different directions, haul trucks and delivery trucks would generally travel to the Project site via the I-405 freeway ramps at Avalon Boulevard (northbound travel) and Main Street (southbound travel). Under the approved RAP, construction would require approximately 150 truck trips per 10-hour day, and 1.5 years to import the 2,000,000 cubic yards of clay required for the impermeable clay cap. Under the proposed RAP design, no importation of clay materials would be required and hauling activities during any hourly period would not generate a significant traffic increase. With the exception of clay hauling, the number of truck trips is projected to range from one to six per day, depending on the construction phase. Depending upon the specific nature of the construction activity (e.g., demolition, excavation, finish construction, landscaping), it is assumed the majority of truck traffic would be distributed evenly across the workday. Approvals required by the City of Carson for implementation of the

proposed Project include a Truck Haul Route program which would prohibit, among other things, truck traffic on local residential streets.

Because of the haul route approval requirement, and since construction truck trips would occur primarily along short stretches of Avalon Boulevard and Main Street before entering the I-405 Freeway, traffic impacts from this particular type of construction activity source are concluded to be less than significant.

(iii) Emergency Access

Short-term construction activities, such as lane closures, sidewalk closures, and utility line construction, could have implications with regard to response times for emergency vehicles. Other implications of construction include reduced travel time due to flagging or stopping of traffic to accommodate trucks entering and exiting the Project site. The blockage of off-site streets is not anticipated to be of a magnitude that would impede emergency vehicle access. Thus, the Project's construction activities would constitute a less than significant impact with regard to emergency access. In addition, traffic management personnel (flag persons) would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. With implementation of the identified mitigation measures (i.e., a Construction Management Plan and coordination between the Project's construction managers and emergency services), the potential impact of Project construction on emergency access would be reduced to a less than significant level.

(iv) Pedestrian and Vehicle Access

During Project construction, sidewalk closures would occur on the north and south sides of Del Amo Boulevard along the Project site frontage. Since no businesses or residential uses are located along the Project site, the closure of the Del Amo Boulevard sidewalks would not impede any non-Project related vehicle traffic. However, if construction activities caused the concurrent closure of sidewalks on both the north and south sides of Del Amo Boulevard, the impact on through pedestrian access would be potentially significant.

(b) Operational Impacts

(i) Study Intersections

Cumulative Base Traffic (2010)

Cumulative base traffic at the 27 study intersections are based on trips generated by the identified related projects (see Section III.B of this Draft EIR) and on an ambient growth factor

of 1.0 percent per year to Year 2010. As shown in Table 5 of the Project's traffic study (see Appendix D of this Draft EIR), the identified related projects would generate approximately 4,419 A.M. and 6,879 P.M. peak hour trips. These projections do not factor in existing uses that will be removed, or the use of non-motorized travel modes (e.g., transit, walking). The distribution patterns of the cumulative trips are illustrated in Figure 5 in the traffic technical report (Draft EIR Appendix D).

Table 21 on page 243 summarizes the estimated Cumulative Base service levels in 2010. As shown in Table 21, under 2010 Cumulative Base conditions, 18 of the 24 study intersections would operate at an acceptable level of service, i.e., LOS D or better, during both the morning and afternoon peak hours. However, the following six intersections are projected to operate at LOS E or worse during one or both of the peak hours:

- Intersection No. 2: Figueroa Street & I-405 northbound off-ramp (unsignalized) would operate at LOS E during the A.M. peak hour;
- Intersection No. 6: Hamilton Avenue & Del Amo Boulevard (unsignalized) would operate at LOS F during the A.M. and P.M. peak hours;
- Intersection No. 7: Figueroa Street & Del Amo Boulevard would operate at LOS E during the P.M. peak hour;
- Intersection No. 11: Hamilton Avenue & I-110 southbound ramps (unsignalized) would operate at LOS F during the P.M. peak hour;
- Intersection No. 19: Avalon Boulevard & I-405 northbound ramps would operate at LOS F during the A.M. and P.M. peak hours; and
- Intersection No. 22: Vermont Avenue & Carson Street would operate at LOS E during the P.M. peak hour.

Cumulative Base Plus Project Traffic (2010)

Table 19 on page 231 illustrates the Project's estimated daily and peak hour trips. As shown on Table 19, the Project would generate an estimated 68,950 daily trips, including approximately 2,510 A.M. and 5,770 P.M. peak hour trips. The trips generated by the Project, in addition to the trips generated by the related projects and the one (1) percent ambient growth per year to 2010, constitute the Cumulative Base Plus Project conditions. The distribution patterns of Cumulative Base Plus Project volumes are illustrated in Figure 8 of the technical traffic report (see Draft EIR Appendix D). Cumulative Base Plus Project conditions are summarized in Table 21. As shown in Table 21, with the addition of Project trips to cumulative

Table 21

Intersection Level of Service Analysis Summary
Future (Year 2010) Conditions

Intersection	Time Period	Cumulative Base Conditions AM / PM Peak Hour V/C or Delay	LOS	Cumulative Plus Project Conditions AM / PM Peak Hour V/C or Delay	LOS	Project Increase in V/C	Significant Project Impact	Cumulative Plus Project Plus Mitigations AM / PM Peak Hour V/C	LOS	Project Increase in V/C	Significant Project Impact
1. Figueroa St & I-405 SB On-Ramp	**AM**	0.437	A	0.443	A	0.006	NO				
	PM	0.480	A	0.494	A	0.014	NO				
2. Figueroa St & I-405 NB Off-Ramp [1,3]	**AM**	40.3	E	44.5	E						
	PM	28.4	D	32.7	D						
	AM	0.560		0.566		0.006	NO				
	PM	0.510		0.525		0.015	NO				
3. Main St & I-405 SB On-Ramp	**AM**	0.496	A	0.522	A	0.026	NO				
	PM	0.686	B	0.738	C	0.052	NO				
4. Main St & I-405 NB Off-Ramp	**AM**	0.754	C	0.801	D	0.047	NO				
	PM	0.785	C	0.885	D	0.100	NO				
5. Vermont Av & Del Amo Bl	**AM**	0.625	B	0.729	C	0.104	NO	0.649	B	0.024	NO
	PM	0.775	C	0.998	E	0.223	YES	0.865	D	0.090	NO
6. Hamilton Av & Del Amo Bl [2,3]	**AM**	57.0	F	**	F		[4]				
	PM	**	F	**	F		[4]				
	AM	0.687		0.797		0.110	YES	0.626	B	-0.061	NO
	PM	0.944		1.194		0.250	YES	0.851	D	-0.093	NO
7. Figueroa St & Del Amo Bl	**AM**	0.722	C	0.938	E	0.216	YES	0.720	C	-0.002	NO
	PM	0.972	E	1.493	F	0.521	YES	0.962	E	-0.010	NO
8. Main St & Del Amo Bl	**AM**	0.732	C	0.891	D	0.159	NO	0.707	C	-0.025	NO
	PM	0.723	C	1.068	F	0.345	YES	0.876	D	0.153	NO
9. Stamps Dr & Del Amo Bl	**AM**	**Future Project**		0.773	C	N/a	n/a				
	PM	**Intersection**		0.893	D	N/a	n/a				
10. Avalon Bl & Del Amo Bl	**AM**	0.635	B	0.687	B	0.052	NO				
	PM	0.711	C	0.883	D	0.172	NO				
11. Hamilton Av & 110 SB Ramps [2,3]	**AM**	28.9	D	41.6	E		[4]				
	PM	**	F	**	F		[4]				
	AM	0.708		0.737		0.029	YES	0.674	B	-0.034	NO
	PM	0.877		0.973		0.096	YES	0.827	D	-0.050	NO

Table 21 (Continued)

Intersection Level of Service Analysis Summary
Future (Year 2010) Conditions

Intersection	Time Period	Cumulative Base Conditions AM / PM Peak Hour V/C or Delay	Cumulative Base Conditions AM / PM Peak Hour LOS	Cumulative Plus Project Conditions AM / PM Peak Hour V/C or Delay	Cumulative Plus Project Conditions AM / PM Peak Hour LOS	Project Increase in V/C	Significant Project Impact	Cumulative Plus Project Plus Mitigations AM / PM Peak Hour V/C	Cumulative Plus Project Plus Mitigations AM / PM Peak Hour LOS	Project Increase in V/C	Significant Project Impact
12. Figueroa St & 110 NB Ramps	**AM**	0.865	D	0.932	E	0.067	YES	0.821	D	-0.044	NO
	PM	0.865	D	1.247	F	0.382	YES	0.976	E	0.111	YES
13. Main St & Lenardo Dr	**AM**	**Future Project Intersection**		0.467	A	N/a	N/a				
	PM			0.601	B	N/a	N/a				
14. Hamilton Av & Torrance Bl	**AM**	0.687	B	0.705	C	0.018	NO				
	PM	0.680	B	0.724	C	0.044	NO				
15. Figueroa St & Torrance Bl	**AM**	0.809	D	0.863	D	0.054	NO	0.843	D	0.034	NO
	PM	0.799	C	0.929	E	0.130	YES	0.874	D	0.075	NO
16. Main St & Torrance Bl	**AM**	0.686	B	0.776	C	0.090	NO	0.765	C	0.079	NO
	PM	0.743	C	0.935	E	0.192	YES	0.900	D	0.157	NO
17. Lenardo Dr & I-405 SB Off-Ramp	**AM**	**Future Intersection**		0.746	C	N/a	N/a				
	PM			0.843	D	N/a	N/a				
18. Avalon Bl & I-405 SB Ramps	**AM**	0.826	D	0.847	D	0.021	NO				
	PM	0.833	D	0.897	D	0.064	NO				
19. Avalon Bl & I-405 NB Ramps	**AM**	1.054	F	0.988	E	-0.066	NO				
	PM	1.102	F	1.092	F	-0.010	NO				
20. Main St & 213th St	**AM**	0.809	D	0.863	D	0.054	NO				
	PM	0.723	C	0.851	D	0.128	NO				
21. Avalon Bl & 213th St	**AM**	0.600	A	0.632	B	0.032	NO				
	PM	0.753	C	0.303	D	0.077	NO				
22. Vermont Av & Carson St	**AM**	0.879	D	0.910	E	0.031	YES	0.777	C	-0.102	NO
	PM	0.963	E	1.028	F	0.065	YES	0.865	D	-0.098	NO
23. Figueroa St & Carson St	**AM**	0.740	C	0.756	C	0.016	NO	0.756	C	0.016	NO
	PM	0.876	D	0.908	E	0.032	**YES**	0.861	D	-0.015	NO
24. Main St & Carson St	**AM**	0.606	B	0.683	B	0.077	NO	0.630	B	0.024	NO
	PM	0.856	D	0.926	E	0.070	**YES**	0.842	D	-0.014	NO
25. Avalon Bl & Carson St	**AM**	0.830	D	0.875	D	0.045	NO	0.780	C	-0.050	NO
	PM	0.888	D	0.978	E	0.090	**YES**	0.872	D	-0.016	NO
[4]	**AM**							0.798	C	-0.032	NO

Table 21 (Continued)

Intersection Level of Service Analysis Summary
Future (Year 2010) Conditions

Intersection	Time Period	Cumulative Base Conditions		Cumulative Plus Project Conditions		Project Increase in V/C	Significant Project Impact	Cumulative Plus Project Plus Mitigations		Project Increase in V/C	Significant Project Impact
		AM / PM Peak Hour		AM / PM Peak Hour				AM / PM Peak Hour			
		V/C or Delay	LOS	V/C or Delay	LOS			V/C	LOS		
	PM							0.908	E	0.020	YES
26. I-405 SB Ramps & Carson St	**AM**	0.505	A	0.518	A	0.013	NO				
	PM	0.500	A	0.523	A	0.023	NO				
27. I-405 NB Ramps & Carson St	**AM**	0.661	B	0.681	B	0.020	NO				
	PM	0.618	B	0.652	B	0.034	NO				

NOTE: ICU Methodology used for signalized intersections.
2000 HCM Unsignalized Methodology used for unsignalized intersections.

[1] *Intersection controlled with stop signs on 2 approach directions.*

[2] *Intersection controlled with stop signs on all approach directions.*

[3] *The top rows show analysis using Highway Capacity Manual stop-controlled methodology, for the purpose of evaluating the operating condition of the intersection. Average intersection vehicular delay in seconds per vehicle is reported rather than V/C ratio. The bottom rows show analysis using the CMA methodology, for the purpose of application of City of Los Angeles significance criteria. V/C ratio is reported.*

[4] *The top rows in the "Plus Mitigations" columns at Avalon Bl/Carson St indicate results with full mitigation consisting of widening to provide right-turn lanes on all four approaches. The bottom rows indicate results with right-turn lanes on the northbound, southbound, and westbound approaches but not the eastbound approach.*

** *Volumes exceed the limits of the Highway Capacity Manual stop-controlled software. Average delay cannot be calculated. Indicates overloaded (LOS F) conditions.*

base conditions, 13 of the 27 study intersections would operate at an acceptable level of service, i.e., LOS D or better, during both the morning and afternoon peak hours. Thus, fourteen of the 27 study intersections would operate at LOS E or F during one or both peak hours. The following 14 intersections are projected to operate at LOS E or F during one or both peak hours:

- Intersection No. 2: Figueroa Street & I-405 northbound off-ramp (unsignalized) – LOS E during the A.M. peak hour;
- Intersection No.5: Vermont Avenue & Del Amo Boulevard – LOS E during the P.M. peak hour;
- Intersection No. 6: Hamilton Avenue & Del Amo Boulevard (unsignalized) – LOS F during the A.M. and P.M. peak hours;
- Intersection No. 7: Figueroa Street & Del Amo Boulevard – LOS E during the A.M. peak hour and LOS F during P.M. peak hour;
- Intersection No. 8: Main Street & Del Amo Boulevard – LOS F during the P.M. peak hour;
- Intersection No. 11: Hamilton Avenue & I-110 southbound ramps (unsignalized) – LOS E during the A.M. peak hour and LOS F during the P.M. peak hour;
- Intersection No. 12: Figueroa Street & I-110 northbound ramps – LOS E during the A.M. peak hour and LOS F during the P.M. peak hour;
- Intersection No. 15: Figueroa Street & Torrance Boulevard – LOS E during the P.M. peak hour;
- Intersection No. 16: Main Street & Torrance Boulevard – LOS E during the P.M. peak hour;
- Intersection No. 19: Avalon Boulevard & I-405 northbound ramps – LOS E during the A.M. peak hour and LOS F during the P.M. peak hour;
- Intersection No. 22: Vermont Avenue & Carson Street – LOS E during the A.M. peak hour and LOS F during the P.M. peak hour;
- Intersection No. 23: Figueroa Street & Carson Street – LOS E during the P.M. peak hour;
- Intersection No. 24: Main Street & Carson Street – LOS E during the P.M. peak hour; and

- Intersection No. 25: Avalon Boulevard & Carson Street – LOS E during the P.M. peak hour.

Under the significance threshold criteria of a 0.020 or greater increase in the V/C ratio at an intersection that is projected to operate at LOS E or worse, significant impacts would occur at 12 intersections under Cumulative Base Plus Project conditions. As shown in Table 21, the Project would result in these significant impacts:

- Intersection No. 5: Vermont Avenue & Del Amo Boulevard (P.M. peak hour);
- Intersection No. 6: Hamilton Avenue & Del Amo Boulevard (both A.M. and P.M. peak hours);
- Intersection No. 7: Figueroa Street & Del Amo Boulevard (both A.M. and P.M. peak hours);
- Intersection No. 8: Main Street & Del Amo Boulevard (P.M. peak hour);
- Intersection No. 11: Hamilton Avenue & I-110 southbound ramps (both A.M. and P.M. peak hours);
- Intersection No. 12: Figueroa Street & I-110 northbound ramps (both A.M. and P.M. peak hours);
- Intersection No. 15: Figueroa Street & Torrance Boulevard (P.M. peak hour;)
- Intersection No. 16: Main Street & Torrance Boulevard (P.M. peak hour);
- Intersection No. 22: Vermont Avenue & Carson Street (both A.M. and P.M. peak hours);
- Intersection No. 23: Figueroa Street & Carson Street (P.M. peak hour);
- Intersection No. 24: Main Street & Carson Street (P.M. peak hour); and
- Intersection No. 25: Avalon Boulevard & Carson Street (P.M. peak hour).

(ii) Freeways

Cumulative Base Traffic (2010)

Cumulative Base increases in traffic on the regional freeway system is projected to result in increases in the number of impacted freeway segments in 2010. Estimated future Cumulative Base traffic conditions are summarized in Table 22 on page 249. As shown in Table 22, the following segments of the freeways in the Project area operate at LOS E or F under 2010 Cumulative Base conditions:

- State Route 91 - All of this freeway's analyzed segments would operate at LOS E or F in the A.M. peak hour in the westbound direction.

- Interstate Route 110 - The freeway segment from Sepulveda Boulevard on the south to Redondo Beach Boulevard on the north would operate at LOS E or F during the A.M. peak hour in the northbound direction. The segment from Carson Street on the south to Redondo Beach Boulevard on the north would operate at LOS E or F during the P.M. peak hour in the southbound direction.

- Interstate Route 405 - Almost all of the analyzed freeway segments would operate at a LOS of E or F during the A.M. and P.M. peak hours in the northbound direction. In the southbound direction, the freeway segment from Long Beach Boulevard on the south to Avalon Boulevard on the north would operate at LOS E or F during the A.M. or P.M. or both peak hours.

- Interstate Route 710 – The freeway segment from Pacific Coast Highway on the south to the I-405 Interchange on the north would operate at LOS E or F during both the A.M. and P.M. peak hours in the southbound direction.

Cumulative Base Plus Project

As shown in Table 22 on page 249, with the addition of Project traffic, traffic on the analyzed CMP freeway segments would be increased by 2 percent of capacity, or greater, at three segments on the Harbor Freeway (I-110) and four segments on the San Diego Freeway (I-405). Freeway segments where the Project is forecasted to create a significant impact based on the CMP impact criteria are as follows:

- Interstate Route 110

  – Carson Street to Torrance Boulevard during the P.M. peak hour in the southbound direction;

Table 22
Freeway Mainline Level of Service Analysis

FREEWAY	SEGMENT	AM/PM	EXISTING CONDITIONS (YEAR 2005)						CUMULATIVE CONDITIONS (YEAR 2010)						PROJECT ONLY TRAFFIC		CUMULATIVE PLUS PROJECT (2035)						SIGNIFICANT IMPACT			
			North/Westbound			South/Eastbound			North/Westbound			South/Eastbound					North/Westbound			South/Eastbound			North/Westbound		South/Eastbound	
			Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	Volume [2]	V/C	LOS**	Volume [2]	V/C	LOS**	NB/WB	SB/EB	Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	Project V/C change	Significant Impact?	Project V/C change	Significant Impact?
SR-91	Between I-110 Interchange & Avalon Boulevard	AM	10,045	0.91	D	5,806	0.41	B	10,542	0.96	E	6,094	0.43	B	32	81	10,574	0.96	E	6,175	0.43	B	0.00	No	0.00	No
		PM	6,024	0.55	C	8,637	0.60	C	6,323	0.57	C	9,064	0.63	C	147	357	6,470	0.59	C	9,421	0.66	C	0.02	No	0.03	No
SR-91	Between Avalon Boulevard & Central Avenue	AM	10,150	0.92	D	5,867	0.53	B	10,653	0.97	E	6,158	0.56	C	120	296	10,773	0.98	E	6,454	0.59	C	0.01	No	0.03	No
		PM	6,088	0.55	C	8,728	0.79	D	6,389	0.58	C	9,160	0.83	D	119	283	6,508	0.59	C	9,443	0.86	D	0.01	No	0.03	No
SR-91	Between Central Avenue & Wilmington Avenue	AM	10,309	0.94	E	5,959	0.54	B	10,819	0.98	E	6,254	0.57	C	89	220	10,908	0.99	E	6,474	0.59	C	0.01	No	0.02	No
		PM	6,183	0.56	C	8,864	0.81	D	6,489	0.59	C	9,303	0.85	D	90	208	6,579	0.60	C	9,511	0.86	D	0.01	No	0.01	No
SR-91	Between Wilmington Avenue & Alameda Street Santa Fe Avenue	AM	10,679	0.97	E	6,173	0.56	C	11,208	1.02	F(0)	6,478	0.59	C	65	165	11,273	1.02	F(0)	6,643	0.60	C	0.00	No	0.01	No
		PM	6,405	0.58	C	9,183	0.83	D	6,722	0.61	C	9,637	0.88	D	71	155	6,793	0.62	C	9,792	0.89	D	0.01	No	0.01	No
SR-91 [3]	Between Alameda Street/Santa Fe Avenue & Long Beach Boulevard	AM	11,102	1.01	F(0)	6,417	0.65	C	11,652	1.06	F(0)	6,735	0.68	C	46	115	11,698	1.06	F(0)	6,850	0.69	C	0.00	No	0.01	No
		PM	6,658	0.61	C	9,546	0.96	E	6,988	0.64	C	10,019	1.01	F(0)	50	107	7,038	0.64	C	10,126	1.02	F(0)	0.00	No	0.01	No
I-110	Between Anaheim Street & Pacific Coast Highway	AM	5,693	0.58	C	3,888	0.39	B	5,975	0.60	C	4,080	0.41	B	27	76	6,002	0.61	C	4,156	0.42	B	0.01	No	0.01	No
		PM	3,785	0.38	B	5,344	0.54	B	3,972	0.40	B	5,608	0.57	C	32	71	4,004	0.40	B	5,679	0.57	C	0.00	No	0.00	No
I-110	Between Pacific Coast Highway & Sepulveda Boulevard	AM	7,523	0.76	C	5,138	0.58	C	7,896	0.80	D	5,392	0.61	C	39	102	7,935	0.80	D	5,494	0.62	C	0.00	No	0.01	No
		PM	5,002	0.51	B	7,062	0.80	D	5,249	0.53	B	7,412	0.84	D	41	97	5,290	0.53	B	7,509	0.85	D	0.00	No	0.01	No
I-110	Between Sepulveda Boulevard & Carson Street	AM	8,197	0.93	D	6,004	0.68	C	8,602	0.98	E	6,301	0.72	C	59	157	8,661	0.98	E	6,458	0.73	C	0.00	No	0.01	No
		PM	5,863	0.67	C	7,684	0.87	D	6,153	0.70	C	8,064	0.92	D	66	147	6,219	0.71	C	8,211	0.93	D	0.01	No	0.01	No
I-110	Between Carson Street & Torrance Boulevard	AM	9,526	1.08	F(0)	6,978	0.79	D	9,997	1.14	F(0)	7,323	0.83	D	96	254	10,093	1.15	F(0)	7,577	0.86	D	0.01	No	0.03	No
		PM	6,814	0.77	C	8,930	1.01	F(0)	7,151	0.81	D	9,372	1.07	F(0)	102	241	7,253	0.82	D	9,613	1.09	F(0)	0.01	No	0.02	***YES***
I-110	Between Torrance Boulevard & I-405 Interchange	AM	10,190	1.32	F(1)	7,464	0.85	D	10,695	1.39	F(2)	7,834	0.89	D	96	254	10,791	1.40	F(2)	8,088	0.92	D	0.01	No	0.03	No
		PM	7,289	0.95	E	9,553	1.09	F(0)	7,650	0.99	E	10,026	1.14	F(0)	102	241	7,752	1.01	F(0)	10,267	1.17	F(0)	0.02	***YES***	0.03	***YES***
I-110	Between I-405 Interchange & SR-91 Interchange	AM	12,051	1.00	E	8,828	1.00	E	12,648	1.05	F(0)	9,265	1.05	F(0)	236	527	12,884	1.06	F(0)	9,792	1.11	F(0)	0.01	No	0.06	***YES***
		PM	8,620	0.71	C	11,297	1.28	F(1)	9,047	0.75	C	11,856	1.35	F(1)	225	559	9,272	0.77	C	12,415	1.41	F(2)	0.02	No	0.06	***YES***
I-110	Between SR-91 Interchange & Redondo Beach Boulevard	AM	12,037	1.09	F(0)	8,817	0.73	C	12,561	1.14	F(0)	9,201	0.76	C	55	93	12,616	1.15	F(0)	9,294	0.77	C	0.01	No	0.01	No
		PM	8,942	0.81	D	11,719	0.97	E	9,332	0.85	D	12,230	1.01	F(0)	42	107	9,374	0.85	D	12,337	1.02	F(0)	0.00	No	0.01	No
I-110	Los Angeles - Redondo Beach Boulevard & Rosecrans Avenue	AM	9,377	0.85	D	10,518	0.87	D	9,841	0.89	D	11,039	0.91	D	39	64	9,880	0.90	D	11,103	0.92	D	0.01	No	0.01	No
		PM	8,620	0.78	D	10,014	0.83	D	9,047	0.82	D	10,509	0.87	D	28	73	9,075	0.83	D	10,582	0.87	D	0.01	No	0.00	No
I-110	Between Rosecrans Avenue & El Segundo Boulevard	AM	9,644	0.88	D	10,819	0.89	D	10,122	0.92	D	11,355	0.94	E	25	35	10,147	0.92	D	11,390	0.94	E	0.00	No	0.00	No
		PM	8,866	0.81	D	10,300	0.85	D	9,305	0.85	D	10,810	0.89	D	16	43	9,321	0.85	D	10,853	0.90	D	0.00	No	0.01	No
I-405	Between Long Beach Boulevard & I-710 Interchange	AM	12,229	1.11	F(0)	9,973	0.82	D	12,834	1.17	F(0)	10,467	0.87	D	50	127	12,884	1.17	F(0)	10,594	0.88	D	0.00	No	0.01	No
		PM	10,165	0.92	D	11,275	0.93	D	10,668	0.97	E	11,834	0.98	E	48	122	10,716	0.97	E	11,956	0.99	E	0.00	No	0.01	No
I-405 [3]	Between I-710 Interchange & Alameda Street	AM	12,271	1.01	F(0)	10,008	0.91	D	12,879	1.06	F(0)	10,503	0.95	E	70	187	12,949	1.07	F(0)	10,690	0.97	E	0.01	No	0.02	No
		PM	10,200	0.84	D	11,314	1.03	F(0)	10,705	0.88	D	11,874	1.08	F(0)	94	167	10,799	0.89	D	12,041	1.09	F(0)	0.01	No	0.01	No
I-405	Between Alameda Street & Wilmington Avenue	AM	11,950	0.99	E	10,029	0.91	D	12,528	1.04	F(0)	10,514	0.96	E	124	321	12,652	1.05	F(0)	10,835	0.99	E	0.01	No	0.03	No
		PM	9,418	0.78	D	11,299	1.03	F(0)	9,873	0.82	D	11,845	1.08	F(0)	137	302	10,010	0.83	D	12,147	1.10	F(0)	0.01	No	0.02	***YES***
I-405	Between Wilmington Avenue & Carson Street	AM	11,656	1.18	F(0)	9,782	0.99	E	12,184	1.23	F(0)	10,226	1.03	F(0)	154	406	12,338	1.25	F(0)	10,632	1.07	F(0)	0.02	***YES***	0.04	***YES***
		PM	9,185	0.93	D	11,020	1.11	F(0)	9,602	0.97	E	11,520	1.16	F(0)	164	387	9,766	0.99	E	11,907	1.20	F(0)	0.02	No	0.04	***YES***
I-405	Between Carson Street & Avalon Boulevard	AM	10,678	1.08	F(0)	8,961	0.91	D	11,196	1.13	F(0)	9,396	0.95	E	191	499	11,387	1.15	F(0)	9,895	1.00	E	0.02	***YES***	0.05	No
		PM	8,415	0.85	D	10,095	1.02	F(0)	8,823	0.89	D	10,585	1.07	F(0)	195	478	9,018	0.91	D	11,063	1.12	F(0)	0.02	No	0.05	***YES***
I-405 [3]	Between Avalon Boulevard & I-110	AM	11,255	1.14	F(0)	9,445	0.78	D	11,812	1.19	F(0)	9,913	0.82	D	191	499	12,003	1.21	F(0)	10,412	0.86	D	0.02	***YES***	0.04	No

Table 22 (Continued)

Freeway Mainline Level of Service Analysis

FREEWAY	SEGMENT	AM/PM	EXISTING CONDITIONS (YEAR 2005)						CUMULATIVE CONDITIONS (YEAR 2010)						PROJECT ONLY TRAFFIC		CUMULATIVE PLUS PROJECT (2035)						SIGNIFICANT IMPACT			
			North/Westbound			South/Eastbound			North/Westbound			South/Eastbound					North/Westbound			South/Eastbound			North/Westbound		South/Eastbound	
			Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	NB/WB	SB/EB	Volume[2]	V/C	LOS**	Volume[2]	V/C	LOS**	Project V/C change	Significant Impact?	Project V/C change	Significant Impact?
	Interchange	PM	8,869	0.90	D	10,641	0.88	D	9,308	0.94	E	11,168	0.92	D	195	499	9,503	0.96	E	11,667	0.96	E	0.02	No	0.04	No
I-405	Between I-110 Interchange & Vermont Avenue	AM	9,975	0.91	D	7,149	0.72	C	10,451	0.95	E	7,491	0.76	C	164	382	10,615	0.97	E	7,873	0.80	D	0.02	No	0.04	No
		PM	9,806	0.89	D	7,733	0.78	D	10,274	0.93	D	8,102	0.82	D	160	402	10,434	0.95	E	8,504	0.86	D	0.02	No	0.04	No
I-405	Between Vermont Avenue & Normandie Avenue	AM	9,906	0.75	C	7,100	0.72	C	10,396	0.79	D	7,451	0.75	C	141	310	10,537	0.80	D	7,761	0.78	D	0.01	No	0.03	No
		PM	9,738	0.74	C	7,679	0.78	D	9,642	0.73	C	7,603	0.77	C	130	330	9,772	0.74	C	7,933	0.80	D	0.01	No	0.03	No
I-405	Between Normandie Avenue & Western Avenue	AM	9,903	1.00	E	7,098	0.72	C	10,381	1.05	F(0)	7,440	0.75	C	112	236	10,493	1.06	F(0)	7,676	0.78	D	0.01	No	0.03	No
		PM	9,736	0.98	E	7,677	0.78	D	9,642	0.97	E	7,603	0.77	C	99	254	9,741	0.98	E	7,857	0.79	D	0.01	No	0.02	No
I-405	Between Western Avenue & Crenshaw Boulevard	AM	9,648	0.97	E	6,915	0.70	C	10,109	1.02	F(0)	7,246	0.73	C	88	180	10,197	1.03	F(0)	7,426	0.75	C	0.01	No	0.02	No
		PM	9,484	0.96	E	7,479	0.76	C	9,393	0.95	E	7,408	0.75	C	73	195	9,466	0.96	E	7,603	0.77	C	0.01	No	0.02	No
I-405	Between Crenshaw Boulevard & Redondo Beach Boulevard	AM	9,320	0.94	E	6,680	0.67	C	9,769	0.99	E	7,002	0.71	C	63	124	9,832	0.99	E	7,126	0.72	C	0.00	No	0.01	No
		PM	9,162	0.93	D	7,225	0.73	C	9,074	0.92	D	7,156	0.72	C	48	137	9,122	0.92	D	7,293	0.74	C	0.00	No	0.02	No
I-405	Between Redondo Beach Boulevard & Hawthorne Boulevard	AM	9,104	0.92	D	6,525	0.66	C	9,555	0.97	E	6,848	0.69	C	46	94	9,601	0.97	E	6,942	0.70	C	0.00	No	0.01	No
		PM	8,950	0.90	D	7,058	0.71	C	8,862	0.90	D	6,988	0.71	C	35	102	8,897	0.90	D	7,090	0.72	C	0.00	No	0.01	No
I-710	Between Pacific Coast Highway & Willow Street	AM	5,497	0.83	D	6,448	0.98	E	5,769	0.87	D	6,767	1.03	F(0)	13	30	5,782	0.88	D	6,797	1.03	F(0)	0.01	No	0.00	No
		PM	5,355	0.81	D	6,281	0.95	E	5,302	0.80	D	6,219	0.94	E	12	28	5,314	0.81	D	6,247	0.95	E	0.01	No	0.01	No
I-710 [3]	Between Willow Street & I-405 Interchange	AM	5,892	0.77	C	6,911	1.05	F(0)	6,184	0.80	D	7,254	1.10	F(0)	19	50	6,203	0.81	D	7,304	1.11	F(0)	0.01	No	0.01	No
		PM	5,740	0.75	C	6,733	1.02	F(0)	5,683	0.74	C	6,666	1.01	F(0)	20	49	5,703	0.74	C	6,715	1.02	F(0)	0.00	No	0.01	No
I-710	Between I-405 Interchange & Del Amo Boulevard	AM	6,395	0.65	C	7,501	0.85	D	6,712	0.68	C	7,873	0.89	D	31	76	6,743	0.68	C	7,949	0.90	D	0.00	No	0.01	No
		PM	6,230	0.63	C	7,307	0.83	D	6,168	0.62	C	7,235	0.82	D	28	75	6,196	0.63	C	7,310	0.83	D	0.01	No	0.01	No
I-710 [3]	Between Del Amo Boulevard & Long Beach Boulevard	AM	6,431	0.58	C	7,544	0.86	D	6,750	0.61	C	7,917	0.90	D	0	0	6,750	0.61	C	7,917	0.90	D	0.00	No	0.00	No
		PM	6,265	0.57	C	7,349	0.84	D	6,203	0.56	C	7,276	0.83	D	0	0	6,203	0.56	C	7,276	0.83	D	0.00	No	0.00	No
I-710	Between Long Beach Boulevard & SR-91 Interchange	AM	6,791	0.62	C	7,965	0.80	D	7,127	0.65	C	8,360	0.84	D	0	0	7,127	0.65	C	8,360	0.84	D	0.00	No	0.00	No
		PM	6,615	0.60	C	7,759	0.78	D	6,550	0.60	C	7,682	0.78	D	0	0	6,550	0.60	C	7,682	0.78	D	0.00	No	0.00	No
I-710	Between SR-91 Interchange & Alondra Boulevard	AM	7,832	0.65	C	9,187	0.76	C	8,220	0.68	C	9,642	0.80	D	28	75	8,248	0.68	C	9,717	0.80	D	0.00	No	0.00	No
		PM	7,630	0.63	C	8,949	0.74	C	7,554	0.62	C	8,861	0.73	C	31	76	7,585	0.63	C	8,937	0.74	C	0.01	No	0.01	No

* *A half-lane indicates an auxiliary lane or HOV lane in this section of freeway.*
** *F(0) through F(3) represent gradations of LOS F.*
[1] *Capacity of 2,200 vehicles per hour per lane assumed.*
[2] *A growth factor of 1% per year was applied to grow the data available from Caltrans 2004 Traffic Volumes on California State Highways for Existing (Year 2005) and Future (Year 2010) projections.*
[3] *CMP freeway monitoring stations.*

Source: Kaku Associates, October 2005

  - Torrance Boulevard to the I-405 Interchange during the P.M. peak hour for both northbound and southbound directions; and
  - I-405 Interchange to the SR-91 Interchange during both A.M. and P.M. peak hours in the southbound direction.

- Interstate Route 405

  - Alameda Street to Wilmington Avenue during the P.M. peak hour in the southbound direction;
  - Wilmington Avenue to Carson Street during the A.M. peak hour in the northbound direction and during both A.M. and P.M. peak hours in the southbound direction;
  - Carson Street to Avalon Boulevard during the A.M. peak hour in the northbound direction and during the P.M. peak hour in the southbound direction; and
  - Avalon Boulevard to the I-110 Interchange during the A.M. peak hour in the northbound direction.

(iii) Access

Access to the Project site would be provided via several new intersections and/or existing intersections. Intersection access points serving the Project site include Del Amo and Stamps Drive, Lenardo Drive and Main Street, and Lenardo Drive and the I-405 interchange. Projected service levels of the access locations serving the Project site are as follows:

- Del Amo Boulevard and Stamps Drive: This intersection is projected to operate at a volume/capacity (V/C) ratio of 0.773 and service level (LOS) C during the A.M. peak hour and at a V/C of 0.893 and LOS D during the P.M. peak hour.

- Lenardo Drive and Main Street: This intersection is projected to operate at a V/C ratio of 0.467 and LOS A during the A.M. peak hour and at a V/C of 0.601 and LOS B during the P.M. peak hour.

- Lenardo Drive and Avalon Boulevard/I-405 Southbound On-Ramp: This intersection, which would be part of the Avalon Boulevard/I-405 interchange improvements, is projected to operate at a V/C of 0.847 and a LOS D in the A.M. peak hour. During the P.M. peak hour, this intersection is projected to operate at a V/C of 0.897 and a LOS D.

- Lenardo Drive and I-405 Southbound On/Off-Ramps: This intersection, which would also be part of the Avalon Boulevard/I-405 interchange improvements, is projected to

operate at a V/C of 0.746 and LOS C in the A.M. peak hour. During the P.M. peak hour the intersection is projected to operate at a V/C of 0.843 and LOS D.

- Avalon Boulevard and I-405 Northbound Off-Ramp: This intersection, which would also be part of the Avalon Boulevard/I-405 interchange improvements, is projected to operate at a V/C 0.988 and LOS E in the A.M. peak hour. During the P.M. peak hour the intersection is projected operate at a V/C of 1.092 and LOS F. This represents an improvement over the projected baseline conditions, without the Project and the Avalon Boulevard/I-405 interchange improvements.

Project access impacts are considered significant if the primary site access intersections are projected to operate at an unacceptable LOS E or F during one or both of the peak hours, under Cumulative Plus Project conditions. Although the intersection of Avalon Boulevard and I-405 Northbound Ramps would operate at LOS F during the A.M. peak hour, this would not constitute a significant access impact since this is an existing intersection and the Project would not cause the V/C ratio at this location to be increased by 0.02 or more. Less than significant impacts would occur at the Stamps Drive and Del Amo Boulevard access point during the A.M. peak hour or at any of the other access points described above, during either the A.M. or P.M. peak hours.

(iv) Public Transportation

The estimated number of potential transit riders is based on a percentage of the Project's total person trips, which are calculated as 1.4 persons per vehicle trip. Since the Project's peak hour trips are approximately 2,508 vehicle trips in the A.M. peak hour and 5,772 vehicle trips in the P.M. peak hour, it is estimated that the peak hour person trips would be 3,511 in the A.M. peak hour and 8,081 in the P.M. peak hour. In accordance with CMP guidelines, where a site is located more than one-quarter mile boundary from existing services, approximately 3.5 percent of the project's person trips may use public transit to travel to and from the site. Based on CMP procedures for estimating transit ridership, the Project is forecasted to result in approximately 123 new transit trips during the A.M. peak hour and 282 new transit trips during the P.M. peak hour. The Project vicinity is served by 23 buses in the A.M. peak hour and by 24 buses in the P.M. peak hour. It is estimated that the Project could add, on an average, approximately five person trips per bus in the A.M. peak hour and 12 person trips per bus in the P.M. peak hour. Twelve persons per bus represents the equivalent of slightly more than 25 percent of the capacity of a typical 45-passenger bus. This level of increase would not be readily absorbed by existing transit services. Since projected transit riders would exceed available or projected transit capacity, it is concluded that Project-related impacts to the regional transit system could be significant.

The Project's additional transit demand may require the extension of existing public bus routes to the Project site; the provision of additional buses to increase the frequency and capacity of existing services on key routes serving the Project site; and the provision of additional transit stops in and adjacent to the Project site. All future expansions would be completed at the discretion of the City of Carson Transit Authority and the Metropolitan Transit Authority (MTA).

(v) Parking

The Project's estimated parking demand is based on the Urban Land Institute's (ULI) Shared Parking Model. The residential and commercial components of the Project are considered separately, since dedicated (non-shared) spaces would be provided for residents and since residential and commercial components are anticipated to be physically located in different portions of the Project site, although the potential does exist that proposed residences could be located above commercial uses (e.g., ground floor retail). As summarized in Table 23 on page 254, the shared parking model estimates a parking demand of approximately 7,578 parking spaces during the weekday peak hour and about 8,335 parking spaces during the weekend peak hour of the peak month of December for the proposed commercial uses. The ULI Shared Parking Model estimates a separate demand for approximately 2,788 spaces to serve the residential components of the Project, including 2,555 resident spaces and 233 guest spaces. Thus, the total peak parking demand including both the commercial and residential components is estimated to be 10,366 spaces on a weekday and 11,123 spaces on a weekend, during the peak month of December. The projected variation in peak parking demand for the different months of the year during a weekday and a weekend are illustrated in Appendix D of the technical traffic study, contained in Appendix D of this Draft EIR. Appendix D of the traffic study also includes the projected daily variation in the parking demand for the December peak month by hour throughout the day.

Based on the City's General Development Standards, summarized in Table 24 on page 256, it is estimated that 10,376 parking spaces would be required for the commercial component of the Project. With consideration of shared parking, peak demand, time-of-day, and seasonal factors from ULI research, a peak shared demand for approximately 8,335 spaces is projected at 2 P.M. on a weekend day during the peak month of December (2,041 spaces less than required under the General Development Standards).

Based on the City's General Development Standards, it is similarly estimated that 3,238 spaces would be required for the residential component of the Project, including both resident and guest spaces. Based on ULI demand factors, peak demand for the residential uses is estimated to be approximately 2,788 spaces (450 less than required under the General Development Standards). Thus, the provision of parking per the City's General Development

Table 23

Shared Parking Demand Summary - Carson Marketplace
Peak Month: December -- Peak Period: 2 P.M., Weekend

			Weekday					Weekend					Weekday			Weekend		
Land Use	Project Data		Base	Non-Driving	Captive	Project		Base	Non-Driving	Captive	Project		Peak Hr Adj	Peak Mo Adj	Estimated Parking	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand
	Quantity	Unit	Rate	Ratio	Ratio	Rate	Unit	Rate	Ratio	Ratio	Rate	Unit	1 PM	December	Demand	2 PM	December	
Super Regional Shopping Center (>600k)	1,500,000	sf GLA	3.20	1.00	1.00	3.20	/ksf GLA	3.60	1.00	1.00	3.60	/ksf GLA	1.00	1.00	4,800	1.00	1.00	5,400
Employee			0.80	0.95	1.00	0.76	/ksf GLA	0.90	0.95	1.00	0.86	/ksf GLA	0.90	1.00	1,140	0.95	1.00	1,283
Fine/Casual Dining Restaurant	66,125	sf GLA	15.25	1.00	0.90	13.73	/ksf GLA	17.00	1.00	0.90	15.30	/ksf GLA	1.00	1.00	680	0.90	1.00	455
Employee			2.75	0.80	1.00	2.20	/ksf GLA	3.00	0.80	1.00	2.40	/ksf GLA	0.64	1.00	131	0.80	1.00	119
Family Restaurant		sf GLA	9.00	1.00	1.00	9.00	/ksf GLA	12.75	1.00	1.00	12.75	/ksf GLA	1.00	1.00	0	1.00	1.00	0
Employee			1.50	1.00	1.00	1.50	/ksf GLA	2.25	1.00	1.00	2.25	/ksf GLA	1.00	1.00	0	1.00	1.00	0
Fast Food Restaurant	15,000	sf GLA	12.75	1.00	0.90	11.48	/ksf GLA	12.00	1.00	0.90	10.80	/ksf GLA	1.00	1.00	172	0.90	1.00	146
Employee			2.25	0.80	1.00	1.80	/ksf GLA	2.00	0.80	1.00	1.60	/ksf GLA	0.64	1.00	27	0.80	1.00	23
Nightclubs		sf GLA	15.25	1.00	1.00	15.25	/ksf GLA	17.50	1.00	1.00	17.50	/ksf GLA	1.00	0.23	0	1.00	0.23	0
Employee			1.25	1.00	1.00	1.25	/ksf GLA	1.00	1.00	1.00	1.00	/ksf GLA	1.00	1.00	0	1.00	1.00	0
Cineplex	4,500	seats	0.19	1.00	0.90	0.17	/seat	0.26	1.00	0.90	0.23	/seat	1.00	0.23	80	0.90	0.67	388
Employee			0.01	0.80	1.00	0.01	/seat	0.01	0.80	1.00	0.01	/seat	0.64	0.50	11	0.80	0.80	17
Health Club	35,000	sf GLA	6.60	1.00	1.00	6.60	/ksf GLA	5.50	1.00	1.00	5.50	/ksf GLA	1.00	0.90	146	1.00	0.90	43
Employee			0.40	1.00	1.00	0.40	/ksf GLA	0.25	1.00	1.00	0.25	/ksf GLA	1.00	1.00	11	1.00	1.00	5
Active Entertainment	69,000	sf GLA	4.20	1.00	0.90	3.78	/ksf GLA	6.50	1.00	0.90	5.85	/ksf GLA	1.00	0.67	175	0.90	0.67	271
Employee			0.40	0.80	1.00	0.32	/ksf GLA	0.50	0.80	1.00	0.40	/ksf GLA	0.64	0.80	18	0.80	0.80	22
Hotel-Business	300	rooms	1.00	1.00	1.00	1.00	/rooms	0.90	1.00	1.00	0.90	/rooms	1.00	0.67	111	1.00	0.67	109
Employee			0.25	1.00	1.00	0.25	/rooms	0.18	1.00	1.00	0.18	/rooms	1.00	1.00	76	1.00	1.00	54
Residential, Rental	400	units																
Reserved	1.50	Sp/Unit	1.50	1.00	1.00	1.50	/unit	1.50	1.00	1.00	1.50	/unit	1.00	1.00	600	1.00	1.00	600

Table 23 (Continued)

Shared Parking Demand Summary - Carson Marketplace
Peak Month: December -- Peak Period: 2 P.M., Weekend

			Weekday					Weekend					Weekday			Weekend		
Land Use	Project Data		Base Rate	Non-Driving Ratio	Captive Ratio	Project Rate	Unit	Base Rate	Non-Driving Ratio	Captive Ratio	Project Rate	Unit	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand	Peak Hr Adj	Peak Mo Adj	Estimated Parking Demand
	Quantity	Unit											1 PM	December		2 PM	December	
Guest	400	units	0.15	1.00	1.00	0.15	/unit	0.15	1.00	1.00	0.15	/unit	1.00	1.00	60	1.00	1.00	60
Residential, Owned	1,150	units																
Reserved	1.70	Sp/Unit	1.70	1.00	1.00	1.70	/unit	1.70	1.00	1.00	1.70	/unit	1.00	1.00	1,955	1.00	1.00	1,955
Guest	1,150	units	0.15	1.00	1.00	0.15	/unit	0.15	1.00	1.00	0.15	/unit	1.00	1.00	173	1.00	1.00	173

Commercial Customer	6,164	Commercial Customer	6,812
Commercial Employee	1,414	Commercial Employee	1,523
Commercial Total	7,578	Commercial Total	8,335
Resident Reserved	2,555	Resident Reserved	2,555
Guest Reserved	233	Guest Reserved	233
Residential Total	2,788	Residential Total	2,788
Grand Total	10,366	Grand Total	11,123

Table 24

City of Carson General Development Standards

Category	Land Uses	Size	Unit	Parking Rate	Total
CM[a]	Regional Commercial	1,370.000	KSF[c]	5/1,000 sq. ft. GLA	6,850
CM	Theater	4,500	Seats	1/3 Seats	1,500
CM	Hotel	300	Rooms	1.5/ Room	450
CM & MU-M[b]	Restaurants	81.125	KSF	5/1,000 sq. ft. GLA	406
MU-M	Neighborhood Commercial	130.000	KSF	5/1,000 sq. ft. GLA	650
MU-M	1-bedroom Apartment/Condominium	500	Dwelling Units	1.5/Unit	750
MU-M	2-bedroom Apartment/Condominium	1,050	Dwelling Units	2/Unit	2,100
	- Guest Spaces for Residential Units	1,550	Dwelling Units	1/4 Units	388
MU-M	Bowling Alley	25.000	KSF	5/1,000 sq. ft. GLA[d]	125
MU-M	Fitness Center	35.000	KSF	5/1,000 sq. ft. GLA	175
MU-M	Multi-Purpose Recreation Center	44.000	KSF	5/1,000 sq. ft. GLA	220
Commercial Total					10,376
Residential Total					3,238
Grand Total					**13,614**

[a] *CM = Commercial Marketplace*
[b] *MU-M = Mixed Use*
[c] *KSF = 1,000 Square Feet*
[d] *GLA = Gross Leasable Area*

Source: Kaku Associates, October 2005.

Standards would be more than sufficient to accommodate the Project's estimated peak parking demands. Since the Project would not provide less parking than is needed to meet the Project's parking demand, impacts relative to parking demand would be less than significant. The Specific Plan for the Project site contains provisions for the implementation of a shared parking program. The shared parking program may be approved by the City's Planning Manager if it can be demonstrated that the Project parking supply would be adequate to meet the Project's peak shared parking demand under the ULI shared parking model. Under this Specific Plan provision, the Applicant may request the approval of a shared parking plan, in lieu of the City's General Development Standards.

The ULI defines "shared parking" as parking space that can be used to serve two or more individual land uses without conflict or encroachment. According to the ULI, the opportunity to implement shared parking is the result of two conditions: (1) "Variations in the peak accumulation of parked vehicles as the result of different activity patterns of adjacent or nearby land uses (by hour, by day, by season);" and (2) "Relationships among land use activities that result in people's attraction to two or more land uses on a single auto trip to a given area or development." Most parking codes, such as the City's Development Standards, provide peak parking ratios for individual land uses. While this appropriately recognizes that separate land uses generate different parking demands on an individual basis, it does not reflect the fact that

the combined peak parking demand, when a mixture of land uses, such as the Project, shares the same parking supply, peak parking demand can be substantially less than the sum of the individual demands. For example, retail uses peak in the early- to mid-afternoon while restaurant uses peak in the lunchtime and/or evening hours (depending on the type of restaurant) and cinema uses peak in the evening hours.

If a shared parking plan is to be implemented at the Project site, it can only be approved if it demonstrates that it would be adequate to meet the Project's peak parking demand, even if the peak parking demand were less than the parking required under the City's General Development Standards. The procedures set forth in the Specific Plan provide that parking would never be less than the Project's peak demand. Since the implementation of the Specific Plan's shared parking procedures would assure that the Project's shared parking demand would not exceed provided parking, no significant parking impacts under a shared parking program would occur.

4. MITIGATION MEASURES

a. Construction

Mitigation Measure C-1: The Project shall submit a Construction Traffic Management Plan or Worksite Traffic Control Plan (WTCP) to the City and appropriate police and fire services prior to the start of any construction work phase, which includes Project scheduling and the location of any roadway closures, traffic detours, haul routes, protective devices, and warning signs, for the purpose of minimizing pedestrian and vehicular impediment and interference of emergency vehicles from Project construction activities.

Mitigation Measure C-2: During construction, at least one sidewalk on either the north or south side of Del Amo Boulevard shall remain open and accessible to pedestrian traffic.

b. Operation

(1) Intersection Mitigation Measures:

The Project consists of a number of different land uses that may be developed in phases. Since the Project may be implemented over a period of time, its related traffic growth and, thus, the intersection impacts would also occur over a period of time. Some impacts would occur at earlier stages of development, while others would occur at later stages. Thus, an intersection phasing program has been developed to ensure that the necessary improvements are implemented

when and where they are needed to achieve mitigation as development occurs. Table 25 on page 259 lists the impacted study intersections and depicts the point at which significant impacts would occur. As shown in Table 25, the study intersections are sorted according to the percentage of P.M. peak hour trip increase at which a significant impact would occur. The following is a detailed description of the mitigation measures proposed at each of the impacted study intersections.

Mitigation Measure C-3: Vermont Avenue and Del Amo Boulevard (Intersection No. 5):

- A second left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to include two left-turn lanes, a through lane, and a right-turn lane. The improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 51 to 60 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-4: Hamilton Avenue & Del Amo Boulevard (Intersection No. 6):

- The Applicant shall install a traffic signal at this location.
- A right-turn lane shall be added to northbound Hamilton Avenue. The northbound approach shall be improved to include a left-turn lane, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-5: Figueroa Street & Del Amo Boulevard (Intersection No. 7):

- A right-turn lane shall be added to southbound Figueroa Street. The southbound approach shall be improved to include one left-turn lane, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way
- A second westbound left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to include two left-turn lanes, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.

Table 25

Intersection Mitigation Phasing Schedule

Percentage of Total Trips Triggering Significant Impacts [a]	Significantly Impacted Intersection
1 to 10 Percent	Intersection No. 6: Hamilton Avenue & Del Amo Boulevard
	Intersection No. 7: Figueroa Street & Del Amo Boulevard
	Intersection No. 12: Figueroa Street & I-110 NB Ramps
11 to 20 Percent	No change
21 to 30 Percent	Intersection No. 11: Hamilton Avenue & I-110 NB Ramps
	Intersection No. 25: Avalon Boulevard & Carson Street
31 to 40 Percent	Intersection No. 22: Vermont Avenue & Carson Street
41 to 50 Percent	No change
51 to 60 Percent	Intersection No. 5: Vermont Avenue & Del Amo Boulevard
	Intersection No. 8: Main Street & Del Amo Boulevard
61 to 70 Percent	Intersection No. 24: Main Street & Carson Street
71 to 80 Percent	Intersection No. 15: Figueroa Street & Torrance Boulevard
	Intersection No. 23: Figueroa Street & Carson Street
81 to 90 Percent	Intersection No. 16: Main Street & Torrance Boulevard
91 to 100 Percent	No change

[a] *Mitigation measures are phased in relation to 10 percent increases in Project trips.*

Source: Kaku Associates, October 2005

- An eastbound through lane and a right-turn lane shall be added to eastbound Del Amo Boulevard. The eastbound approach shall be improved to include one left-turn lane, three through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-6: Main Street and Del Amo Boulevard (Intersection No. 8):

- Land shall be dedicated, as required, to add a second left-turn lane and a right-turn lane to southbound Main Street. The southbound approach shall be improved to provide two left-turn lanes, two through lanes and a right-turn lane.
- A second left-turn lane shall be added to westbound Del Amo Boulevard. The westbound approach shall be improved to provide two left-turn lanes, two through lanes and an optional through and a right-turn lane.
- Land shall be dedicated, as required, to add a second left-turn lane and a right-turn lane to northbound Main Street. The northbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.
- A second left-turn lane shall be added to eastbound Del Amo Boulevard. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and an optional through and a right-turn lane.
- This mitigation measure shall be implemented at the point of development in which the Project generates 51 to 60 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-7: Hamilton Avenue & I-110 Southbound Ramps (Intersection No. 11):

- The Applicant shall install a traffic signal at this location.
- The southbound approach shall be re-striped to provide for one left-turn lane and a shared left-turn/through lane. The improvement is feasible within the existing right-of way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 21 to 30 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-8: Figueroa Street & I-110 Northbound Ramps (Intersection No. 12):

- A second right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to provide two through lanes and two right-turn lanes.
- A right-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes and a right-turn lane. The improvements are feasible within the existing right-of-way.

- This mitigation measure shall be implemented at the point of development in which the Project generates 1 to 10 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-9: Figueroa Street & Torrance Boulevard (Intersection No. 15):

- A second southbound left-turn lane shall be added to southbound Figueroa Street. The southbound approach shall be improved to include two left-turn lanes, two through lanes, and a right-turn lane. This improvement is feasible within the existing right-of-way.
- This mitigation measure shall be implemented at the point of development in which the Project generates 71 to 80 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-10: Main Street & Torrance Boulevard (Intersection No. 16):

- The eastbound approach shall be re-striped to provide one left-turn lane and a shared through/right-turn lane.
- This mitigation measure shall be implemented at the point of development in which the Project generates 81 to 90 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-11: Vermont Avenue & Carson Street (Intersection No. 22):

- The westbound right-turn lane shall be re-striped to provide a shared through/right-turn lane. The westbound approach shall be improved to provide one left-turn lane, two through lanes, and a shared through/right-turn lane.
- The eastbound right-turn lane shall be re-striped to provide a shared through/right-turn lane. The eastbound approach shall be improved to provide one left-turn lane, two through lanes, and a shared through/ right-turn lane.
- This mitigation measure shall be implemented at the point of development in which the Project generates 31 to 40 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-12: Figueroa Street and Carson Street (Intersection No. 23):

- A right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.

- This mitigation measure shall be implemented at the point of development in which the Project generates 71 to 80 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-13: Main Street & Carson Street (Intersection No. 24):

- A second left-turn lane shall be added to the westbound approach. The westbound approach shall be improved to provide two left-turn lanes, two through lanes, and a shared through/right-turn lane
- A second left-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and a shared through/right-turn lane.
- This mitigation measure shall be implemented at the point of development in which the Project generates 61 to 70 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-14: Avalon Boulevard & Carson Street (Intersection No. 25):[32]

- A right-turn lane shall be added to the southbound approach. The southbound approach shall be improved to include one left-turn lane, three through lanes, and a right-turn lane.
- A right-turn lane shall be added to the westbound approach. The westbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane.
- A right-turn lane shall be added to the northbound approach. The northbound approach shall be improved to provide one left-turn lane, three through lanes, and a right-turn lane

[32] *Any future street widening improvements for the intersection of Avalon Boulevard and Carson Street are not feasible within the existing right-of-way and would require acquisition or dedication of right-of-way from adjacent parcels. The adjacent land uses include the Carson City Hall on the northeast corner of the intersection and commercial uses on the remaining three corners of the intersection. The necessary width can be obtained adjacent to City Hall on the north side of Carson Street through reduction of a portion of the existing landscaped area, allowing construction of the right-turn lane on the westbound Carson Street approach. Information from the City of Carson indicates that the parcels on the southeast and northwest corners may redevelop, at which point it may be possible to obtain the necessary right-of-way on the east side of Avalon Boulevard south of Carson Street and on the west side of Avalon Boulevard north of Carson Street, allowing construction of the right-turn lanes on the northbound and southbound Avalon Boulevard approaches. If the proposed right-turn lanes were provided on these three approaches but not on the eastbound Carson Street approach, it is estimated that the projected afternoon peak hour V/C would be reduced from 0.973 to 0.904. Although this would partially alleviate the Project impact, it would not fully mitigate the impact to a less than significant level.*

- A right-turn lane shall be added to the eastbound approach. The eastbound approach shall be improved to provide two left-turn lanes, two through lanes, and a right-turn lane

- This mitigation measure shall be implemented at the point of development in which the Project generates 21 to 30 percent of its total trips, in accordance with Table 25.

Mitigation Measure C-15: No Certificate of Occupancy shall be issued for commercial development in District 2, or for commercial development in Districts 1 and 3 that is greater than the amount of commercial development shown in the Applicant's Conceptual Plan (i.e., 150,000 square feet and 50,000 square feet, respectively), prior to the completion of the I-405 ramp improvements at Avalon Boulevard.

(2) I-405 and I-110 Freeways

No feasible mitigation measures are available to the Applicant to mitigate the Project's significant impacts on the I-110 and I-405 freeways.

(3) Site Access Mitigation Measures:

Site access impacts were determined to be insignificant so long as the main site access intersections are configured as described in Section 3.c.(1) Project Design Features. No mitigation measures are required.

(4) Public Transportation

Mitigation Measure C-16: In coordination with the City of Carson Transit Authority and the Metropolitan Transit Authority (Metro), the Applicant shall provide additional transit stops, including benches and shelters, in and adjacent to the Project site.

5. CUMULATIVE IMPACTS

a. Construction

(1) Worker Trips

The construction of 36 related projects is anticipated in the Project study area. These 36 related projects are dispersed throughout the study area and would draw upon a construction workforce from all parts of the Los Angeles region. In general, the majority of the construction workers are anticipated to arrive and depart the individual construction sites during off-peak hours (i.e., arrive prior to 7:00 A.M. and depart between 3:00 to 4:00 P.M.), thereby avoiding travel during the A.M. and P.M. peak traffic periods. Given the off-peak nature of construction worker traffic, impacts are concluded to be less than significant. As this is also the case with the proposed Project, cumulative impacts would also be less than significant.

(2) Hauling

Excavation and grading phases for the related projects would generate the highest number of haul truck trips at the related project sites. The haul truck routes for related projects would be approved by the City of Carson according to the location of the individual construction site and the ultimate destination. The City's established review process would take into consideration overlapping construction projects and would balance haul routes to minimize the impacts of cumulative hauling on any particular roadway. Since hauling associated with related projects would occur in accordance with City-approved haul routes, cumulative impacts associated with hauling are concluded to be less than significant.

(3) Emergency Access

Related projects that would be large enough to cause lane closures or detours may be required, as is the case with the proposed Project, to provide construction management plans to the City of Carson and, possibly, to police and fire services providers. However, since no related projects are sufficiently close to the Project site to create a cumulative impact on conjoining street segments, the cumulative effects of construction activities on emergency access would be less than significant.

b. Operation

(1) Intersection Service Levels

The cumulative traffic impacts associated with the 36 related projects and ambient growth have been considered for the purpose of assessing the Project's traffic impacts. Cumulative effects on intersection operations attributable to traffic from ambient growth and the identified related projects have been incorporated into the above analysis of Cumulative Base conditions. Under 2010 Cumulative Base conditions, as shown in Table 21 on page 243, 6 of the 29 study intersections are projected to operate at LOS E or worse during one or both of the peak hours: It is anticipated that related projects contributing to cumulative growth would be required on an individual basis to mitigate potentially significant traffic impacts to the extent possible. However, since no guarantee exists that mitigation measures would be implemented with the identified related projects, in conjunction with the significant Project impact after mitigation, it is concluded that cumulative traffic impact on intersection operations would be significant.

(2) Freeway Service Levels

Ambient growth in accordance with CMP guidelines has been considered in the evaluation of the Project's impact on regional freeways. Table 22 on page 249 demonstrates that cumulative impacts would occur on three segments of the Harbor Freeway (I-110) and five segments of the San Diego Freeway (I-405). No feasible mitigation measures are available to the Applicant or any individual project to mitigate the potentially significant impacts on these freeway segments to less than significant levels. Therefore, cumulative impacts on freeway service levels would be significant and unavoidable.

(3) Access

No related projects are adjacent to the Project site or share conjoining or adjacent access points. Therefore, no significant cumulative impacts relative to access would occur.

(4) Public Transit

The combined Project and related projects would generate a demand for public transportation that would exceed existing transit capacity. Therefore, a significant cumulative impact relative to public transit services would occur.

(5) Parking

Parking spaces provided by the Project and the related projects would be required to comply with the City's Development Standards. Since the City's Development Standards have been deemed adequate to serve parking demand associated with commercial and residential uses, parking provided by the Project and related projects would be adequate to serve demand. Therefore, cumulative impacts associated with parking supply would be less than significant.

6. SIGNIFICANCE AFTER MITIGATION

a. Construction

With the implementation of Mitigation Measures C-1 and C-2, which require the preparation of a Construction Management Plan or WTCP and the maintenance of an open sidewalk along one side of Del Amo Boulevard, potentially significant access impacts would be reduced to less than significant levels. Thus, after mitigation, no significant, unavoidable construction impacts would occur.

b. Operation

(1) Intersection Service Levels

Mitigation Measures C-3 through C-12 would incrementally reduce significant impacts at the 12 impacted study intersections, as summarized in Table 26 on page 267. As shown in Table 26, significant impacts at all 12 intersections would be reduced to less than significant levels, with the exception of the intersection of Figueroa Street & I-110 Northbound Ramps (Intersection No. 12) during the P.M. peak hour. Although mitigation measures would reduce the impact from a projected V/C level 1.247 and LOS F to a projected V/C of 0.976 and LOS E, the significant impact would not be reduced to a less than significant level and, as such, the Project would generate a significant and unavoidable impact at this study intersection.

Mitigation Measure C-13 assures that improvements to the Avalon Boulevard/I-405 interchange are implemented in coordination with commercial development within Districts 1 and 2. As a result, impacts with regard to the availability of the Avalon Bouleverad/I-405 interchange improvements would be less than significant.

Table 26

Intersection Service Levels After Mitigation

Intersection	Volume Capacity Ratio	Service Level	Peak Hour	Significant?
Intersection No. 5: Vermont Avenue and Del Amo Boulevard	0.865	D	P.M.	No
Intersection No. 6: Hamilton Avenue and Del Amo Boulevard	0.626	B	A.M.	No
	0.851	D	P.M.	No
Intersection No. 7: Figueroa Street and Del Amo Boulevard	0.720	C	A.M.	No
	0.962	E	P.M.	No
Intersection No. 8: Main Street and Del Amo Boulevard	0.876	D	P.M.	No
Intersection No. 11: Hamilton Avenue & I-110 Southbound Ramps	0.674	B	A.M.	No
	0.827	D	P.M.	No
Intersection No. 12: Figueroa Street & I-110 Northbound Ramps	0.821	D	A.M.	No
	0.976	E	P.M.	Yes
Intersection No. 15: Figueroa Street & Torrance Boulevard	0.874	D	P.M.	No
Intersection No. 16: Main Street & Torrance Boulevard	0.900	D	P.M.	No
Intersection No. 22: Vermont Avenue & Carson Street	0.777	C	A.M.	No
	0.865	D	P.M.	No
Intersection No. 23: Figueroa Street and Carson Street	0.861	D	P.M.	No
Intersection No. 24: Main Street & Carson Street	0.842	D	P.M.	No
Intersection No. 25: Avalon Boulevard & Carson Street	0.8728	D	P.M.	No

Source: Kaku & Associates, October 2005

(2) Freeway Service Levels

The Project's significant impact on three segments of the Harbor Freeway (I-110) and four segments of the San Diego Freeway (I-405) cannot be reduced to less than significant levels as no feasible mitigation measures are available to the Applicant or any individual project. Therefore, the Project's impact on freeway service levels would be significant and unavoidable.

(3) Access

Site access impacts were determined to be insignificant so long as the main site access intersections are configured as described in Section 3.c.(1) Project Design Features. Therefore, no significant, unavoidable impacts relative to site access would occur.

c. Public Transportation

During the P.M. peak hour, the Project is forecasted to generate approximately 282 transit riders or about 12 riders per bus on average, which represents 25 percent of the capacity of a 45-passenger bus. This increase is concluded to constitute a significant impact. Although service capacity could be addressed through the extension or expansion of existing bus services, such expansions could only occur at the discretion of the City of Carson Transit Authority or Metro. Although Mitigation Measure C-16 would partially reduce the impact on transit services, no feasible mitigation exists that would reduce the potentially significant impact to a less than significant level. Therefore, the impact of the Project on regional transit would be significant and unavoidable.

d. Parking

Application of the parking requirements set forth in the City of Carson General Development Standards would require the Project to provide approximately 13,614 parking spaces, including 10,376 spaces for the commercial component of the Project and 3,238 spaces for the Project's residential component (resident and guest spaces). Based on the ULI Shared Parking model, the total peak demand including both the commercial and residential components is estimated to be 10,366 spaces on a weekday and 11,123 spaces on a weekend during the peak month of December. Since the peak demand would not exceed the City's General Development Standards, and Project parking would be provided in accordance with these standards, no significant parking impacts would occur. Under the Specific Plan provision for shared parking, the Applicant may request the approval of a shared parking plan, in lieu of the City's General Development Standards. If a shared parking plan is to be implemented at the Project site, it can only be approved if it demonstrates that it would be adequate to meet the Project's peak parking demand, even if the peak parking demand were less than the parking required under the City's General Development Standards. The procedures set forth in the Specific Plan provide that parking would never be less than the Project's peak demand. Since the implementation of the Specific Plan's procedures would assure that the Project's shared parking demand would not exceed provided parking, no unavoidable or significant parking impacts under a shared parking program would occur.

IV. ENVIRONMENTAL IMPACT ANALYSIS
D. HAZARDS AND HAZARDOUS MATERIALS

1. INTRODUCTION

The analysis contained in this section addresses the potential hazards that may be present at the Project site due to the following: (1) the prior use of the 157-acre portion of the site that is located south of Del Amo Boulevard as a landfill, and (2) prior uses on the 11-acre portion of the Project site that is located north of Del Amo Boulevard. With regard to the 157-acre portion of the Project site, the analysis contained in this section focuses on the existing subsurface contamination in soil and groundwater that exists at the former landfill site.[33] Due to the size and complexity of the former landfill site, DTSC divided the landfill site vertically into two principal operable units.[34] Remedial Action Plans (RAPs) have been approved by the California Department of Toxic Substances Control (DTSC) for the Upper and Lower Operable Units. Copies of the approved RAPs are provided in Appendix E of this EIR. Environmental review was conducted by DTSC as part of the approval process for each of the RAPs. As such, this EIR will not provide an analysis of the RAPs but will provide information regarding the RAPs to place the Project in a context of its existing regulatory approvals. In addition, this section summarizes the proposed design refinements for the remediation activities as described in a report entitled Preliminary Remedial Design Refinements prepared by Tetra Tech, Inc. With regard to the 11-acre portion of the Project site to the north of Del Amo Boulevard, this section is based on a draft Phase I and a preliminary Phase II investigation that was prepared for this portion of the site.

In addition, operation of the Project would involve the limited use and storage of hazardous materials associated with residential and commercial uses, such as cleaning solvents and pesticides. As concluded in the Initial Study that is presented in Appendix A of this Draft EIR, the use and storage of such materials would occur in compliance with applicable standards and regulations. Therefore, the use and storage of these materials would not pose significant hazards to the public or the environment through the transport, use, or disposal of hazardous

[33] *Impacts to surface water quality are addressed in Section IV.F, Surface Water Quality.*

[34] *Federal regulations at 40 CFR 300.5 define an operable unit as "…a discrete action that comprises an incremental step toward comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of release, or pathway of exposure. The cleanup of the site can be divided into a number of operable units, depending on the complexity of the problems associated with the site. Operable units may address geographical portions of a site, specific site problems, or initial phases of an action, or may consist of any set of actions performed over time or any actions that are concurrent but located in different parts of a site."*

materials. Based on this conclusion, no further analysis of this aspect of project construction and operations is needed.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) State

(a) California Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) has authority under the Hazardous Substance Account Act (Health & Safety Code Section 25300 et seq.) and the Hazardous Waste Control Act (Health & Safety Code Section 25100 et seq.) to require responsible parties to remediate releases of hazardous substances and hazardous waste. When exercising such authority, DTSC is required to ensure that a selected remedy complies with all state and federal applicable or relevant and appropriate requirements (ARARs). In other words, DTSC is required to take into account statutory and regulatory requirements of its sister agencies, including water quality requirements applicable under the federal Clean Water Act and the California Water Code. The remedial action plans approved by DTSC for this site therefore address contamination in both soil and groundwater and impose requirements for both media.

Pursuant to Health and Safety Code, Section 25260 et seq. (Assembly Bill 2061), the Site Designation Committee has designated DTSC as the lead administering agency for the 157-acre former landfill located on Development Districts 1 and 2. As the lead administering agency, DTSC's responsibilities include administering all state and local laws that govern the site cleanup, determining the adequacy and extent of cleanup, issuance of necessary authorizations and permits, and following a determination that an approved remedy has been accomplished, issuance of a certificate of completion. A key part of the lead administering agency's role is coordinating input from other agencies that have jurisdiction over cleanup activities at the site, streamlining the permitting and compliance requirements and eliminating regulatory duplication and overlap. DTSC may form a working group to facilitate this process.

(b) California Division of Oil and Gas and Geothermal Resources (DOGGR)

Section 3200, et. seq. of the Public Resources Code regulates the permitting, establishment, completion, and abandonment/reabandonment of gas and oil wells. DOGGR is the state agency with primary responsibility for the enforcement of these regulations and is the state agency responsible for conducting construction site plan review for development proposed

in proximity to gas or oil wells. Local jurisdictions require completion of a construction site plan review by DOGGR to confirm the location and condition of wells (i.e., tested for leaks, evaluation as to proper abandonment, etc.) prior to issuance of grading or building permits for such development. In connection with its review, DOGGR may require reabandonment of previously abandoned wells.

(2) Regional

(a) South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) has jurisdiction over the air quality in the South Coast Air Basin (Basin), an area of approximately 10,743 square miles. The Basin includes all of Los Angeles County except for the Antelope Valley, all of Orange County, the nondesert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. As the Project site is located within the jurisdictional area of the SCAQMD, the Project would need to comply with applicable SCAQMD regulations. Specifically, SCAQMD Rule 1150 provides regulations for the excavation of landfill sites. Excavation is defined as any activity which exposes buried waste to the atmosphere. Further, SCAQMD Rule 1150.1, Control of Gaseous Emissions from Municipal Solid Waste Landfills, applies to active and inactive landfills. Inactive landfills, for which it is determined that a gas collection system is required, must meet the active landfill requirements for such a system. A Permit to Control or Permit to Operate would be required for the gas collection system.

(3) Los Angeles County

The California Integrated Waste Management Board (CIWMB) regulates landfills under Title 27 of the California Code of Regulations (Title 27). The CIWMB has delegated its authority under Title 27 to the Los Angeles County Department of Health Services as the Local Enforcement Agency (LEA) for the subject landfill. Section 21190 of Title 27 applies to development projects within 1,000 feet of a landfill, as well as development on top of landfill waste. The developer must demonstrate that the proposed development will not pose a threat to public health and safety and the environment. Section 21190 of Title 27 also requires that construction maintain the integrity of the landfill's final cover, drainage and erosion control systems, and gas monitoring and control systems. Subsection (e) of Section 21190 requires a number of structural improvements for development on top of landfilled areas during the postclosure period. These requirements include the following: automatic methane gas sensors; prohibition of enclosed basement construction; construction so as to mitigate the effects of gas accumulation and differential settlement; and periodic methane gas monitoring inside all buildings. Utility connections must be designed with flexible connections and utility collars and must not be installed in or below any low permeability layer of final cover. In addition, Title 27

requires that pilings not be installed in or through any bottom liner, unless approved by the Regional Water Quality Control Board (RWQCB).

In addition, the Los Angeles County Uniform Building Code (LAC-UBC), Section 110.3, requires that a permit shall not be issued for a building or structure located within 1,000 feet of landfills containing rubbish or other decomposable material unless the fill is isolated by a natural or artificial protective system or unless designed according to recommendations contained in a report prepared by a licensed engineer. The LAC-UBC also requires that protection be provided to prevent damage to the structure, floors, underground piping and utilities due to uneven settlement of the materials deposited within the landfill. In addition, Section 110.4 of the LAC-UBC addresses methane gas hazards. This section requires that buildings or structures adjacent to or within 25 feet of active or abandoned oil or gas wells must be designed according to recommendations of a licensed civil engineer and approved by the City's Building Official.

(4) City of Carson

(a) General Plan Safety Element

The City of Carson has an adopted the Safety Element as a component of the City's General Plan. The guiding principle of the Safety Element is to promote safety throughout the community in order to enhance the livability, quality of life, business environment, and positive image of the community as well as to reduce the effects of crime and environmental hazards. The Safety Element identifies and evaluates potential hazards, including natural and man-made, that exist within the City and aims to reduce the potential risk that could result from such hazards. The Safety Element contains goals, policies and implementation actions to reduce the impacts of these hazards.

The Safety Element indicates that there are 14 inactive sanitary landfills and no active landfills within the City. The Safety Element states that any future development of these sites should be carefully studied and a landfill gas control plan and monitoring system may be required for safety. The goals of the Safety Element are divided into four issue areas, which include natural disasters; handling and exposure of hazardous materials; urban fires; and crime. The Safety Element does not contain policies relevant to the implementation of the Project's RAPs.

(b) Municipal Code

The City's zoning map, a component of the Carson Municipal Code (CMC), has currently designated the Project site with an Organic Refuse Landfill (ORL) overlay designation, which provides for the public health, safety and general welfare by regulating uses of organic

refuse landfill sites and ensuring that proper mitigation measures are taken to eliminate or minimize hazards to persons and property and environmental risks associated with such sites including, but not limited to, toxicity, fire, explosion and subsidence. If the Project is approved, then the zoning designation for the Project site will change to Marketplace Specific Plan and the ORL overlay designation will no longer be applicable as the Marketplace Specific Plan will control.

b. Existing Physical Environment

(1) Development Districts 1 and 2 (Former Landfill Site)

The 157-acre portion of the Project site that is located south of Del Amo Boulevard was used as a Class II landfill under an Industrial Waste Disposal Permit issued to Cal Compact, Inc. by the County of Los Angeles in 1959. Landfilling on the 157-acre site began in 1959, shortly after the banning of incinerators in Los Angeles County in 1957. The Cal Compact Landfill was permitted to receive municipal solid waste (MSW) and liquid waste under permit conditions set forth in the April 1959 Prescribing Requirements issued by the State of California Regional Water Pollution Control Board. The landfill site also operated under Industrial Waste Permit No. 2145 issued by the Industrial Waste Division of the Los Angeles County Engineer's Office in July 1959.

The permit allowed the landfill to accept ordinary household and commercial waste and/or rubbish, garbage, other decomposable organic waste, and scrap metal. Specifically, MSW that was deposited at the Cal Compact Landfill included the following:

- Metals and metal products except magnesium and its alloys and salts;
- Paper and paper products including roofing and tarpaper;
- Cloth and clothing;
- Wood and wood products;
- Lawn clippings, sod, and shrubbery;
- Small dead animals;
- Unquenched ashes mixed with waste;
- Manufactured rubber products;
- Solid plastic products;
- Dried mud cake from oil fields;

- Paint sludge received from water circulated paint spray booths not transported in vacuum trucks;
- Occasional loads of dry paint in drums;
- Street sweepings;
- Inert solid fill including natural earth, rock, sand and gravel, paving fragments, concrete, brick, plaster and plaster products, steel mill slag, glass and asbestos fiber and products therefrom;
- Hog manure and hog pen waste; and
- Residue and grit from sewer cleaning and sewage treatment processes, provided that (a) this material be covered immediately, (b) such steps as are necessary be taken at all times in order to prevent fly breeding or odor nuisance.

The Industrial Waste Permit allowed the following liquid wastes to be accepted at the landfill:

- Paint sludge recovered from water circulated in paint spray booths;
- Acetylene sludge;
- Sludge from automobile wash racks and steam cleaning plants;
- Sludge derived from the softening of water by the lime soda process;
- Mud and water from laundries;
- Liquid latex wastes;
- Ceramic, pottery, glaze wastes;
- Lime and soda water;
- Water containing not more than 0.5% molasses;
- Water containing lampblack and incidental amounts of mud resulting from floor washing;
- Tank bottoms;
- Liquid waste from petroleum processes; and
- Occasional loads of printers' ink, containing small amounts of solvent.

The landfill consisted of four waste cells, which were all excavated and filled. The waste cells covered the entire 157-acre landfill site with the exception of the haul roads and the perimeter slopes, which remain on undisturbed native soil. The landfill operated by cut and

cover method, in which the waste was deposited and regularly covered with dirt and watered to assure adequate compaction. Disposal of solid waste occurred at the landfill from April 1959 to December 1964 with an approximate closing date of February 1965.

During the life of the landfill, approximately 6 million cubic yards (cy) of solid municipal waste and 2.6 million barrels of industrial liquid waste were received at the landfill. Refuse thickness varies over the site and ranges between 1.75 to 64.75 feet in depth, with an average of 40 feet in depth.[35] The estimated volume of solid waste in the landfill is 6,260,000 cubic yards.[36] Recent estimates indicate that the landfill received 550,936 cubic yards of liquid industrial waste.[37] Current soil cover over the landfill materials across the site ranges from three to 30 feet in thickness.

Investigations conducted on the site beginning in 1978 identified and confirmed the presence of hazardous substances on the site that had entered into the environment. The investigations conducted in 1978 indicated that despite a cap of a minimum of three feet of soil covering the landfill material, landfill gas emissions of methane and carbon dioxide were detected escaping from cracks in the cap. Investigations conducted in 1981 indicated concentrations of metals in the groundwater to be greater than state drinking water standards and concentrations of heavy metals, polynuclear aromatics hydrocarbons (PNAs) and other organics in the soils to be above background levels. In addition, notable concentrations of chlorinated and other volatile aromatic hydrocarbons such as toluene and ethylbenzene were found in vapor wells.

Based on the potential threat to people and the environment from contaminants and substances that are defined as hazardous substances in the Health and Safety Code, the State Department of Health Services issued Remedial Action Order (RAO) No. HSA87/88-040 on March 18, 1988 to 14 potentially responsible parties (PRPs). The RAO required the submittal of a workplan to identify the hazardous substances present and to determine the extent of cleanup required.

In 1995, the DTSC entered into a Consent Order and RAO with the former landfill owner (BKK), successor to Cal Compact Inc., for preparation of a RAP for the Upper Operable Unit (Upper OU). In 1995, the DTSC also entered into a Consent Decree (CD) with the current site owners, L.A. Metro Mall, LLC and Commercial Realty Projects, Inc., for implementation of the

[35] *Plans and Specifications for Landfill Gas Control/Treatment Systems, Part * - Remedial Design Overview, SCS Engineers, March 1996.*

[36] *The Los Angeles County Engineer had calculated that the landfill had a capacity of 6,298,500 cubic yards.*

[37] *Summary of Environmental Conditions, Remediation Plan, and Geotechnical Assessments, Allwest Remediation, Inc., April 8, 2003.*

Upper OU RAP. In addition and as a result of contamination on and adjacent to the landfill, the 157-acre portion of the Project site is listed by the DTSC on the Hazardous Waste and Substances Site (Cortese) list.

Due to the size and complexity of the former landfill site, DTSC divided the landfill site vertically into two principal operable units. The Upper OU was defined to include the site soils, the waste zone above and within the Bellflower Aquitard, and the Bellflower Aquitard, which was described to extend to a depth of approximately 220 feet below the landfill site. The Lower Operable Unit (Lower OU) was defined as the deeper hydrostratigraphic units beginning with the Gage aquifer and extending down to the Silverado aquifer, and all other areas impacted by the geographic extent of any hazardous substances which may have migrated or may migrate from the aforementioned areas or from the Upper OU. The operable units were also established to prioritize the remedial response to the areas of known impacts (Upper OU) versus potential impacts (Lower OU).

Remedial Investigations (RIs) were undertaken and characterized the hazardous substances on the site. The investigations analyzed samples taken from the following areas: (1) surface and run-off water; (2) soil cover; (3) waste zones; (4) groundwater, and (5) air. The characterization documented the presence of landfill gases (methane and carbon dioxide) as well as volatile organic compounds (VOCs) and metals in the Upper OU. As shown in Table 27, on page 277 the primary contaminants in the soil include metals (antimony and beryllium) and organics (benzo(a)anthracene, benzo(b)fluoranthene, alpha-BHC, and Bis(2-ethylhexyl)phthalate). The primary contaminants in the groundwater are dissolved chlorinated and aromatic VOCs, primarily trichlorethene (TCE), 1,2-dichlorethane (1,2-DCA), vinyl chloride and benzene, toluene, ethylbenzene, and xylenes (BTEX). These VOCs were detected in localized areas within the Bellflower Aquitard at concentrations above their respective drinking water Maximum Concentration Levels (MCLs). The primary contaminants in the air are benzene, tetrachloroethylene (PCE), toluene, trichloroethylene, and xylenes. The primary contaminants may be revised based on additional site data obtained.

As part of the development of the RAP, a Baseline Risk Assessment (BRA) was conducted to identify potential health risks to persons both on and off site as well as construction workers due to exposure to site-related chemicals under hypothetical future uses of the former landfill site. The BRA was prepared under the direction of DTSC and in accordance with DTSC and U.S. EPA guidelines and the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). In accordance with U.S. EPA guidelines and specific direction from DTSC, three hypothetical exposure scenarios were evaluated. The three scenarios assumed that no remedial actions or controls would be in place. In other words, the BRA assumed that development occurred without implementation of the landfill cap, landfill gas system, building protection or groundwater system.

Table 27

Summary of Primary Contaminants in Upper OU

Chemical	Concentration Range (parts per million [ppm])		
	Soil (cover and waste zone)	Groundwater	Air
Antimony	1.8 – 4.8		
Beryllium	<0.05 – 0.1		
Benzo(a)anthracene	0.80		
benzo(b)fluoranthene	0.72		
alpha-BHC	0.044		
Bis(2-ethylhexyl)phthalate)	0.33 – 7.5		
trichlorethene (TCE)		<0.001 – 0.038	0.0075
1,2-dichlorethane (1,2-DCA),		<0.001 – 0.072	
vinyl chloride			0.0809
benzene		<0.001 – 7.5	0.0014 – 0.0573
toluene	0.006 - 12	<0.001 – 20.4	0.0044 – 0.0177
ethylbenzene		<0.001 – 12.6	
xylenes		<0.001 – 12.4	0.0033 – 0.957
tetrachloroethylene (PCE)			0.002 – 0.0579

Source: Brown & Root Environmental, 1995.

In addition, the BRA was conducted using conservative assumptions with regard to chemical concentrations, chemical fate/transport, and human exposure. For example, as indicated previously, the soil cover thickness ranges from a minimum of three feet up to 30 feet. The BRA assumes that the soil cover is only three feet thick over the entire landfill, which influences the amount of vapor migrating to the surface. In addition, the analysis assumed unrestricted contact with the soil, waste and groundwater.

The BRA presents age-specific increased cancer risks (carcinogens) and noncancer hazard indices (noncarcinogens) as well as the predominant pathways of exposure for each scenario. The three scenarios analyzed were: (1) Long-Term Residential Use, (2) Long-Term Commercial/Industrial Use, and (3) 2-Year Construction/Excavation Activities.

The Long-Term Residential Use scenario assumed a residential housing community was developed on the landfill with no RAP-required remedial measures and that unrestricted disruption of the current soil cover by residents would occur. The analysis assumed that excavation of swimming pools, gardening, inhalation of vapors, drinking groundwater and other associated exposures would occur. The scenario also analyzed the risks to children and adults living off-site within neighboring residential communities. For hypothetical on-site residents, the specific exposure pathways evaluated included:

- Ingestion of groundwater;
- Dermal and inhalation exposure to groundwater (bathing and showering);
- Inhalation of vapors (indoors and outdoors) and suspended soil particulates (outdoors);
- Dermal absorption from soils;
- Incidental ingestion of soils; and
- Ingestion of garden vegetables (which was accounted for by a 50% increase in soil ingestion rates).

Exposure pathways for hypothetical off-site residents included inhalation of vapors and soil particulates. For both on-site and off-site residents, exposure was assumed to occur 24 hours/day, 365 days/year for 24 years (adult only) or 30 years (child aged 0 to 6 years + adult).

The Long-Term Commercial/Industrial Use scenario assumed commercial or industrial uses were developed on the landfill site. The analysis assessed potential risk to workers in the commercial or industrial uses as well as the potential periodic on-site visitor (adults and juveniles aged 6 to 12 years). The scenario assumed no disruption of the current soil cover. For hypothetical on-site workers and visitors, the specific exposure pathways evaluated included:

- Inhalation of vapors (outdoors) and suspended soil particulates (outdoors);
- Dermal absorption from soils; and
- Incidental ingestion of soils.

Workers were assumed to be on-site 8 hours/day, 250 days/year for 25 years. Juvenile and adult visitors were assumed to be on-site for 1 hour/day, 156 days/year for 30 years (6 years as a juvenile and 24 years as an adult).

The 2-Year Construction/Excavation Activities scenario evaluated the risks to on-site workers and off-site residents during development, construction and excavation activities on the landfill over a period of two years. This scenario assumed that the current soil cover was completely removed for a period of two years. Workers were assumed to be on-site 8 hours/day, 250 days/year for 2 years. The specific exposure pathways evaluated included:

- Inhalation of vapors (outdoors) and suspended soil particulates (outdoors);

- Dermal absorption from soils; and
- Incidental ingestion of soils.

Exposure pathways for hypothetical off-site residents included inhalation of vapors and soil particulates. For off-site residents (child and adult), exposure was assumed to occur 24 hours/day, 365 days/year for 2 years.

For each of the three scenarios evaluated, two exposure point concentrations (EPCs) were calculated for soil and groundwater, one EPC defined as the mean and a second EPC defined as an upper-bound value. For data that fit a normal distribution, the 95 percent upper confidence limit (UCL) on the mean concentration was used as an estimate of the upper-bound EPC. For data that did not fit a normal distribution, the mean of the log transformed data was used as an estimate of the upper-bound EPC. In cases where the calculated EPC exceeded the maximum concentration, the maximum concentration was used to represent the EPC.

The Jury et al. (1983) behavior assessment model was used to estimate the flux of VOCs from soil and groundwater to ambient air. A standard box model was used to estimate ambient air VOC concentrations from these flux data results. Migration of VOCs was also modeled from soil and groundwater to hypothetical residential buildings using a standard box model. The Farmer et al. (1978, 1980) model was used to estimate the flux of methane from soil gas wells; this flux rate was then used to model methane concentrations in crawlspaces of hypothetical residential buildings using a modified box model assuming no loss of gas from the crawl space. All vapor migration modeling assumed a soil cover over waste materials of three feet. Airborne particulate concentrations for both hypothetical on-site and off-site residents were estimated from monitoring data obtained from the nearby Long Beach Air Monitoring Station (California Air Resources Board facility).

Risk assessment results found that for on-site residents, potential 95 percent UCL-based cancer risks ranged from 1.2×10^{-2} (adult) to 1.4×10^{-2} (child). UCL-based noncancer hazard indices (HIs) ranged from 45.3 (adult) to 210 (child). The primary exposure pathways contributing to elevated risks and HIs were groundwater ingestion and inhalation of VOCs in indoor air. Modeling of methane gas intrusion into the crawl space of residential buildings found that explosive levels may be reached after 45 days. For off-site residents, UCL-based cancer risks ranged from 7.9×10^{-5} (child) to 8.6×10^{-5} (adult). UCL-based HIs ranged from 0.4 (adult) to 1.3 (child). Off-site residential risks and HIs were due primarily to the airborne soil particulate exposure pathway.

Under the long-term commercial/industrial use scenario, the estimated UCL-based cancer risk for workers was 6.6×10^{-5}, and the UCL-based HI was 0.3. Vapor inhalation was the predominant exposure pathway. For on-site visitors, UCL-based cancer risks ranged from 5.8 x

10^{-5} (adult) to 7.3 x 10^{-5} (juvenile). UCL-based noncancer HIs ranged from 0.02 (adult) to 0.07 (juvenile). The predominant exposure pathways for visitors were vapor inhalation for cancer risk and dermal contact for noncancer effects.

For the 2-year construction/excavation activities scenario, the estimated UCL-based cancer risk for workers was 9.1 x 10^{-5}, and the UCL-based HI was 1.7. Vapor inhalation was the predominant exposure pathway. For off-site residents, UCL-based cancer risks ranged from 6.3 x 10^{-5} (adult) to 2.9 x 10^{-4} (child). UCL-based noncancer HIs ranged from 1.7 (adult) to 7.8 (child). The predominant exposure pathway was vapor inhalation.

The BRA concluded that excavation activities associated with the 2-year construction/excavation activities and/or the development of the landfill into detached single-family homes built at grade would result in greater risks to human health compared to commercial/industrial development. If the site were developed into permanent housing, without implementation of RAP-required remedial measures the most immediate health hazard would be related to the possible accumulation of methane gas beneath structures and the potential risk from an explosion or fire. In addition, under the BRA no remediation assumption, long-term residents might be subjected to elevated cancer risks and noncarcinogenic health hazards. In contrast, the estimated health risks would be lower in the Long-Term Commercial/Industrial Use scenario. The estimated lifetime cancer risks to off-site residents/visitors, on-site workers, and a resident/worker composite scenario would be well within risks calculated for average background concentrations of selected air pollutants that are common in the Los Angeles area. Thus, on-site activities would not incrementally add to the risks that are already present in the area.

An Ecological Risk Assessment was not included due to the urban nature of the Project area, the lack of natural water bodies in the area and the impervious nature of the stormwater and flood drainage channels.

(a) Final Remedial Action Plan for the Upper Operable Unit

A Final Remedial Action Plan (Final RAP) was prepared for the Upper OU and approved by DTSC in 1995. The Final RAP is based on site-specific data gathered from the RI for the Upper OU. The Final RAP summarizes the findings of the RI, BRA and Feasibility Study (FS). The Final RAP describes the remedial alternative chosen for the Upper OU, how the Remedial Action Objectives are to be met, and an implementation schedule. The primary remedial action objective is to provide protection for human health and the environment. More specifically, objectives include: control surface water infiltration into the waste prism to reduce the generation of leachate; prevent direct contact with contaminated soil or buried waste; capture, control, and treat on-site contaminated groundwater and the plume that is now off site; and control or prevent potential releases of landfill gas to the atmosphere.

Based on the RI and the BRA, the RAP indicates that the remedial action should include a combination of the following actions:

- Construction of a low-permeability clay cover system for the entire landfill site;
- Installation of groundwater extraction and treatment systems along the downgradient side of the landfill site;
- Installation of a perimeter landfill gas extraction, control, and treatment system along the perimeter of the landfill site within the waste zone;
- Implementation of long-term monitoring of the groundwater and landfill gases; and
- Long term maintenance of the cap.

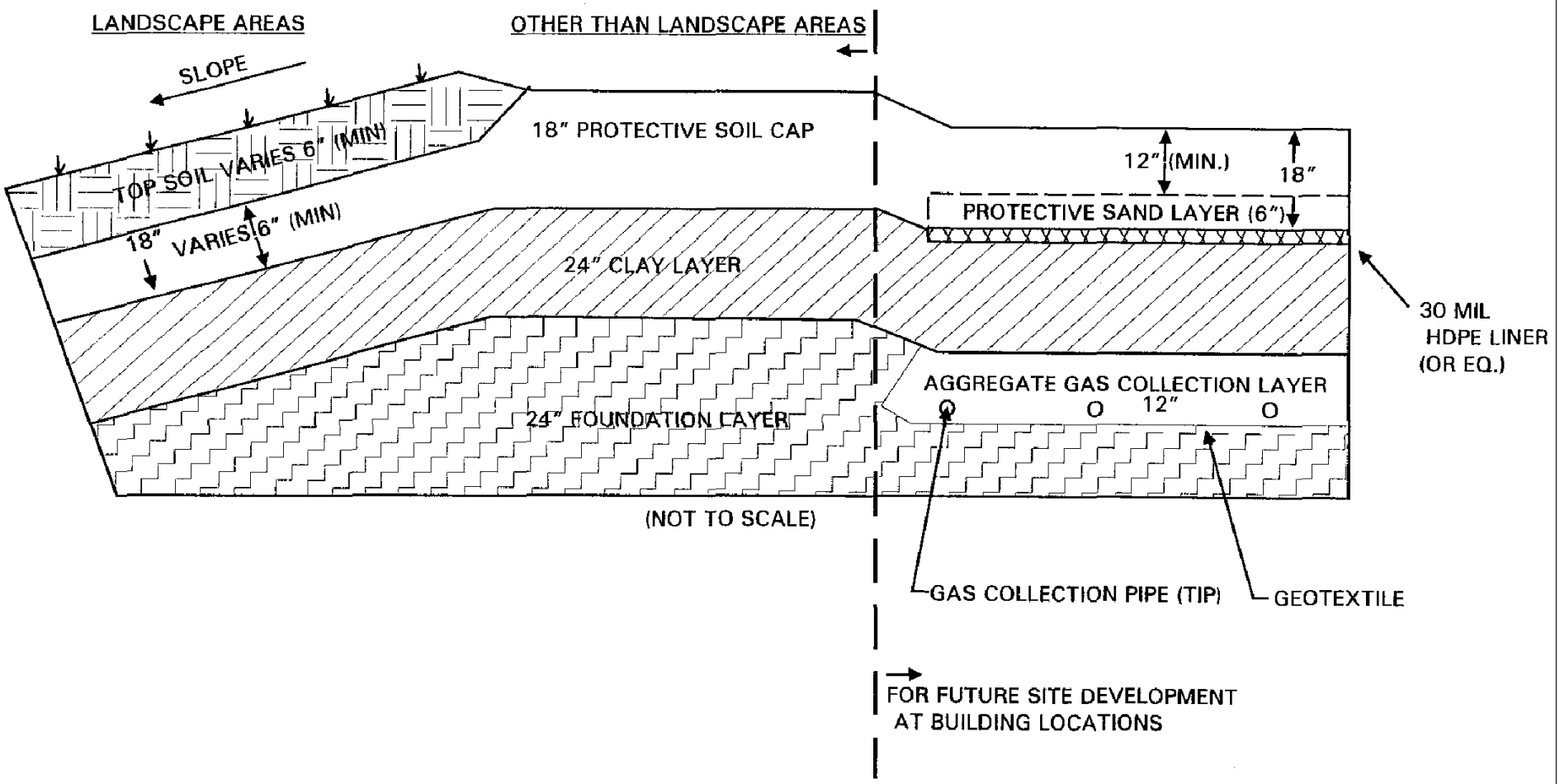
To ensure the proper design, construction, and implementation of the systems indicated above, recommendations were also provided in the RAP for development and performance of detailed confirmatory investigations to obtain additional information for the RD. The planned confirmatory investigations included a landfill gas survey. During the RD phase, the RAP requires that operation and maintenance and monitoring programs be developed for all remedial systems. A description of each of the identified actions as set forth in the RAP is provided below under separate subheadings.

(i) Landfill Cap

The purpose of the low-permeability clay cover system is to contain the buried waste and the impacted soil on the landfill site. As shown in Figure 26 on page 282, the proposed cap consists of layers. The cap would be different for areas under structures, non-building and non-landscape areas (i.e., parking lots), and landscape areas. Prior to the installation of the landfill cap, deep dynamic compaction (DDC) would be used to pre-consolidate the upper layers of the trash so as to reduce future settlement of the material and to provide a more uniform substrate over which to construct the landfill cap.[38] DDC would be conducted so as to not expose trash and would include a provision to immediately apply soil in the event that exposure of trash were to become a concern. The finished surface after DDC would be a clean and smooth soil surface.

The cap would have three primary layers, the foundation layer, clay layer and protective soil cap. The foundation layer consists of existing soil cover material and/or suitable imported

[38] *Deep dynamic compaction (DDC) is the densification of soil deposits or other materials by means of repeatedly dropping a heavy weight onto the ground. Most DDC is undertaken with weights ranging from 6 to 30 tons. The drop heights generally range from 50 to 100 feet and the weight is generally dropped by a conventional crane.*



PCR

Figure 26
Landfill Cap Layer

Source: Allwest Remediation, 2002

materials and serves to support the cover system. The RAP requires a foundation layer thickness of 24 inches. The RAP allows 12 inches of existing soil cover to account for part of the foundation layer.

The purpose of the clay layer is to inhibit infiltration of surface water into the refuse and to inhibit upward migration of landfill gas. The clay layer would consist of a minimum of 24 inches of clay material with a permeability of 1×10^{-6} cm/sec or less. As needed, bentonite amended soil may be added to achieve the required permeability.

An 18 inch protective soil cover layer serves to protect the clay layer. The protective soil cover layer would be constructed from suitable imported material.

The RAP requires the installation of a double liner system under buildings in order to provide additional protection and landfill cap integrity. The double liner consists of a geomembrane liner (30 mil High Density Polyethylene [HDPE] liner) on top of the clay layer. A 6 inch thick sand layer is placed above the geomembrane liner to protect it during construction/installation activities and to serve as a drainage layer. In addition, a 12-inch thick layer of sand/gravel aggregate would be provided in the foundation layer. This aggregate layer will be placed under the clay layer and wrapped with a geotextile filter to prevent the introduction of fine particules. The landfill gas collection system under the buildings would be installed in this aggregate layer.

In landscaped areas a topsoil layer would be provided to support vegetation root systems. The topsoil layer would have an average thickness of 12 inches and may replace the upper 6 inches of the protective soil cover.

The RAP envisioned that much of the soil used to construct the earthen cap, including topsoil would likely be imported. In addition, existing soil cover and soil contained in the sloped areas surrounding the cap would remain and be used as part of the cap or remain adjacent to the cap. During Remedial Design (RD), additional soil cover samples will be collected and analyzed to further evaluate existing soil-cover quality, particularly soil that will reside near land surface such as in landscaped areas. Human-health risk evaluations and a soil management plan will be completed and provided to the DTSC for evaluation and approval to ensure that exposure to soil at the Project site does not pose unacceptable human health risks.

In 1999, the South Coast Air Quality Management District (SCAQMD) issued a Notice to Comply with SCAQMD Rule 1150.1(h)(2) regarding emissions of landfill gas. The Notice to Comply imposed a requirement to mitigate the emissions of landfill gas (methane), which exceeded 500 parts per million by volume (ppmv) in the western portion of the landfill. Approximately 22,000 cubic yards of compacted fill material was placed over surficial fissures that had developed in the existing landfill soil cover on the western portions of the landfill prism.

The placement of the material was completed to reduce emissions of methane to concentrations of less than 500 parts per million by volume (ppmv) from surface fissures to reduce potential risks to the health and safety of the adjacent residential neighborhood. Following placement of the cover soils, SCAQMD inspection confirmed that no significant concentrations of landfill gas were detected in sampled air above the western portion of the landfill. Compliance with all SCAQMD Rules, including 1150.1 will be required as part of RAP implementation.

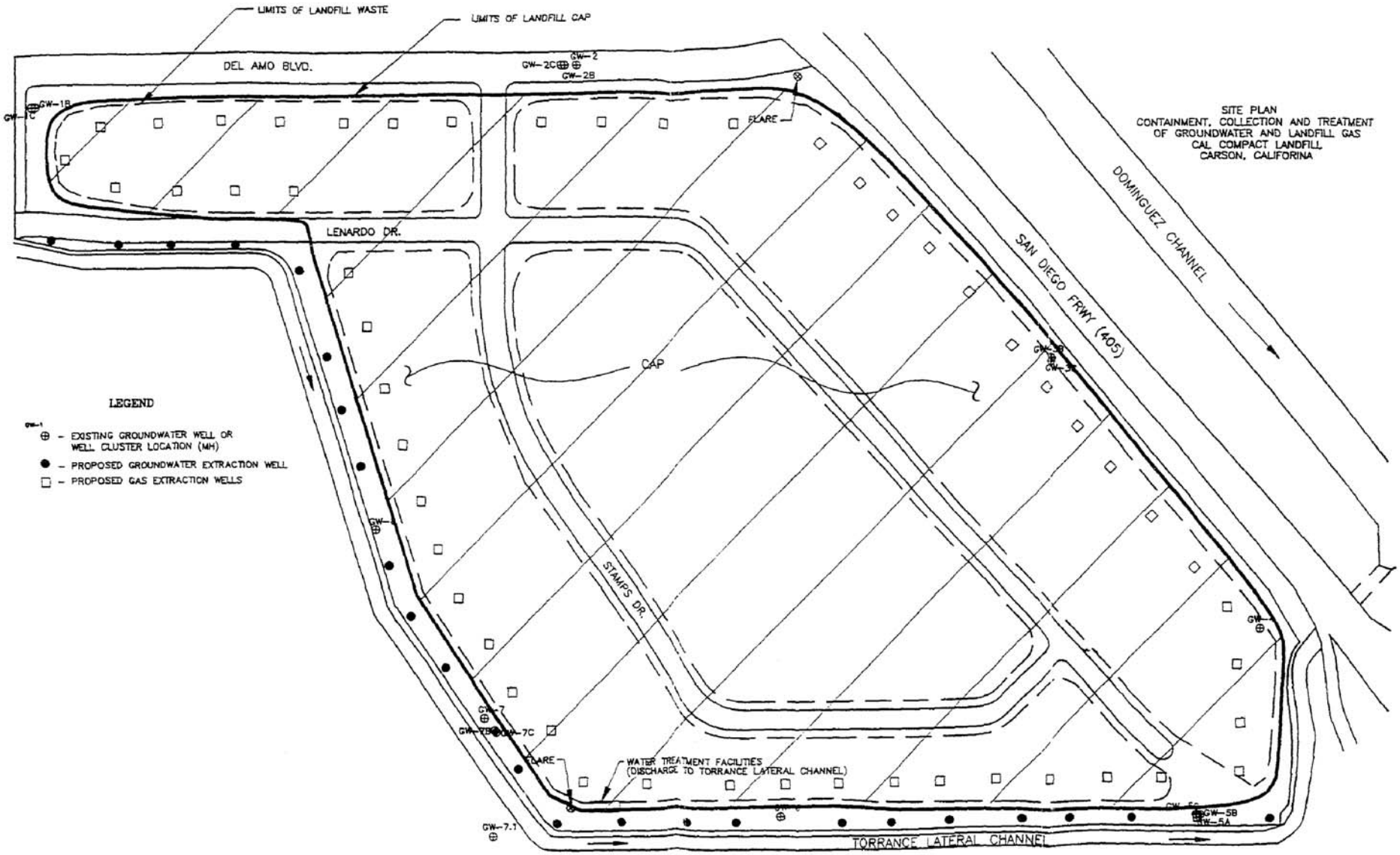
In addition to collecting additional soil data during RD and subsequent RAP implementation phases to evaluate potential health risks, construction and perimeter monitoring will also be completed during earth work, and construction of remediation systems. The approved RAP requires that dust and particulate emissions be controlled and that perimeter monitoring be completed during construction. Therefore, a plan will be developed based on existing and future soil quality data collected during the RD phase, and existing RAP requirements. The plan will be developed to implement engineering controls to minimize off-site migration of dust and particulates to ensure that the surrounding community's health is properly protected. Monitoring and analysis parameters will be based on constituents present at the site and at a minimum, dust and particulate matter (PM_{10}) will be monitored using high-volume air samplers (or equivalent) properly located around the property perimeter. In addition, construction equipment emission will also be periodically monitored at the property boundary in accordance with relevant SCAQMD regulations. This plan will be submitted to the DTSC during RD for review, comment, and approval before any construction activities occur.

(ii) Perimeter Landfill Gas Extraction, Control and Treatment System

The RAP requires the installation of a landfill gas extraction, control, and treatment system. The primary objectives of the landfill gas control system are to prevent the migration and accumulation of combustible gas into enclosed buildings and to prevent off-site landfill gas migration.

The RAP provides that the preferred landfill gas control, collection and treatment system consist of (1) a series of vertical gas extraction wells placed within the outer edges of the waste cells along the perimeter of the landfill; (2) thermal destruction of collected gas using a flare unit, and (3) other gas monitoring and venting systems, if determined necessary and applicable.

The RAP specifies that the gas control wells be installed and screened at appropriate depths intercepting the pervious or semi-pervious zones above the water table. Depending on the presence of the methane and toxic contaminants, these wells must be designed either as a passive or active system to intercept/control the potential for off-site migration. The perimeter gas control system assumes the use of an active extraction system with a typical well spacing of 200 feet and an average depth of about 40 feet. (See Figures 27 and 28 on pages 285 and 286, respectively.) As a result, the RAP requires a total of 55 wells to be constructed along the



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N

0 150 300 Feet

Scale in approximate feet

Source: Brown & Root Environmental

Figure 27
Proposed Groundwater and Gas Extraction Well Locations

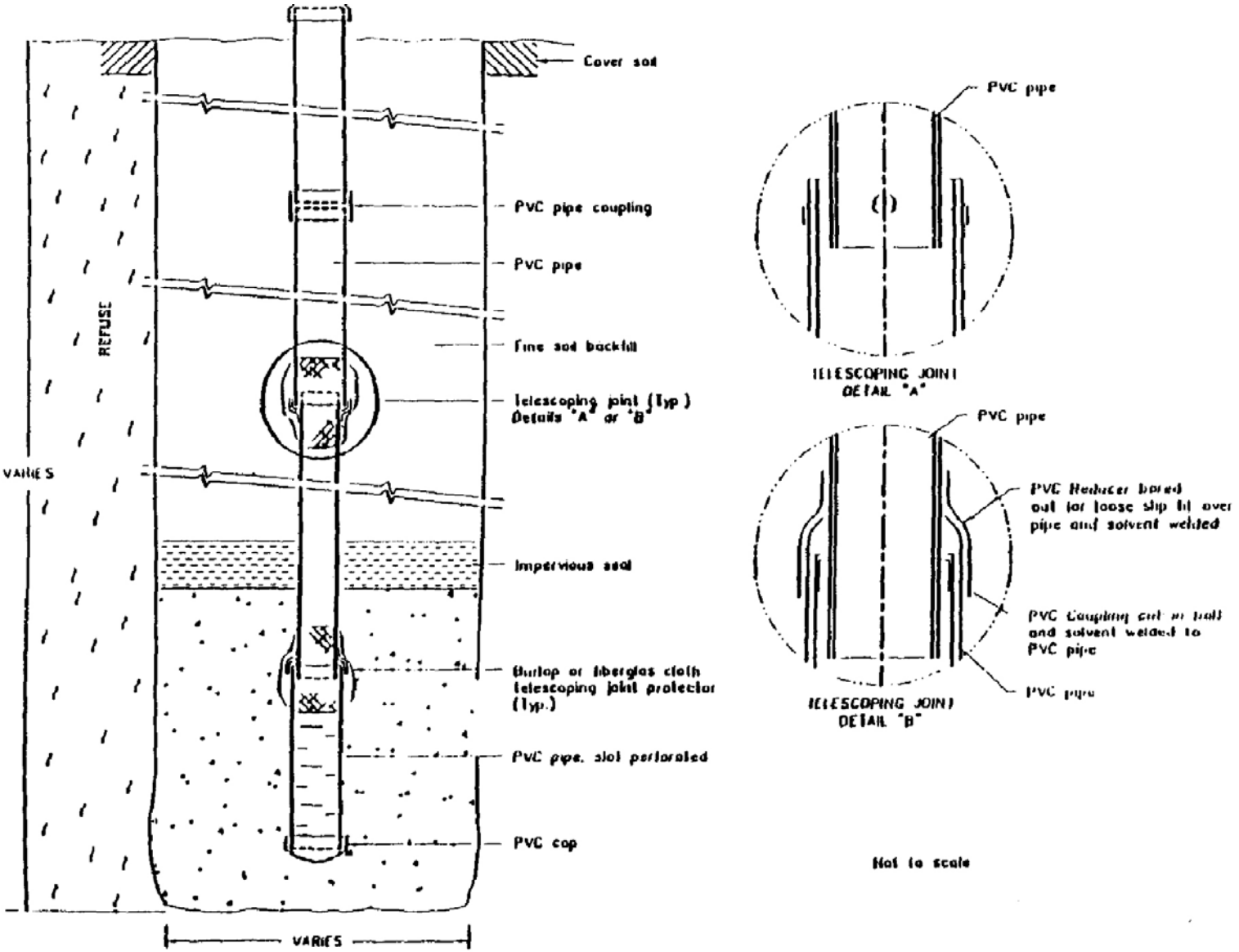

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Figure 28
Proposed Conceptual Gas Extraction Well

Source: Brown & Root Environmental

landfill site boundaries. Detailed design of the gas control system including the actual number of wells and specific spacing is to be determined based on the landfill gas survey.

Under the building areas, an active landfill gas control system would be installed under the clay cover system to protect against the landfill gases. The active landfill gas control system would consist of horizontal, perforated piping that is installed in the permeable aggregate layer below the clay/geomembrane layer. The active gas control would be a low pressure vacuum system to minimize potential drying of the clay layer. Spacing for these pipes would coincide with the spacing for the piling needed to support the building. A spacing of 15 feet is anticipated for the horizontal piping.

Based on the size of the landfill site and the need of the perimeter landfill gas control, the RAP assumes that the landfill gas treatment will require the construction of a flare unit including related collection headers, blowers, and gas sampling and processing components. The RAP provides that collected landfill gas will be delivered from the header system to the flare by a blower. The gas is to pass through an automatic shut-off valve and a flame arrestor to prevent flash back. Landfill gas would be mixed with dilution air for efficient combustion at the flare burner elements. Dilution is to be automatically introduced into the flare by a dilution air valve regulated by the combustion temperature. Supplemental fuel (natural gas or propane) would be automatically introduced into the flare to maintain the required combustion temperature and thermal efficiency. The flare, which is subject to SCQAMD requirements, would be equipped with standard safeguard controls and other required air emission control devices to monitor operating conditions and shut down the system when appropriate. The flare would be constructed or shielded from the traveling motorists to minimize or reduce the potential for visual distraction.

The RAP also requires that for building safety, additional landfill gas venting or monitoring features be considered. These features include:

- Open ventilation provided by open parking structures or passive surface vent pipes to monitor or release methane from accumulating beneath the cap. As applicable, the vent pipe will be constructed with the ability to be connected to an induced draft exhaust system;
- A pile sleeve system to seal the liner to the building piles; and
- A landfill gas monitoring and alarm system for landfill gas in or under the building.

The RAP indicates that these features would be designed in detail during the remediation system and/or building construction/design phase and would be part of the ongoing operation and maintenance activities.

(iii) Groundwater Extraction and Treatment System

The RAP requires a groundwater extraction system to be installed along the downgradient perimeter of the site to recover contaminated groundwater and to prevent off-site migration of contaminated groundwater. Recovered groundwater would be routed from groundwater extraction wells to an on-site groundwater treatment system which is designed to prevent off-site migration of contaminated groundwater. As shown in Figure 29 on page 289, the treatment system would consist of an equalization tank (holding tank), a filter (screening) process to remove suspended solids, a precipitation/sedimentation process to remove metals, an activated carbon treatment process to remove organics, and a final polishing filter process to remove settlable solids prior to discharge. The groundwater treatment equipment would be constructed on a reinforced concrete pad or equivalent structure. The final design of the system would be developed during the remedial design phase and approved by DTSC prior to construction. Any groundwater wells that would be installed as part of this system will be designed constructed and maintained using materials and methodologies that reduce the risk of the wells serving as conduits for contamination to migrate to deeper hydrostratigraphic units below the Upper OU. DTSC will review and approve all plans related to groundwater wells installed and operated as part of this system.

(iv) Long Term Monitoring of the Groundwater and Landfill Gases

Groundwater Monitoring

The RAP requires quarterly groundwater monitoring to provide adequate and representative groundwater quality data to monitor the effectiveness and duration of the groundwater remedial action. The monitoring data would be used to adjust the remedial strategy, if necessary, to ensure that contamination does not migrate off-site. While the groundwater level is rising in the area, where the waste is in contact with the groundwater there is evidence that the contaminants are not downmigrating into the groundwater.

The monitoring program would include monitoring points at downgradient points, both on and off-site, upgradient points, and points in the Gage aquifer beneath the Upper OU. The approved RAP anticipates that the monitoring network would include the following: (1) approximately five new downgradient wells located outside the leading edge of the identified contamination area of concern near the west and southwest corner of the 157-acre landfill site, (2) one new upgradient well near the northeast property boundary, and (3) three new Gage wells, one upgradient and two downgradient. Several existing monitoring wells including the two Gage wells could be redeveloped and used as part of the monitoring program. The specific number and location of the wells would be determined during final development of the groundwater monitoring program and would be approved by DTSC.

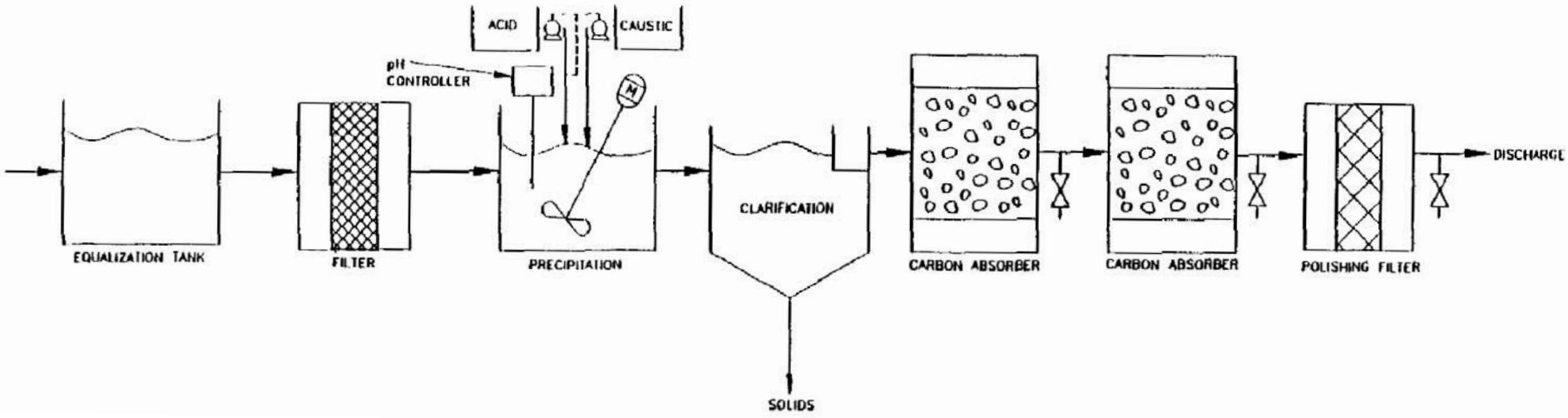

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Figure 29
Conceptual Groundwater Treatment System

Source: Brown & Root Environmental, 1995

Groundwater monitoring and sampling of all wells would initially be conducted on a quarterly bases for one year. The samples would be analyzed for 34 VOCs in the Target Compound List (TCL) using approved methodologies. After one year, the frequency and analyses to be performed would be re-evaluated and modified as appropriate. The monitoring program would be conducted for 30 years or until the groundwater contamination has been in continuous compliance with the remediation goals and upon DTSC and RWQCB written approval.

Landfill Gas Monitoring

The RAP requires quarterly air and soil monitoring of landfill gas. The purpose of the monitoring is to provide early warning of potential off-site migration and to ensure proper control of the landfill gases. With regard to air sampling, requirements for the gas monitoring include the following: (1) the concentration of methane gas must not exceed 1.25 percent by volume in air within on-site structures, (2) the concentration of methane gas must not exceed 5 percent by volume in air at the landfill property boundary, and (3) trace gases must be controlled to prevent adverse acute and chronic exposure to toxic and/or carcinogenic compounds. The monitoring data would be used to adjust the gas collection and treatment measures as necessary so that the gas control and treatment system would be properly implemented.

The landfill monitoring system would also include a perimeter gas monitoring network. The monitoring network would use 18 monitoring wells/probes distributed along the entire landfill property perimeter within the native soil. Spacing of the wells would be approximately 1,000 feet along the north and east boundaries and 500 feet along the south and west boundaries near the neighboring residential area. The perimeter gas monitoring would include the analysis of Calderon air contaminants, in particular, benzene, vinyl chloride and total organic compounds measured as methane. The monitoring program would be conducted on a quarterly basis for 30 years.

(v) Long Term Maintenance of the Landfill Cap

The RAP requires the long term maintenance of the landfill cap. The post-closure maintenance of the cap would include inspections of the cover to check for surface cracking, settlement and/or surficial slumping. Any cover deficiencies identified would be repaired to ensure the integrity of the landfill cap.

(vi) Other Components of the RAP for the Upper Operable Unit

In addition to the components discussed above, the RAP provides specific requirements with regard to the use of pile foundation that is proposed for the site. The RAP also requires deed restrictions for the development of the site. These are both addressed below.

Piling Construction

The RAP anticipated that future development of the landfill site would use a pile foundation to support the buildings located over the landfill refuse. The RAP requires that the pile penetrations in the building areas incorporate a sealable sleeve made out of steel, and a geomembrane or geocomposite (a composite layer of geomembrane and bentonite) material that is fastened or adhered to the geomembrane liner. The sleeve would be attached between the piles and the liner and would provide controlled slack to allow for settlement. The piles would be driven to the bearing soil below the waste. The annular space between the piling and sleeve would be sealed with a polymer material to prevent landfill gas from migrating upward in this space.

During installation of the piles, some landfill gas may discharge to the atmosphere. Furthermore, some liquids contained within the refuse may migrate downward to the bottom of the pile penetration within the bearing soil. During the initial remedial design for the landfill cap and landfill gas collection system, further characterization and evaluation of the landfill gas occurrence and landfill liquid occurrence will be performed. Following further characterization, plans will be prepared that will include methods for minimizing and monitoring the discharge of landfill gas and the downward migration of landfill liquids. The plans, which will include a description of methodologies and installation procedures that are protective of human health and the environment, will be submitted to DTSC for review and approval prior to installation of the piles. DTSC's review will focus on the means by which the installation methods will be protective of human health and the environment. The installation contractor will also follow OSHA-compliant health and safety plans to further protect the workers and the public from unacceptable exposure to landfill gas and other potential hazards during construction.

Potential methods that may be used to mitigate discharge of landfill gas during pile installation include:

- work area and landfill perimeter air monitoring;
- the use of agents that reduce gas emissions, such as water spray or applicable foams;
- pre-installation of permanent vertical gas wells with a temporary extraction and gas treatment system prior to and during pile driving,
- further characterization of landfill gas occurrence across the landfill cells; and
- the implementation of the aforementioned health and safety plans.

Potential methods for mitigating impact to groundwater during pile installation include:

- proceeding with an end-bearing pile design, as compared to a friction pile design, which significantly reduces the depth of penetration into the soils beneath the refuse;

- the use of bentonite fluids to help seal the annual space between the pile and the bearing soils;

- further RAP-required groundwater monitoring in the LOU which will continue for many years after installation; and

- the operation of the RAP-required UOU groundwater containment system.

Deed Restrictions

Deed restrictions are a legal control to prohibit specific activities that could occur at the Project site. Under the RAP, deed restrictions must be recorded on the landfill site with the appropriate county recorders office to limit future land uses to commercial/light industrial activity, and to ban such uses as residential, hospitals, schools, and day care centers. In addition, the deed restrictions must limit activities on the landfill site such as deep excavations into the clay layer or buried waste or use of groundwater wells for domestic supply or for agriculture. Deed restrictions will also be used to grant right of access to specific areas of the site as needed for the implementation and monitoring programs required in the RAP.

The RAP provides that the deed restrictions would be approved by the DTSC prior to recording and would run with the property. The recording of the deed restriction is intended to put all potential buyers of the property on notice of the deed restrictions, which would remain in force regardless of future property transactions. To the extent that the proposed residential use is permitted by DTSC, based upon a final determination that the project design features are protective of residents' health and safety, the required deed restrictions would need to be modified to allow elevated residential development within certain specified areas of the site.

(b) Final Remedial Action Plan for the Lower Operable Unit

The Final RAP for the Lower OU addresses the potential impact of groundwater contamination in the Upper OU on the Lower OU. The Lower OU is defined as the deeper hydrostratigraphic unit beginning at the Gage aquifer and extending down to the Silverado aquifer.

In 1998, site-specific models (Dames & Moore, 1998) were developed to evaluate the hydrostratigraphic units of both the Upper and Lower OUs, specifically the position of the Gage aquifer, to assess the potential for downward migration of VOCs into the Lower OU. The result of the 1998 study supported the conclusion that the contamination previously attributed to the

Gage aquifer actually reflected conditions in portions of the overlying Bellflower Aquitard. In 2000, a hydrostratigraphic investigation was conducted to confirm the findings of the 1998 study. The conditions encountered during the 2000 investigation confirmed, with a high degree of precision, the interpretation that the Gage aquifer is located at a greater depth (by almost 100 feet) than previously interpreted in the Upper OU RAP. The DTSC has concurred with the findings of this study, which places the Upper OU/Lower OU boundary at a depth of approximately 220 feet below ground surface (bgs). This is deeper than the interpretation presented in the Upper OU RAP, which placed the top of the Gage aquifer at approximately 100 feet bgs. Figure 30 on page 294 provides a schematic hydrosratigraphic cross section illustrating the site model with regard to the aquifers. In addition, laboratory results for groundwater samples collected from the Gage aquifer indicated no detectable concentrations of VOCs or metals.[39] Barium and zinc concentrations were reported below MCLs for drinking water.

Based on groundwater monitoring and chemical fate and mobility modeling data, in conjunction with remedial actions for the Upper OU, the risk posed to the Lower OU is considered to be minimal. The Final RAP for the Lower OU concludes that additional remedial investigation of the Lower OU is not currently warranted since no VOCs are present at detectable concentrations in the Gage aquifer (Lower OU).[40] However, because of the potential for contamination of drinking water and to satisfy the applicable regulatory provisions,[41] a response action was selected as the remedy for the Lower OU as it will provide the necessary controls to detect any future chemical impacts to the Lower OU. Under the DTSC-approved remedy, the groundwater monitoring would be conducted on a quarterly basis for a period of two years, followed by semi-annual monitoring for an additional two years, and annual monitoring every third year thereafter for up to 50 years. If any VOC is detected in the Lower OU during that period, the monitoring events would be increased to quarterly for a period of two years.

The monitoring of the Lower OU began in January 2005. Sampling of the three Lower OU groundwater monitoring wells in the Gage Unit aquifer were conducted in April and July 2005. Consistent with sampling conducted prior to approval of the Lower OU RAP, the July 2005 groundwater samples do not show evidence of contamination.[42] These results differ from the April 2005 results in which very low levels of perchlorate in two of the three wells were detected. The April 2005 sampling also showed some phthalate detections. The April 2005 results may be an anomaly. The expanded database that will be created as a result of future

[39] *URS/Dames & Moore, 2000.*

[40] *URS, Op. Cit, page 7.*

[41] *The regulatory provisions include CERCLA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Section 300.415(b)(2)), and the California Health and Safety Code section 25323.*

[42] *Letter dated August 10, 2005 from BKK Corporation to DTSC.*

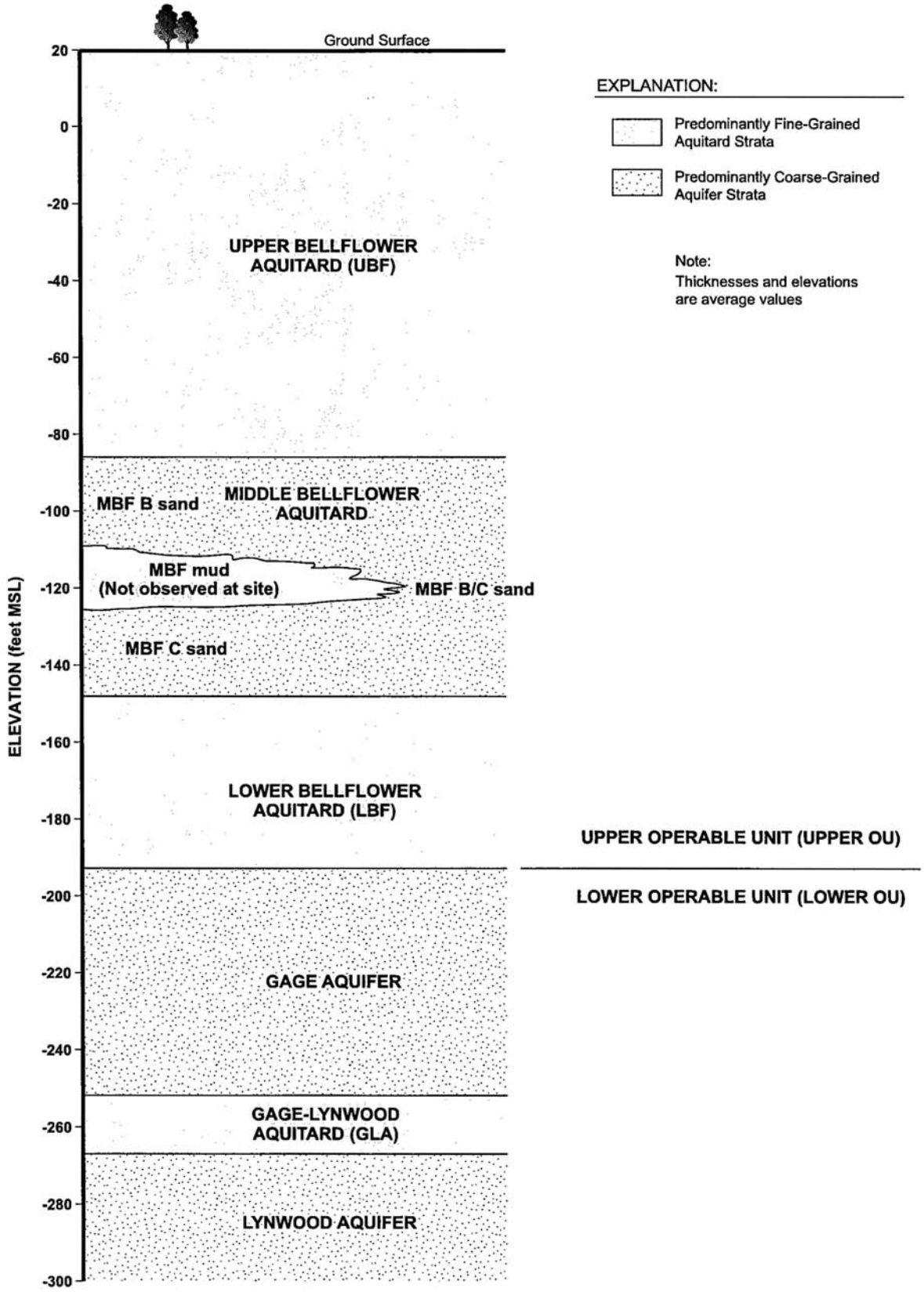

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Figure 30
Schematic Hydrostratigraphic Cross Section

Source: Dames & Moore 2000 and URS

RAP-required monitoring will yield a more thorough assessment of the groundwater quality in the Gage Unit aquifer. DTSC will oversee this monitoring and evaluate the database.

(iv) Risk of Upset Analysis

The Applicant has identified potential upset risks related to the presence of landfill waste at the Project site, during both (1) implementation of the Remedial Action (RA) and construction of the Project; and (2) operation of the developed Project. An analysis of the likelihood of such risks and an evaluation of how to address potential upsets was then completed.

With respect to implementation of the RA and the construction phase, the analysis focused on unanticipated and/or accidental events that if they happen, could adversely impact the environment. Safety-related incidences or physical accidents were not considered since they will be identified, minimized, controlled, and monitored by health and safety planning and implementation.

Potential construction or remedy-related upset scenarios that could impact the environment were identified as follows:

- Unintentional, sudden or significantly increased release of landfill gas (LFG) during RA activities;
- Significant off-site migration of airborne particulates during earth-work activities;
- Underground landfill contents fire; and
- Driving soil or groundwater contamination into deeper hydrostratigraphic units.

Each of the potential upset scenarios above has a low likelihood of occurring for the reasons explained in Table 28 on page 296. Table 28 also explains what would be done to eliminate or minimize impacts even in the unlikely event that any of these potential upset scenarios occurred.

With respect to the operation phase of the Project, multiple layers of protection and fail-safe features have been proposed to be incorporated into the remediation systems to protect future occupants and the surrounding community. A description of these systems is provided in paragraph 3.c. of this Hazards Section. As a consequence, simultaneous failure of the multiple protection systems would have to happen before a true upset scenario would occur. Nevertheless, for purposes of analysis, potential individual operation-related upset scenarios were identified as follows:

Table 28

Upset Scenarios During the RA and Construction Phases

Upset Scenario	Reason for Low – Likelihood	Possible Corrective Actions to Minimize Impacts
Unintentional, sudden or significantly increased release of landfill gas (LFG)	-Landfill is mature (inactive over40 years) with minimal LFG production capabilities. -Site would be characterized to better understand conditions of LFG, therefore extra caution would be employed in areas with high LFG potential -Continuous air monitoring of work area and perimeter would allow rapid corrective action -No planned exposure of waste during RA activities with the soil cover being maintained during construction -Pipeline trenches would be backfilled immediately after pipe installed	-Immediately stop operations -Cover LFG escape route with on-site soils -Re-evaluate construction procedures to eliminate problem -Use foam to control emissions- -Cover LFG escape route with on-site soils. -Use SCAQMD approved emissions control box
Significant off-site migration of airborne particulates during earth-work activities	-Continuous dust monitoring of work area and perimeter would be completed -Application of water for dust control would be frequent -Wind conditions would be monitored and activities adjusted accordingly -Weather forecast would be monitored for adverse wind conditions and activities adjusted accordingly	-Increase water application -Use specialized dust suppressants -Stop work during high wind periods
Underground landfill contents fire	-Likely that the methane to oxygen ratio would not be ideal to spark and/or ignite -No planned activities that would introduce oxygen into the waste prism -No significant exposure of waste to atmosphere during construction	-Continuous monitoring of subterranean temperatures and oxygen concentrations in work area -Heavily water work area -Inject water into waste -Stop work at predetermined action levels -Coordinate with local fire authorities

Table 28 (Continued)

Upset Scenarios During the RA and Construction Phases

Upset Scenario	Reason for Low – Likelihood	Possible Corrective Actions to Minimize Impacts
Driving soil or groundwater contamination into deeper hydrostratigraphic units	-Site characterized with known groundwater conditions at locations where piles would be driven -Use of displacement piles that impact only upper 20 feet of Bellflower Aquitard beneath waste -Engineered controls would be applied to specifically address this risk	-Modify pile driving procedures -Use bentonite slurry as seal material at bottom of piles -For wells, modify well design and construction methods, or properly abandon the well

Source: PCR Services Corporation.

- Failure of landfill gas extraction wells or conveyance piping;
- Failure of landfill gas vacuum system;
- Failure of landfill gas flare, blowers, or make-up gas;
- Failure of electrical power;
- Failure of landfill gas system instrumentation, data logger, or data transmitter;
- Failure of landfill gas alarms;
- Geomembrane liner (cap) puncture, tear, or seam separation;
- Failure of building protection system's impermeable liner attached to slab;
- Failure of methane detection sensors;
- Failure of groundwater injection or extraction wells or conveyance piping; and
- Failure of groundwater treatment and discharge system.

Each of the potential individual upset scenarios above has a low likelihood of occurring for the reasons explained in Table 29 on page 298. Table 29 also explains what would be done to eliminate or minimize impacts even in the unlikely event that any of these potential upset scenarios occurred. Moreover, as explained above, due to the redundancy of the systems,

Table 29

Upset Scenarios During the Operation Phase of The Project

Upset Scenario	Reason for Low Likelihood	Corrective Actions to Minimize Impacts
Failure of landfill gas extraction wells or conveyance piping	-System designed per local seismic standards -Design to use flexible pipe and joints to accommodate movement - Use of inert materials in construction -Extensive Construction Quality Assurance (CQA) Program -Established Institutional Control Program (ICP) to control damage -Routine and frequent monitoring and inspections would be completed	-Have spare parts and repair equipment on hand -Form an emergency response team (ERT) for rapid response with appropriate training -Have a 24/7 monitoring system with automated notification of ERT
Failure of landfill gas vacuum system	-System designed per local seismic standards -Have strict O&M program -Have back-up system -Design to use flexible pipe and joints -Extensive Construction Quality Assurance (CQA) Program -Routine and frequent monitoring and inspections would be completed	-Have spare parts and repair equipment on hand -Upgrade equipment as needed
Failure of landfill gas flare, blowers, or make-up gas	-System designed per local seismic standards -Have strict O&M program -Have back-up system -Design to use flexible pipe and joints -Extensive Construction Quality Assurance (CQA) Program -Fail-safe shut down controls would be included	-Have spare parts and repair equipment on hand -Upgrade equipment as needed -Form an emergency response team (ERT) for rapid response with appropriate training -Have a 24/7 monitoring system with automated notification of ERT
Failure of electrical power	-Have back-up generator -Have back-up batteries for sensors -Have strict O&M program	-Maintain back-up generator -Upgrade equipment as needed
Failure of landfill gas system instrumentation, data logger, or data transmitter	-Perform frequent inspections and diagnostics -Have strict O&M program -On-site operations and maintenance personnel will be present during much of the work week	-Have spare parts and repair equipment on hand -Upgrade equipment as needed

Table 29 (Continued)

Upset Scenarios During the Operation Phase of the Project

Upset Scenario	Reason for Low Likelihood	Corrective Actions to Minimize Impacts
	-Have back-up systems	
Failure of landfill gas alarms	-Perform frequent inspections and diagnostics	-Have spare parts and repair equipment on hand
	-Have strict O&M program	-Upgrade equipment as needed
	-Have back-up systems	
Geomembrane liner (cap) puncture, tear, or seam separation	-Use 40 to 60-mil LLDPE for strength and elongation to accommodate settlement	-Conduct surface screening to identify any leaks
	-Bury liner at least 4 ft below surface	-Have repair materials and equipment readily available
	-Liner under buildings protected by slab	
	-Extensive Construction Quality Assurance (CQA) Program	
	-Established inspection and repair program	
	-Established Institutional Control Program (ICP) to control damage	
Failure of building protection system secondary liner	-Use 80 mil HDPE or equivalent for strength and longevity	-Conduct surface screening to identify any leaks
	-Liner protected by slab	-Have repair materials and equipment readily available
	-Extensive Construction Quality Assurance (CQA) Program	-Actively extract air space beneath buildings
	-Established Institutional Control Program (ICP) to control damage	
Failure of methane sensors	Perform frequent inspections and diagnostics	-Have spare parts and repair equipment on hand
	-Have strict O&M program	-Upgrade equipment as needed
	-Have back-up systems	
	-Employ only rugged, durable, and reliable sensors	
Failure of groundwater injection or extraction wells or conveyance piping	-System designed per local seismic standards	-Have spare parts and repair equipment on hand
	-Design to use flexible pipe and joints to accommodate movement	-Form an emergency response team (ERT) for rapid response with appropriate training
	- Use of inert materials in construction	
	-Extensive Construction Quality Assurance (CQA) Program	-Have a 24/7 monitoring system with automated notification of ERT
	-Established Institutional Control Program (ICP) to control damage	
	-Routine and frequent monitoring and	

Table 29 (Continued)

Upset Scenarios During the Operation Phase of the Project

Upset Scenario	Reason for Low Likelihood	Corrective Actions to Minimize Impacts
	inspections will be completed	
Failure of groundwater treatment and discharge system	-System designed per local seismic standards -Have strict O&M program -Have back-up system -Design to use flexible pipe and joints -Extensive Construction Quality Assurance (CQA) Program	-Have spare parts and repair equipment on hand -Upgrade equipment as needed -Form an emergency response team (ERT) for rapid response with appropriate training -Have a 24/7 monitoring system with automated notification of ERT

Source: PCR Services Corporation

multiple and simultaneous failures would have to occur to create the potential for impacting human health or the environment. The likelihood of such multiple, simultaneous, and complete system failure is very low.

As part of the Remedial Design (RD) process, upset scenarios that could impact human health and the environment, during either the RA/construction phase or the operation phase of the Project, would be further evaluated and refined. Based upon that evaluation and refinement, design elements, engineering controls, and monitoring and contingency plans would be developed and incorporated into the remedial designs and specifications to minimize the potential for upset events and to establish plans for protection of human health and the environment should an upset event occur. DTSC review and approval of such design elements, engineering controls and monitoring and contingency plans would be a component of DTSC's review and approval of the final remedial designs and specifications for the Project.

(c) On-Site Oil and Water Wells

While the Project site is located beyond the boundaries of any oil and gas field, there is information that suggests two abandoned oil wells are located within Development Districts 1 and 2. These wells are identified as the Marigold-Del Amo and Kelly-Del Amo oil wells. The Marigold-Del Amo oil well was drilled in August 1955 and was abandoned in September 1955. The Kelly-Del Amo oil well was drilled in 1933 and was abandoned in December 1934. Both wells were drilled and abandoned with permits from the California Division of Oil and Gas,

which is currently the Division of Oil, Gas, & Geothermal Resources (DOGGR). The Marigold-Del Amo and Kelly-Del Amo oil wells are believed to be located under approximately 50 feet of landfill waste and an estimated 20 feet of groundwater.[43]

In addition to the oil wells, State of California Department of Water Resources (DWR) records indicate that water well 4S/13W-7H1 was installed on the site in October 1948. DWR records indicate that the well was monitored in October 1987. The location of the water well is not clear. The well location as plotted based on DWR records, indicates that the well is located on the former haul road to the east of the Kelly-Del Amo oil well. However, based on site investigations conducted in 1992, the well could be located within the landfill waste prism to the southeast of the Kelly-Del Amo oil well. In either location, the water well is located within Development District 2.

The approved RAP for the Upper OU called for an additional investigation to be conducted during the implementation phase of the RAP to locate the three wells and to address issues such as the risk of downward migration of contaminants into lower aquifers. To the extent feasible, the RAP requires that the former water well and two oil wells be located and abandoned to meet current regulatory standards. The RAP indicates that the location of the wells is to be re-surveyed using available historic data. Survey locations are then to be compared to the prior investigations. Based on the results of these investigations, an excavation plan is to be considered, which is limited to those areas with the highest probability of finding the oil and water wells. The limitation is necessary because of the risk associated with excavating buried hazardous substances. The RAP requires that the health risk be evaluated prior to any excavation. Regulatory approval of all plans and permits must be obtained prior to any excavation activities.

A December 1998 Allwest Geoscience, Inc. report concludes that well re-abandonment would be infeasible due to the following factors: (1) oil well casings are estimated at depths in excess of 50 feet below existing ground surface; (2) 20 feet of perched groundwater exists above the estimated top of the well casing; (3) potential health risks and liabilities from vapor emissions, particulates, excavated materials, and leachate; and (4) fire and explosion risks. This report has not been approved by DTSC. DTSC is continuing to evaluate the feasibility of well abandonment.

Current documentation regarding the location and abandonment of these wells are unclear. If the wells are present and can be found, it is possible that they were not abandoned consistent with today's requirements to minimize downward groundwater migration around the well casing. During RAP implementation, additional evaluations regarding well locations and

[43] *Workplan for Oil and Water Well Closure at LA Metromall, LLC, Allwest Geoscience, December 1998.*

conditions will be completed with DTSC input and a determination will be made regarding the need for and feasibility of re-abandoning these wells.

(2) Development District 3

Development District 3 currently contains vacant, undeveloped land covered with vegetation. There were historically three small structures, a baseball field, and small stockpiles of asphaltic material in the western portion of Development District 3. Aside from this, the area does not appear to have been developed in the past. Based on historical records, all or some of the three small structures may have been used as a dairy, likely for the sale of milk products. However, for the past 15 years, the property has been used on a limited basis to store construction equipment and materials. Minor stained areas associated with the construction equipment exist in the area where the equipment is stored. No other evidence of environmental concerns such as stained soils, stressed vegetation or indications of the presence of underground storage tanks were observed or reported in the information reviewed. Based on historical geotechnical investigations, fill soils exist to depths of approximately 8 feet.

A soil-vapor survey completed in 1990 identified the presence of VOCs in soil vapor approximately 9 feet below ground surface (bgs) within Development District 3. The presence of VOCs suggested at that time that some landfill gases may have been migrating into Development District 3 from former landfills north and/or south of the property. More recent soil-vapor sampling in shallow soil did not detect the presence of VOCs.

Based on the site reconnaissance, interviews, and records review performed as part of the environmental assessments, there is no evidence to suggest that Development District 3 is a potential source of groundwater contamination. However, several sites in the immediate vicinity have histories of environmental contamination including the Cal Compact Landfill to the south of Del Amo Boulevard (i.e., Development Districts 1 and 2), the Del Amo Superfund site, the Gardena Valley Landfill and the Southwest Conservation Landfill. These sites have the potential to result in groundwater contamination within Development District 3 due to the migration of contaminated groundwater and/or subsurface vapors.

A file review was completed at the Los Angeles Regional Water Quality Control Board for the Brownfield's Economic Development Initiatives (BEDI) Properties and for the properties adjoining the site to the north and south. The BEDI properties, northwest, west and southwest of Development District 3, all have Phase I reports associated with each property. The Phase I documents indicate all the properties were former landfills. Pipelines adjacent to Del Amo Blvd or on the individual properties could also impact Development District 3 due to their potential for leaking. Phase II activities have been proposed for each of these properties. The Phase II work is for soil and soil-vapor sampling for VOCs, semi-volatile organic compounds, metals, petroleum compounds and methane. The proposed sampling depths are 5 to 20 feet depending

on the property. At this time, it is unclear if the proposed Phase II activities have been completed.

The Dominquez Hills Golf Course (formerly a portion of the BKK Landfill) is located north of Development District 3 and the lead regulatory agency is DTSC. Potentially impacted groundwater from the golf course may have migrated into Development District 3 due to the site's proximity and likely southerly groundwater flow direction.

The former Cal Compact Class II Landfill (Development Districts 1 and 2) is located immediately south of Del Amo Boulevard and is likely downgradient of the subject property. The First Semi-Annual 2005 Groundwater Monitoring Report, the most recent report available, was reviewed. Six groundwater monitoring wells are located either in Del Amo Boulevard, between Main Street and the I-405 overpass, or on the northern perimeter of the former Cal Compact Class II Landfill. Wells GW-1B, GW-1C, GW-2B and GW-2C are screened in the middle portion of the Upper Bellflower Aquitard. Wells MWG-1 and GW-2 are screened in the upper portion of the Middle Bellflower Aquitard. With the exception of monitoring well GW-2, VOCs were detected in the wells described above located nearest to Development District 3.

An initial Phase II investigation was completed for Development District 3 because a prior environmental investigation of the site identified the presence of elevated concentrations of VOCs and methane in subsurface soil vapor, anticipated to be due to the proximity to former landfills. As part of the Phase II investigation, soil vapor samples were collected at 5 feet bgs at 12 locations across the area. No VOCs were identified in the samples collected and analyzed on site by USEPA Method 8260B above the method detection limit. Methane was detected in five samples at concentrations only at or slightly above the detection limit. As a confirmatory measure, two samples were collected in Summa canisters and submitted for off-site analysis by USEPA Method TO-15. Thirteen VOCs and methane were identified at very low concentrations in these samples.

In addition, five shallow soil samples were analyzed for the possible presence of metals, pesticides, polychlorinated biphenyls (PCBs) and semi-volatile organic compounds. The detected metals concentrations were within general background levels with the possible exception of barium. Only 4,4' DDE, a pesticide, was detected in one soil sample. A screening-level risk evaluation of these data indicates that there are likely no unacceptable risks associated with either the barium or 4,4'DDE or the low levels of VOCs either individually or on a combined basis.

The soil-vapor survey findings of this initial Phase II investigation are different from the results of the initial soil vapor survey conducted in 1990. However, the consistency of the results coupled with the independent confirmation of soil vapor results by off-site analysis suggest that the newer data are of good quality. Moreover, it is possible that the 5 foot bgs sampling depth

resulted in the collection of vapor from loose fill soils that could be subject to barometric pumping which can cause constant turnover of soil vapor. It is also possible that a deeper investigation of soil-vapor quality could yield different results. Therefore, additional Phase II activities have been recommended to further evaluate potential vapor intrusion and worker health and safety concerns by completing deeper soil-vapor sampling.

3. ENVIRONMENTAL IMPACTS

a. Methodology

The analysis of Development Districts 1 and 2 and the information provided regarding remediation activities is based on the approved RAPs for the landfill site.

The analysis of Development District 3 is based on existing studies. A draft Phase I and limited Phase II investigation were completed to evaluate potential environmental concerns related to proposed development within this portion of the Project site. The Phase II investigation was performed as a reconnaissance level survey to evaluate environmental conditions due to the close proximity of several landfills and past evidence of VOCs and methane in subsurface soil vapor.

b. Thresholds of Significance

The Project would result in a significant impact with regard to hazards and hazardous materials if the Project would expose people or structures to substantial risk resulting from the release of a hazardous material, or from exposure to a health hazard, in excess of regulatory standards.

c. Project Design Features

The RAP for the Upper Operable Unit was prepared during the time of the proposed commercial and industrial Metro 2000 development and assumed no residential development. The proposed Project would include elevated residential development on a podium deck with open-air parking below living spaces. In addition, elevated residential development would include multiple layers of physical protection for occupants. The primary layers of protection include:

- the landfill gas collection system which will be operated and monitored 24-hours per day, seven days per week;

- the primary impermeable membrane featured within the landfill cap;
- the passive gas venting system below the grade-level foundation that rests on piles;
- an automated methane gas detection system which would be monitored on a regular basis;
- the secondary membrane which would be attached to the bottom of the grade-level foundation;
- the ground-level open-air parking level; and
- the building ventilation systems.

At a conceptual level, DTSC has indicated that elevated residential use is appropriate as there is no potential for direct contact with surface soil in that there are no backyards or garden areas and the potential for vapor intrusion is mitigated by the presence of open space below living spaces. (See Appendix E for a copy of letter from DTSC) DTSC's indication that residential development within Development District No. 1 is appropriate at a conceptual level was based upon:

- age and character of the landfill;
- analysis of conceptual design and construction quality assurance details for the landfill cap provided by the Applicant;
- the consideration that data indicate that the landfill gas occurrence in this portion of the landfill is less than in other areas of the landfill;
- the conceptual refinements to the landfill gas collection and treatment system;
- the detailed concepts for a building protection system;
- the conceptual podium design which features elevated residential units;
- the redundancies and multiple layers of protection that are anticipated in conceptual integrated design for the landfill cap, landfill gas collection and treatment systems, and the building protection systems;
- the fact that a post-remediation risk assessment (including confirmation sampling) will be performed to ensure that systems that were designed to be protective of human health and the environment indeed are after construction and a period of operation;

- the ability to certify that all remedial/protection/monitoring systems are fully operational and performing as designed prior to providing its approval for building occupancy;

- the conceptual gas monitoring and detection systems;

- the conceptual long-term operation and maintenance program;

- DTSC's continued involvement with review and approval before any alterations of the remedial systems; and

- the institutional controls that will be reviewed and approved by DTSC prior to formal approval.

Finally, DTSC will require detailed plans in order to make a final determination that elevated residential use is protective of human health and safety. As stated above, following construction and a sufficient period of operation of the remedial systems, DTSC will:

- evaluate remedial system performance data collected by the Applicant;

- evaluate confirmation sampling of media (soil and air);

- evaluate a post-remediation risk assessment prepared by the Applicant; and

- when all are sufficient and acceptable to DTSC, will certify that the systems are performing as designed and intended.

DTSC's certification will be one of the necessary requirements for the City to issue any Certificate of Occupancy for buildings within the development. Following certification by the DTSC, 5-year reviews of all remediation systems will also be completed to ensure long-term protection of human health and the environment.

The Applicant is proposing to implement the RAP for the Upper OU, with refinements in certain technologies based on improvements in science and engineering since 1995, but with the same performance goals of controlling exposure pathways and migration. (The proposed refinements are provided in detail in a document that was submitted to DTSC and is provided in Appendix E of this EIR.) With regard to the primary membrane of the landfill cap, the Applicant proposes to use a Linear Low Density Polyethylene (LLDPE) membrane rather than a clay cap for the waste prism. The 1995 RAP included the traditional clay cap that emerged as the standard prescriptive design in the late 1980s and early 1990s. Since that time, alternative cap materials have been found to be effective. The geomembrane would be used instead of the compacted clay to provide the infiltration barrier function of the landfill cap. The proposed cap

includes strip drains and will be sloped to provide drainage of infiltrated water off the membrane surface. In addition, the membrane provides a more robust barrier that minimizes landfill gas migration to land surfaces.

In addition, alternative designs may be used to enhance gas control and groundwater treatment. The Landfill Gas Extraction and Treatment System would be similar to the system described in the RAP but would be improved by adding both horizontal and vertical wells within the site and not just around the landfill site boundary. The system would be designed to automatically collect condensate and deliver landfill gas to a treatment facility that would include a flare system.

The Applicant may also propose a modification to the groundwater remedy approved in the RAP. The modification, if proposed, would use in-situ bioremediation to reduce the source of contaminants impacting groundwater in the Upper OU. There are a number of studies that need to be conducted to determine whether in-situ bioremediation would be an effective alternative or a supplement to extraction and treatment of groundwater, as required in the RAP. If the studies indicate in-situ bioremediation is likely to be effective, the Applicant would seek DTSC approval of the modification, as required under applicable regulations.

Changes in the design of the remediation system would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment. Specific details on the remedial activities that would be implemented on the landfill site would be provided in the RD. The RD would be prepared and submitted to DTSC prior to initiating any remedial actions. In addition, DTSC would formally approve any change in RAP requirements, as required under applicable regulations.

d. Project Impacts

(1) Development Districts 1 and 2 (Former Landfill Site)

The RAP for the Upper OU was approved by DTSC in 1995 and the RAP for the Lower OU was approved by DTSC in 2005. DTSC concurred with the conclusions in the Metro 2000 EIR regarding potential impacts resulting from the construction of the landfill cap. DTSC conducted a separate environmental analysis to analyze other components of the RAP, i.e., the landfill gas collection and treatment system and the groundwater treatment system. DTSC prepared a Negative Declaration for the RAP for the Lower OU. These analyses concluded that implementation of the RAPs would result in less than significant impacts with regard to all environmental issues of concern. Therefore, the implementation of the RAPs does not require further review under CEQA and, as such, is not subject to analysis in this EIR.

With regard to the implementation of the Upper OU RAP, as indicated above, the Applicant proposes certain refinements, including use of a synthetic membrane cap rather than a clay cap to cover the on-site waste prism, enhancement of gas control and in-situ bioremediation to reduce the source of contaminants impacting groundwater in the Upper OU. Any changes in the design of the remediation would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment. Therefore, no greater impacts would result from the proposed modifications to the approved RAP The potential air quality and noise impacts during construction of both the approved RAPs as well as the proposed modifications are analyzed in Section IV.G, Air Quality and Section IV.H, Noise, of this EIR.

Furthermore, DTSC is responsible for evaluating health and safety issues related to the proposed residential development on Development Sites 1 and 2. DTSC provided a letter dated February 9, 2005 indicating the "DTSC believes the concepts presented for the proposed development are appropriate at a conceptual level and could be protective of human health and safety, however, as is common for all projects under DTSC's authority, more detailed plans are necessary before DTSC can make such a final determination." No residential development would occur until DTSC formally concludes that the development would be implemented in a manner that is protective of human health and the environment.

With regard to existing on-site oil and water wells, the approved RAP for the Upper OU required additional investigation to locate the three wells and to address issues such as the risk of downward migration of contaminants into the lower aquifers. As a result, DTSC would review and approve additional work in compliance with the RAP relative to the wells.

(2) Development District 3

Based on the draft Phase I and preliminary Phase II conducted for the 11-acre portion of the Project site, no specific remediation efforts would be implemented. However, additional Phase II activities are recommended to further evaluate potential vapor intrusion and worker health and safety concerns by completing deeper soil-vapor sampling. In addition, Development Site 3 would be subject to the provisions of California Code of Regulations, Title 27, Section 21190 that govern development activities within 1,000 feet of a closed landfill. These provisions include such measures as the installation of vapor mitigation and monitoring devices. As the construction and operation of the proposed land uses within Development Site 3 would be in compliance with all applicable regulations, potential risks would be reduced to a less than significant level.

4. MITIGATION MEASURES

The certified CEQA documentation for the Upper OU RAP includes mitigation measures to reduce the potential construction impacts associated with the implementation of the clay cap.[44] The mitigation measures set forth in that document are in the environmental areas of earth, air quality, surface and groundwater, natural resources (use of nonrenewable resources), risk of upset, and energy. Section 7.4 of the Final RAP for the Upper OU requires that certain mitigation measures be performed to minimize potential impacts related to remedial activities. (See Appendix E for a copy of the Upper OU RAP.)

The following mitigation measures are required to ensure that any revisions to the RAP are approved by DTSC and that access to the necessary areas for monitoring programs required in the RAPs would be provided.

Mitigation Measure D-1: To the extent the Applicant desires to refine or modify requirements in the RAP, the Applicant shall provide documentation to the City indicating DTSC approval of such refinements or modifications.

Mitigation Measure D-2: The Applicant shall provide documentation to the City indicating DTSC shall permit the proposed residential uses in Development District 1 prior to issuance of any permits for such residential development in Development Districts 1.

Mitigation Measure D-3: The Applicant shall provide documentation to the City indicating both on- and off-site risks associated with RAP construction have been evaluated to the satisfaction of the DTSC, and at a minimum, perimeter air monitoring shall be completed for dust, particulates, and constituents determined to be Constituents of Concern (COCs).

Mitigation Measure D-4: The Applicant shall provide to the City, documentation indicating that (1) a post remediation risk assessment has been prepared by the Applicant and approved by DTSC; and (2) DTSC has certified that the remedial systems are properly functioning prior to issuance of a Certificate of Occupancy.

Mitigation Measure D-5: The Applicant shall provide documentation to the City indicating that applicable remedial systems and monitoring plans, including the location of the flare and treatment facility are in accordance with applicable SCAQMD regulations.

[44] *The Negative Declaration was prepared for the construction, operation and maintenance of the proposed landfill gas collection and treatment system and the groundwater treatment system.*

5. CUMULATIVE IMPACTS

Section III, Environmental Setting, of this EIR identifies 36 related projects within the Project study area. The analysis contained in this section focuses on the implementation of the approved RAPs for the Upper OU and the Lower OU. The purpose of the RAPs is to provide protection for human health and the environment. Development of the 11-acre portion of the Project site would occur in compliance with applicable regulations regarding hazardous materials. All new development would occur in compliance with applicable regulations relative to hazardous materials. Therefore, the Project would not result in a significant impact with regard to hazards. All of the related projects would be required to comply with applicable regulations with regard to hazardous materials. Therefore, no significant cumulative hazards or hazardous materials impacts are anticipated.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

While the Project would not result in a significant impact with regard to hazards and hazardous materials, mitigation measures are provided to ensure that any revisions to the RAP are approved by DTSC.

IV. ENVIRONMENTAL IMPACT ANALYSIS
E. GEOLOGY AND SOILS

1. INTRODUCTION

This section addresses the potential impacts of the Project relative to geologic and seismic hazards. The following analysis describes the regulatory setting, regional and local earthquake faults, existing physical features of the Project site, and the context of the Project in relation to soil stability and geologic risk. The evaluation of soils and geologic conditions on the Project site is based on the following reports:

- Western Laboratories, Geotechnical Engineering Report for Proposed Commercial Development and Northeast Corner of Main Street and Del Amo Boulevard, December 24, 1996;
- Brown & Root Environmental – Geotechnical Investigation, September 5, 1996;
- Law/Crandall, Report of Geotechnical Investigation and Pile Loading Testing for L.A. Metromall, September 5, 1996;
- Converse Environmental West, Preliminary Environmental Site Assessment for 10-acre Parcel at Main and Del Amo, Carson, California, February 26, 1990; and
- NorCal Engineering, Soils Investigation for Proposed Industrial Development at Main Street and Del Amo, 1986.

These documents are on file at the City of Carson Community Development Department, located in the Carson City Hall, 701 East Carson Street.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) State of California Alquist-Priolo Earthquake Fault Zones

The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act (1972) is to prevent construction of buildings used for human occupancy on the surface trace of active faults.

The Alquist-Priolo Act requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps to assist cities and counties in planning, zoning, and building regulation functions. Local agencies must enforce the Alquist-Priolo Act in the development permit process, where applicable, and may be more restrictive than state law requires. According to the Alquist-Priolo Act, before a project can be permitted, cities and counties shall require a geologic investigation, prepared by a licensed geologist, to demonstrate buildings would not be constructed across active faults. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back, a minimum 50-feet from the fault trace.

(2) State of California Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (1990) addresses the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events. Under the Seismic Hazards Mapping Act, the State Geologist is required to delineate "seismic hazard zones." Cities and counties must regulate certain development projects within the zones until the geologic and soil conditions of the development site are investigated and appropriate mitigation measures, if any, are incorporated into development plans. State publications supporting the requirements of the Seismic Hazards Mapping Act include the CDMG SP 117, *Guidelines for Evaluating and Mitigating Seismic Hazards in California* and CDMG SP 118, *Recommended Criteria for Delineating Seismic Hazard Zones in California.* The objectives of SP 117 are to assist in the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations and to promote uniform and effective statewide implementation of the evaluation and mitigation elements of the Seismic Hazards Mapping Act. SP 118 implements the requirements of the Seismic Hazards Mapping Act in the production of Probabilistic Seismic Hazard Maps for the state. SP 118 also establishes criteria for the determination of landslide hazard zones and liquefaction hazard zones. Seismic evaluation and Hazard Maps have been prepared for the Newport-Inglewood fault system, Oak Ridge system, Palos Verdes Fault, Raymond Fault, Santa Monica fault system, Sierra Madre fault system (San Fernando Fault), and the Los Angeles Blind Thrust Faults, including the Compton, Elysian Park, Northridge, and Puente Hills faults. State Seismic Hazards Maps identify portions of the City of Carson, including the Project site as an area of high liquefaction potential, based on soil type, ground water tables, and the high seismicity of the area.

(3) State of California Department of Toxic Substances Control Remedial Action Plan

The State of California Department of Toxic Substances Control (DTSC) prepared a Final Remedial Action Plan (RAP) (October 1995) to address contamination in soils and groundwater on the former landfill site in Development Districts 1 and 2. Pertinent to soil stability, the RAP outlines a procedure for the capping of the waste layers and the overlaying and

compaction of fill soils. Due to the presence of the capped waste and need to maintain the integrity of the proposed cap, the RAP establishes specific criteria for site development. Criteria for the approved RAP soil cover depths are addressed in Section IV.D, Hazards. The RAP anticipates that building foundations would use a pile system, with individual piles driven to the bearing soil beneath the waste and that this design would support buildings over the landfill refuse. The 1995 RAP also specifies that the piles would incorporate a sealable sleeve between the piles and the refuse liner and provide controlled slacks to allow for settlement.

(4) City of Carson General Plan Seismic Safety and Safety Element (2004)

The City's General Plan Safety Element identifies a range of hazards, including geologic hazards that may affect the City of Carson. According to the Safety Element, the geologic and seismic hazards appearing to pose the greatest threat to the City include differential settlement[45]soil instability due to shallow or perched groundwater, shrink/swell potential in native clay soils, and ground shaking due to active and potentially active fault zones throughout the region. The Safety Element identifies the Newport-Inglewood Fault Zone, the Avalon-Compton Fault Zone, the Palos Verdes Fault Zone, the Whittier Fault Zone, and the Santa Monica Fault Zone as the active faults most capable of producing earthquakes that could affect the City. The Safety Element also addresses seismically induced ground failure, including liquefaction, ground lurching, and ground cracking and presents an exhibit of the areas in the City which have shown a historical occurrence of liquefaction, or local geological, geotechnical and groundwater conditions having the potential for permanent ground displacement.

The objective of the Safety Element is the reduction of death, injury, property damage, economic suffering, and social dislocation that would result from ground failure or earthquake damage. Applicable policies include the following:

SAF-1.1 Continue to require all new development to comply with the most recent City Building Code seismic design standards.

SAF. 1.2. Work with the City's Public Information Office and Public Safety Division to:

- Educate residents in earthquake safety at home,
- Educate public in self-sufficiency practices necessary after a major earthquake (e.g., alternative water sources, food storage, first aid, family disaster plans), and

[45] *As used in the context of a geotechnical evaluation, differential settlement is the irregular sinking of the ground surface under any single structure. Such settlement has the potential to result in foundation damage.*

- Identify locations where information is available to the public for planning self-sufficiency.

(5) City of Carson Municipal Code

The City of Carson Municipal Code incorporates by reference the building requirements of the Los Angeles County Code in relation to grading, soils, and geologic issues. Building Code (Title 26) Section 110.2, addresses geotechnical hazards and states that a building or grading permit shall be issued when the City's Building Official finds that a hazardous geological condition, such as potential settlement, is not present or would not be accelerated by development. An engineering geology and/or soils engineering report(s) must be prepared that indicates to the satisfaction of the City's Building Official that the hazard would be eliminated prior to the use or occupancy of the land or structures by modification of topography, reduction of subsurface water, buttressing, a combination of these methods, or by other means.

Section 110.3 of the City's Building Code prohibits the construction of buildings or structures within 1,000 feet of fills containing rubbish or other decomposable material unless the fill is isolated by approved natural or artificial protective systems or unless designed according to the recommendations contained in a report prepared by a licensed civil engineer. In addition to concerns regarding decomposition gases, this Code section requires that buildings or structures shall not be constructed on fills containing rubbish or other decomposable material unless provision is made to prevent damage to structures, floors, underground piping and utilities due to uneven settlement of the fill. Engineering geology or soils engineering reports required under Section 111 of the City's Building Code, shall contain a finding regarding the safety of the building site for the proposed structure against hazard from landslide, settlement or slippage and a finding regarding the effect that the proposed building or grading would have on the geotechnical stability of property outside of the building site. Any engineering geology report shall be prepared by a certified engineering geologist licensed by the State of California. Any soils engineering report shall be prepared by a civil engineer, registered in the State of California, experienced in the field of soil mechanics, such as a soils engineer.

Sections 112 and 113 of the City's Building Code incorporates earthquake fault zone maps and regulates the construction of structures in the proximity of earthquake zones. Chapter 16 of the Building Code establishes foundation and building structural standards that are designed to protect development in hazardous areas, including fault precaution zones and liquefaction susceptibility zones established by the State of California.

Under Chapter 33 of the Building Code, a project's soils engineering report shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and an opinion on the adequacy of the site for its proposed use

based on soils engineering factors, including the stability of slopes. Recommendations included in the reports and approved by the City's Building Official shall be incorporated into the Project's grading plan or specifications. The engineering geology report is required to include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and opinion on the appropriateness of the development based on geologic factors.

b. Physical Environment

(1) Soils and Geology Profile

The Project site is located in the Torrance Plain within the West Coast Basin, a southern portion of the greater Los Angeles Basin. The Torrance Plain is an older marine plain consisting mainly of recent alluvium and the upper Pleistocene Lakewood Formation, which overlies the lower Pleistocene-era San Pedro Formation. The recent alluvium consists primarily of stream deposits inter-bedded with fine-grained estuary/bay deposits. Deposition has been controlled by tectonic activity, geomorphic processes, changes in climate, and worldwide changes in sea level. In the general area of the Project site, the early Pleistocene age San Pedro Formation underlies the upper Pleistocene deposits. The San Pedro Formation is approximately 550 feet thick beneath the Project site and consists of interlayered sand, silt, and clay.[46]

(a) Development Districts 1 and 2

Development Districts 1 and 2 previously served as a Class II landfill, in which waste was placed in trenched cells. The thickness of the waste increases rapidly from very shallow (approximately 1.75 feet) feet adjacent to the haul roads to more than 60 feet in the interior of the waste cells. The estimated volume of solid waste in the landfill is 6,260,000 cubic yards.[47] There is no waste beneath the haul roads. Little or no waste underlies the existing dirt road bordering the site immediately north of the Torrance Lateral Channel. Borings conducted during prior geotechnical evaluations of the site determined that the refuse ranges from between 29.5 and 54.25 feet thick (borings 5, 6, 12, and 16). The average thickness of the waste is approximately 40 feet in depth.[48] A soil cover, consisting predominantly of fine-grained silt and

[46] *Brown & Root Environmental Geotechnical Report for LA Metromall (September 5, 1996), reference based on prior California Department of Public Works geology report (1960).*

[47] *The Los Angeles County Engineer had calculated that the landfill had a capacity of less than 7 million cubic yards.*

[48] *Brown & Root Environmental, Geotechnical Report for LA Metromall (September 5, 1996).*

clay, with varying minor amounts of sand, currently overlies the compacted waste area.[49] The soil cover ranges from three to 30 feet in thickness across the site.

The native soils underlying the existing cover soils consist of alluvial deposits of the Lakewood Formation. The site is underlain by late Pleistocene age deposits that are divided litohologically into an upper portion, consisting of a semiperched zone and layers of impermeable silt and clay and a lower portion consisting of coarser grained materials that form an aquifer designated as the "200-foot sand." In the vicinity of the Development Districts 1 and 2, the top of the "200-foot sand" is found at an elevation of approximately 90 feet below mean sea level (MSL).[50] Deposits encountered in borings consist of sand, silty sand, sandy silt, with interlayering of clayey silt and silty clay between 57 feet and 70 feet below MSL. At greater than 70 feet below MSL, predominantly fine grained deposits of silt, clayey silt, and sandy silt were encountered.[51]

(b) Development District 3

Development District 3 is underlain by the Lakewood Formation, which contains soils with adequate strength to support building foundations. This formation is concealed by overlying alluvium and fill. This parcel also contains a variety of imported fill soils that have been randomly placed over the central portion of the site. A portion of the stockpiled material contains large amounts of broken concrete and asphalt pavement, with evidence of minor deleterious debris. Geotechnical excavations conducted in 1986, ranged from 4.0 to 21.0 feet in depth. Excavations found disturbed top soil and fill soils to depths ranging from 0.5 to 15.0 feet. The depth of the fill soils is exclusive of stockpiled areas, which were inaccessible. Encountered fill soils contained minor debris and gravel. Although the majority of the Development District 3 is relatively level, the deeper portion of fill soils appeared to be in the central portion of the site, which was previously a low area. This area was filled in the past to gain access to the easterly portion of the property.[52]

In 1996 field studies, fill soils were found to be shallower, with the majority of the excavations containing fill soils ranging in depth from 1.0 to 6.5 feet below ground surface. The fill soils are classified as clays with concrete and asphalt fragments; sands, with concrete and asphalt fragments; and sandy clays with gravel. The native soils, underlying the fill soils are

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[49] *Ibid.*

[50] *Brown & Root, Op. Cit., reference is based on prior California Department of Water Resources report (1957).*

[51] *Brown & Root, Op. Cit., reference is based on California Department of Public Works report (1960).*

[52] *NorCal Engineering, Soils Investigation for Northeast Corner of Main Street and Del Amo Boulevard, page 3 (1986).*

classified as medium dense to very dense sand and silts.[53] Expansion Index Tests, performed on undisturbed native soils, determined the upper soils to have low to medium expansion potential. However, due to the unconsolidated nature and debris content of overlying fill soils, geotechnical investigators have concluded that the fill and low density natural soils are not suitable to provide support for slabs on grade, pavement, and building foundations, and must be removed and re-compacted prior to development.[54]

(2) Geological Hazards

(a) Earthquake Faults

A notable amount of seismic activity, associated with the Pacific and North American plates contact zone, is produced in Southern California. In the Los Angeles Basin numerous faults accommodate the complex tectonic stresses caused by the convergence of these plates. Active faults are of the greatest concern for earthquake generation and fault rupture potential since they represent documented Holocene age fault movement and are clearly associated with historic seismicity. As shown in Figure 31 on page 318, five major faults or zones present a seismic hazard within the region. These include the Newport-Inglewood fault zone, the San Andreas fault zone; Palos Verdes fault zone; Whittier fault zone (Elysian Park structure), and the Santa Monica fault zone.

The Newport-Inglewood fault zone can be traced at the surface by geomorphically young hills and mesas, including Baldwin Hills, Dominguez Hills, Signal Hill, Huntington Beach Mesa, and Newport Mesa. An evaluation of 39 small earthquakes (1977 to 1985) indicates faulting along the north segment (north of Dominguez Hills) and along the south segment (south of Dominguez Hills to Newport Beach). Based on historic earthquakes, the fault zone is considered active. The Newport-Inglewood fault zone, which is located approximately 2.2 miles northeast of the Project site is considered capable of generating a maximum earthquake with a magnitude 7.0 on the Richter scale. Fault segments associated with the Newport-Inglewood fault zone include the Charnock Fault, located approximately 10.5 miles to the northwest of the Project site; the Overland Avenue Fault, located approximately 11.2 miles to the northwest of the Project site; and the Norwalk fault, located approximately 12 miles to the northeast of the Project site. The Cherry Hill Fault is located on the eastern edge of the City in the Dominguez Gap, to the north of Del Amo Boulevard. The Avalon-Compton fault has been identified by the California Department of Mines and Geology (CDMG) as the only active fault located in the City of

[53] *Western Laboratories Geotechnical Engineering, page 5 (December 24, 1996).*

[54] *NorCal Engineering, Soils Investigation for Northeast Corner of Main Street and Del Amo Boulevard, page 5 (1986) and [54] Western Laboratories Geotechnical Engineering, page 8 (December 24, 1996).*

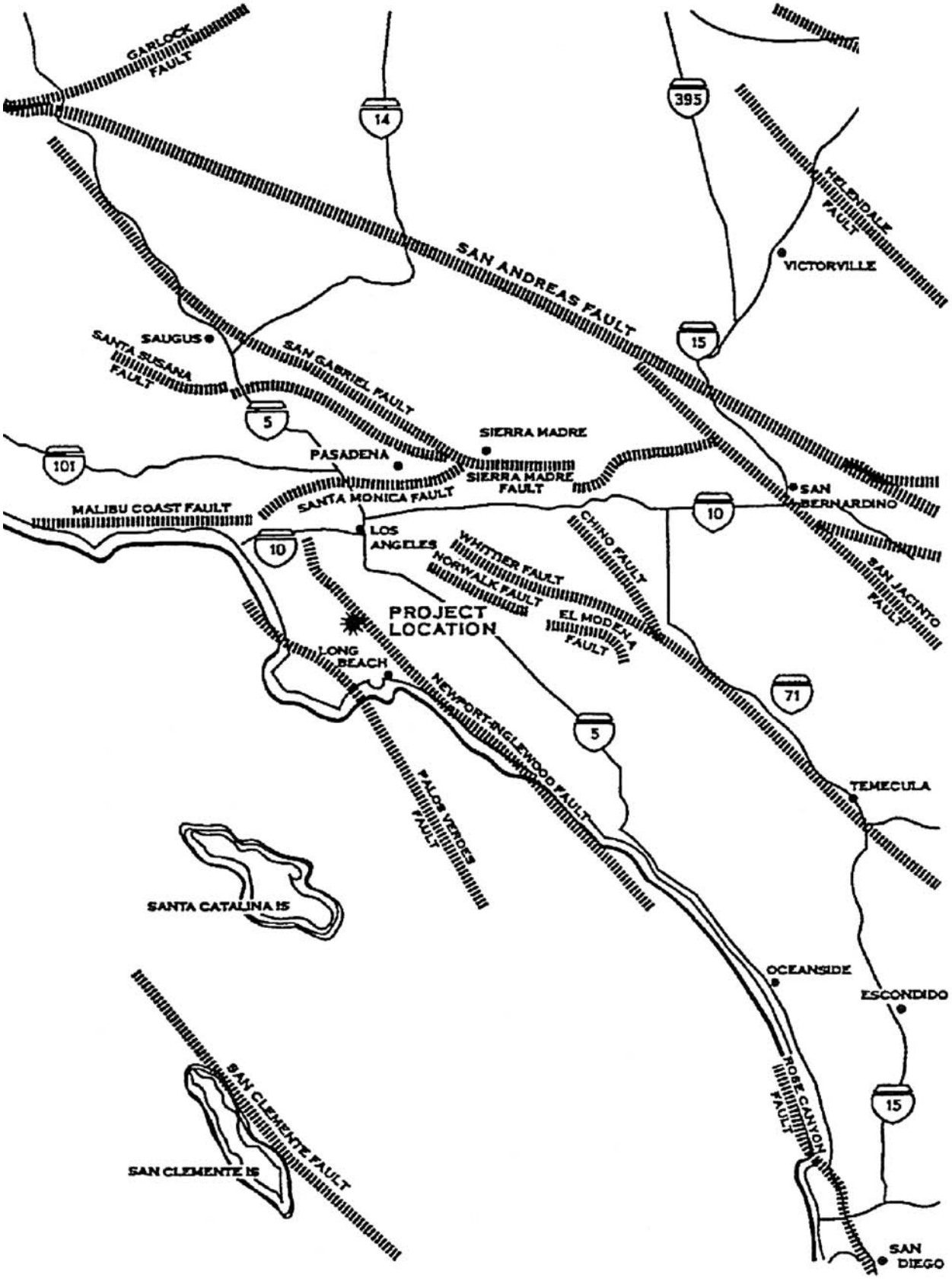

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Figure 31
Regional Fault Map

Source: City of Carson

Carson. The Avalon-Compton Fault is approximately four miles long and is located in the northeast sector of the city, immediately east of Avalon Boulevard and north of the Artesia Freeway. Historically, the Avalon-Compton fault/regional shear zone has moderate to high seismic activity with numerous earthquakes greater than Richter scale magnitude 4.0.[55]

Other regional fault zones include the San Andreas, the Palos Verdes, and the Whittier (Elysian Park Structure). The San Andreas fault zone, located approximately 48 miles to the north of the Project site, is California's most prominent structural feature, trending in a general northwest direction for over 600 miles and is considered capable of generating a maximum credible earthquake of magnitude 8.25 on the Richter scale.[56] The Palos Verdes Fault Zone, located approximately 5.3 miles to the southwest of the Project site, is traceable along the northern front of the Palos Verdes Hills. Offshore data shows an offset of Holocene material, suggesting very recent movement along the Palos Verdes Fault. The fault is considered capable of generating a maximum credible earthquake of magnitude 6.6 on the Richter scale.[57]

The 1987 Whittier Narrows earthquake (Richter Scale 5.9) occurred on the Elysian Park Structure of the Whittier fault zone. The Whittier Fault zone is located approximately 17.5 miles to the northeast and is considered capable of generating a maximum credible earthquake of magnitude 6.75 on the Richter scale.[58] The Santa Monica fault zone, located approximately 17.2 miles to the north-northwest extends approximately 15 miles through West Los Angeles and is considered capable of generating a maximum credible earthquake of magnitude 6.0 to 7.0.[59] Other nearby active fault zones in the area are the Raymond Fault zone, 19 miles to the north, and the Malibu Coast fault zone, approximately 20 miles to the northwest. The Avalon-Compton structural zone, located approximately 2 miles northeast of the Project site, is the only active fault zone in the City of Carson. Distance to active and potentially active earthquake faults is the same for all three Development Districts.

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[55] *Bein, Frost, and Associates, Dominguez Hills Specific Plan EIR, pages 5.1-4 (September 1995), cited in the City of Carson General Plan Environmental Impact Report, page 4.6-5 (October 10, 2002).*

[56] *Lacopi (1977) and Greensfelder (1974) cited in the City of Carson General Plan Environmental Impact Report, page 4.6-5 (October 10, 2002).*

[57] *Darrow and Fisher (1983) cited in the City of Carson General Plan Environmental Impact Report, page 4.6-5 (October 10, 2002).*

[58] *Lamar (1970) cited in the City of Carson General Plan Environmental Impact Report, page 4.6-5 (October 10, 2002).*

[59] *City of Carson General Plan Environmental Impact Report, page 4.6-6 (October 10, 2002).*

(b) Potential Ground Shaking

The South Bay area and the City of Carson are regarded as one of the most severe shock areas of the Los Angeles Basin due to the unstable sub-base of sandy soil. The sandy sub-base is capable of producing a rolling motion that causes damage over widespread areas and may hinder the detection of faults.[60] Potential ground shaking at the Project site varies depending on the distance of the seismic source to the site and the duration of strong vibratory motion. In general, long-period seismic waves, characteristic of earthquakes that occur approximately nine miles or more from the area of concern may cause foundation damage to large structures including commercial buildings. Short-period waves, however, are generally very distinct near the epicenter of moderate and high-magnitude events and may cause damage to any structures within close proximity. Detectable ground shaking at the Project site could be caused by any of the active or potentially active faults shown in Figure 31 on page 318. The Newport-Inglewood, Whittier, Santa Monica, and Palos Verdes faults are the active faults most likely to cause high ground acceleration in the City, although the San Andreas Fault has the highest probability of generating a maximum credible earthquake in the next 30 years. The Modified Mercalli (MM) Scale, shown in Table 30 on page 321, describes the empirical effects of ground shaking at increasing earthquake intensities. An earthquake with a projected magnitude of 7.0 to 7.9 is thought to be capable of seismic intensity values of about VIII to XI, in which damage to structures and underground pipes would occur. The bracketed duration of strong ground shaking, shown in Table 31 on page 323, is defined as the time interval between the first and last peaks of strong ground motion, when the acceleration of the ground due to seismic waves exceeds 0.50 Average Peak Acceleration. For example, strong ground shaking on a 6.5 magnitude earthquake within 10 kilometers (6.2 miles) from the Project site would last for 19 seconds. The duration and intensity of ground shaking would be similar in all three Development Districts.

(c) Surface Rupture

Surface rupture along a causative fault trace is associated with the primary movement that produced the seismic event. Offset on a fault intersecting the ground can create a discrete step or fault scarp if the fault slip occurs on a single plane or within a narrow fault zone. All development spanning an escarpment or fracture would be subject to foundation and other structural damage. As indicated previously, the Alquist-Priolo Earthquake Fault Zoning Act, which enforces a 50-foot setback zone, regulates development near active faults to mitigate the likelihood of surface rupture on a given fault. The Alquist-Priolo Act also requires additional geological study within an active fault zone to determine the location and extent of faults. The

[60] *Finding is based on California Institute of Technology Seismological Laboratory testing, cited in the 1981 City of Carson General Plan, Seismic Safety Element, page 25.*

Table 30

Modified Mercalli Intensity Scale

MMI	Effects	Average Peak Acceleration[a]	
I	Not felt except by a very few, and only under special circumstances.	Less than 0.03	Below 3.0 magnitude on Richter Scale
II	Felt by persons at rest and on upper floors	Less than 0.03	3.0-3.9 magnitude on Richter Scale
III	Felt indoors. Hanging objects swing slightly. Vibration feels like passing of light trucks. May not be recognized as an earthquake.	Less than 0.03	4.0-4.9 magnitude on Richter Scale
IV	Hanging objects swing noticeably. Vibration like passing of heavy trucks. Standing automobiles rock. Windows, dishes, doors rattle. Glasses clink, Wooden walls and frames creak	0.03 and below	4.0-4.9 magnitude on Richter Scale
V	Felt outdoors by most people. Sleepers awakened. Liquids may spill. Small unstable objects displaced. Doors swing, close, open. Pictures move. Some breakage of plaster.	0.03-0.08	4.0-5.0 magnitude on Richter Scale
VI	Felt by all. Persons walk unsteadily. Windows, dishes, glassware broken. Objects, books, etc. fall off shelves; pictures fall off walls. Furniture moved or overturned. Weak plaster and masonry cracked. Small bells ring (church, school). Trees, bushes shaken visibly	0.08-0.15	5.0-5.9 magnitude on Richter Scale
VII	Difficult to stand. Noticed by drivers of automobiles. Hanging objects shake. Furniture broken. Weak chimneys broken at roofline. Fall of plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments. Waves on ponds; water turbid with mud. Small slides and caving in along sand and gravel banks. Large bells ring. Concrete irrigation ditches damaged.	0.15-0.25	6.0-6.9 magnitude on Richter Scale
VIII	Steering of automobiles affected. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory stacks, monuments, towers, elevated tanks. Frame houses moved on foundations if not bolted down; loose panel walls through out. Branches broken from trees. Cracks in wet ground and on steep slopes.	0.25-0.45	6.0-6.9 magnitude on Richter Scale
IX	General panic. Masonry destroyed or heavily damaged. General damage to foundations. Frames cracked. Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground	0.45-0.60	7.0-7.9 magnitude on Richter Scale
X	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.	0.6-0.8	7.0-7.9 magnitude on Richter Scale

Table 30 (Continued)

Modified Mercalli Intensity Scale

MMI	Effects	Average Peak Acceleration[a]	
XI	Rails bent greatly. Underground pipelines completely out of service. Damage severs wood-frame structures, especially near shock centers. Few, if any, masonry structures remain standing. Large, well-built bridges destroyed by the wrecking of supporting piers or pillars.	0.8-0.9	8.0-8.9 magnitude on Richter Scale
XII	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.	0.9 and above	8.0-8.9 magnitude on Richter Scale

[a] *1.0 Average Peak Acceleration is 9.8 meters/second squared.*

Source: USGS Earthquake Hazards Program

Project site is not within a currently established Alquist-Priolo Earthquake Fault Zone for fault rupture hazards. No active or potentially active faults are known to pass directly under the Project site. Since no active earthquake faults intersect any of the three Development Districts, the potential for ground rupture within the three Development Districts is considered low.

(d) Liquefaction

The Project site is largely located within an area designated by the City of Carson General Plan Safety Element and the State of California Seismic Hazard Maps as a CDMG Liquefaction Hazard Zone,[61] as shown in Figure 32 on page 324. This classification is based on the general alluvial soil type, depth of groundwater tables, and the high seismicity of the area. The Newport-Inglewood fault zone is a potential source of ground stress that could result in liquefaction, a process by which water-saturated, loose sands lose strength during moderate or strong seismic shaking, if the ground water table were high enough during an earthquake. Liquefaction potential is greatest where the groundwater level is shallow, and loose, fine sand occur within a depth of about 50 feet or less. Liquefaction potential decreases as grain size and clay and gravel content increase. Further analysis and reporting of liquefaction potential on the Project site would be performed prior to further construction, in accordance with CDMG requirements for any properties located within a designated Liquefaction Hazard Zone.

[61] *City of Carson General Plan EIR, Exhibit 4.6-2 (October 22, 2002), based on State of California Seismic Hazard Zone Maps: Inglewood Quadrangle, Long Beach Quadrangle, Southgate Quadrangle, and Torrance Quadrangle (March 26, 1999); Special Studies Zones, Torrance Quadrangle (July 1, 1986)*

Table 31

Bracketed Duration of Strong Shaking as a Function of Magnitude

Distance to Source	Bracketed Duration (seconds) Magnitude						
	5.5	6.0	6.5	7.0	7.5	8.0	8.5
10 kilometers (6.2 miles)	8	12	19	26	31	34	35
25 kilometers (5.5 miles)	4	9	15	24	28	30	32
50 kilometers (31.0 miles)	2	3	10	22	26	28	29
75 kilometers (46.5 miles)	1	1	5	10	14	16	17
100 kilometers (62.0 miles)	0	0	1	5	5	6	7
125 kilometers (77.5 miles)	0	0	1	1	2	3	3

Source: Brown & Root EIR (September 5, 1996), based on Law/Crandall Geotechnical Investigation (after Bolt, 1973).

However, prior geotechnical evaluations determined that the potential for liquefaction at the Project site would be low within all three Development Districts.[62]

The prior geologic investigation of Development Districts 1 and 2 concluded that native soils consist of dense sand, silty sand, sandy silt, with interlayering of clayey silt and silty clay.[63] Due to the density of the native soils, granular size, and clay mix, the native soils are not considered subject to liquefaction. In addition, geotechnical analysis of soils in Development District 3 concluded that based on consolidation test results and the moisture content of native soils, the potential for liquefaction is estimated to be low in that portion of the Project site.[64]

In Development Districts 1 and 2, however, settlement, caused by densification in the underlying refuse layers, may occur during ground shaking. Uniform settlement beneath a given structure would cause minimal damage; however, because of variations in distribution, density, and confining conditions of the soils, seismic settlement would be generally non-uniform and could cause serious structural damage. Dry and partially saturated soils as well as saturated granular soils are subject to seismically-induced settlement. Generally differential settlement induced by ground failure such as liquefaction, flow slides, and surface ruptures would be much more severe than those caused by densification alone.

[62] *Western Laboratories, Geotechnical Engineering Report for Proposed Commercial Development and Northeast Corner of Main Street and Del Amo Boulevard, December 24, 1996; and Law/Crandall, Report of Geotechnical Investigation and Pile Loading Testing for L.A. Metromall, September 5, 1996*

[63] *Law/Crandall, op. cit. l*

[64] *Western Laboratories, op. cit.*

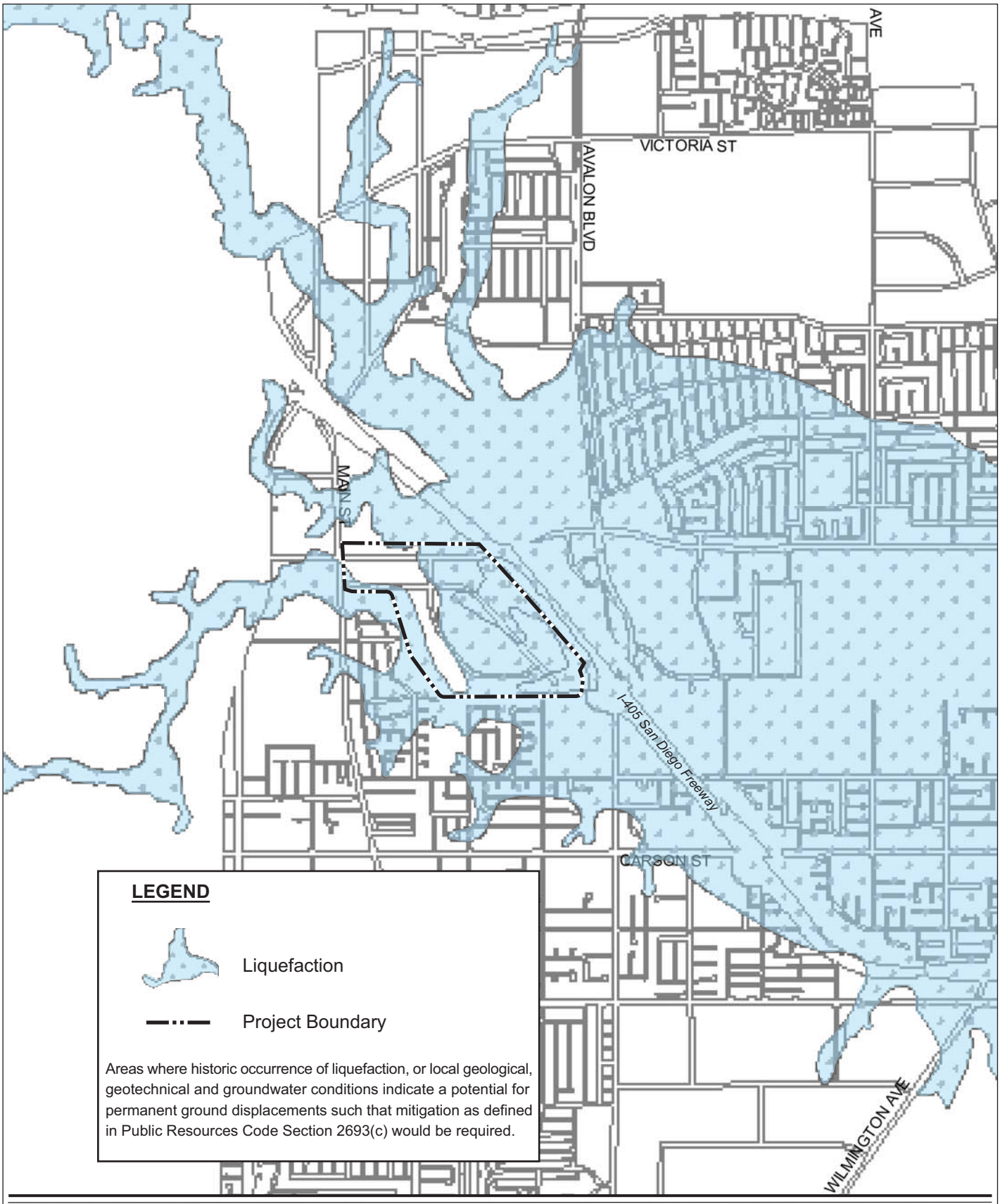

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Figure 32
Liquefaction Hazard Zones

(e) Subsidence

Historical withdrawal of oil has been known to cause subsidence in portions of the Wilmington Oil field, extending along the Newport-Inglewood structural zone between Signal Hill/Port of San Pedro on the south and Redondo Beach on the north. Total subsidence reached a maximum of 29 feet over the crest of the Wilmington anticline, where most of the oil has been withdrawn. The City of Carson 1981 Seismic Safety Element states that subsidence caused by fluid withdrawal has not been a problem in the City, since subsidence in this area would be normally spread over a large area and would not be differential in nature.[65] Water injection to halt the subsidence was started in the late 1950s in the areas of maximum subsidence.[66]

Under existing conditions, local subsidence associated with the former landfill site (Development Districts 1 and 2) could occur, since refuse layers would continue to settle, due to the consistency of the refuse and the decomposition of organic matter. Decomposing refuse would cause substantial down-drag loads on foundations and slabs and, as such, existing fill soils are not suitable for the support of slab foundations. In Development District 3, due to the unconsolidated nature and debris content of overlying fills soils, prior geotechnical investigators have concluded that the upper 0.5 to 8.0 feet of the fill and low density natural soils would be subject to settling and are not suitable to provide support for slabs on grade, pavement, and building foundations.[67]

(f) Slope Stability/Landslides

Landslides tend to occur in loosely consolidated, wet soil and rock on sloping terrain or are associated with bedrock slopes exhibiting unfavorably oriented bedding planes in relation to the slope or other weaknesses. Although stockpiles of fill soils exist in Development Districts 1 and 2,[68] due to the relative absence of steep slopes on the Project site and in the surrounding area, landslide or slope instability is limited to any unprotected slopes among the variety of flood control channels that intersect the area. The Torrance Lateral Flood Control Channel, adjacent to the west and south boundary of the Project site, is concrete-lined and, thus, would not be subject to erosion or slope instability.

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[65] *City of Carson 1981 General Plan, Seismic Safety Element, page 29; based on California Division of Mines and Geology Special Report 114 (1974) .*

[66] *City of Carson General Plan EIR, page 4.6-10.*

[67] *NorCal Engineering, Soils Investigation for Northeast Corner of Main Street and Del Amo Boulevard, page 5 (1986).*

[68] *Brown & Root, Op. Cit.*

3. ENVIRONMENTAL IMPACTS

a. Methodology

In order to determine the potential significance of grading and geologic hazards associated with the development of the proposed Project, existing geological and geotechnical materials describing ground shaking, liquefaction, soil stability, and settlement are reviewed and summarized. The determination of significance is based on the findings of the summarized geological references. The determination of significance is also based on a comparison of site preparation and structural design with existing City and State regulations.

b. Thresholds of Significance

The proposed Project would be considered to have a significant geological impact if:

- The proposed Project would be susceptible to ground shaking, liquefaction, or settlement, which would result in substantial damage to structures or infrastructure and an exposure of people to risk of loss, injury, or death.
- The proposed Project would be in non-compliance with the requirements of the Carson Municipal Code and State regulations set forth in this section.

c. Project Impacts

(1) Project Design Features

The Project's structural design would comply with the design standards set forth in the Carson Municipal Code, which incorporates, by reference, Los Angeles County Code, Title 26, including Chapter 16, Seismic Design Standards. The Project would also comply with Titles 21 and 26 in meeting all applicable building regulations and required evaluation of current soils, project-specific geotechnical, and site-specific geologic conditions for the development of the proposed Project.

(a) Development Districts 1 and 2

Development in Districts 1 and 2 would include approximately 1.94 million square feet of commercial floor area, with a 300-room hotel and 1,300 residential units. Site preparation activities would be integrated with remediation and subsurface construction standards required by the 1995 RAP. Pertinent to soil stability, the 1995 RAP outlines a procedure for the capping of the waste layers and the overlaying and compaction of fill soils. Due to the presence of the

capped waste and need to maintain the integrity of the proposed cap, the RAP establishes specific criteria for site development. According to the RAP, an impervious clay layer would be covered by an 18-inch protective soil layer of suitable imported materials. Notwithstanding, the Applicant is exploring the potential with DTSC to implement a refined cap design wherein the protective cap would be constructed of prepared soil foundation, LLDPE geomembrane, geotextile, composite drainage materials, and select over soils. Under this proposed cap design no importation of clays and soils would be required. While the Applicant is proposing a refined cap design, any alternations in RAP specifications would need to be reviewed and approved by the DTSC.

Project design features include the implementation of driven piles, in lieu of slabs on grade. Piles would be driven through existing fill/refuse soils to approximately 20 feet into underlying native soils. Floor slabs, including parking structures, and residences would be supported by these piles. Proposed on-site structures are anticipated to require over 5,000 piles, with approximately 4,000 pile caps. Pile caps are the connector between the piling and the overlying impermeable cap. Depending on building requirements, 1 to 4 piles per pile cap attachment would be installed. Piles would be concrete and 14 to 16 inches in diameter. Piles would range from 40 to 90 feet in length, with an average length of 55 to 60 feet. Existing roadways are not underlain by fill/refuse soils and, as such, roadway construction in existing alignments would not require the use of foundation pilings.

To further avoid differential settlement at points of entry and the pile-supported structures, a densification program using deep dynamic compaction (DDC) is planned on approximately 60 to 75 acres. DDC areas would be completed in parking lots and non-pile supported areas. Depressions caused by DDC would be filled to create a smooth surface. Localized stockpiles of fill and the approximately 20-foot-high fill slope adjacent to Lenardo Drive, along the eastern property line, would be removed during grading. The grading would result in a nearly level site, with sloping to allow for drainage.

(b) Development District 3

Development in District 3 would include the construction of 250 residential units and 50,000 square feet of commercial floor area. Approximately 11 acres would be graded. Utility easements occupying the graded area would be protected during construction. The development of the parcel would involve grubbing and removal of existing vegetation and other unsuitable materials, the compaction of undocumented and disturbed topsoil, and preparation of concrete slab-on-grade foundations. Alternative foundations could include conventional spread footings, or mat foundations. Partially below-grade (less than 15 feet) parking structures may be considered for select buildings. Grading would be approximately "balanced" and no soil import or export is anticipated. Construction techniques, including compaction, and foundation criteria

would be carried out in accordance with the recommendations of an updated soils and geotechnical evaluation.

(2) Construction

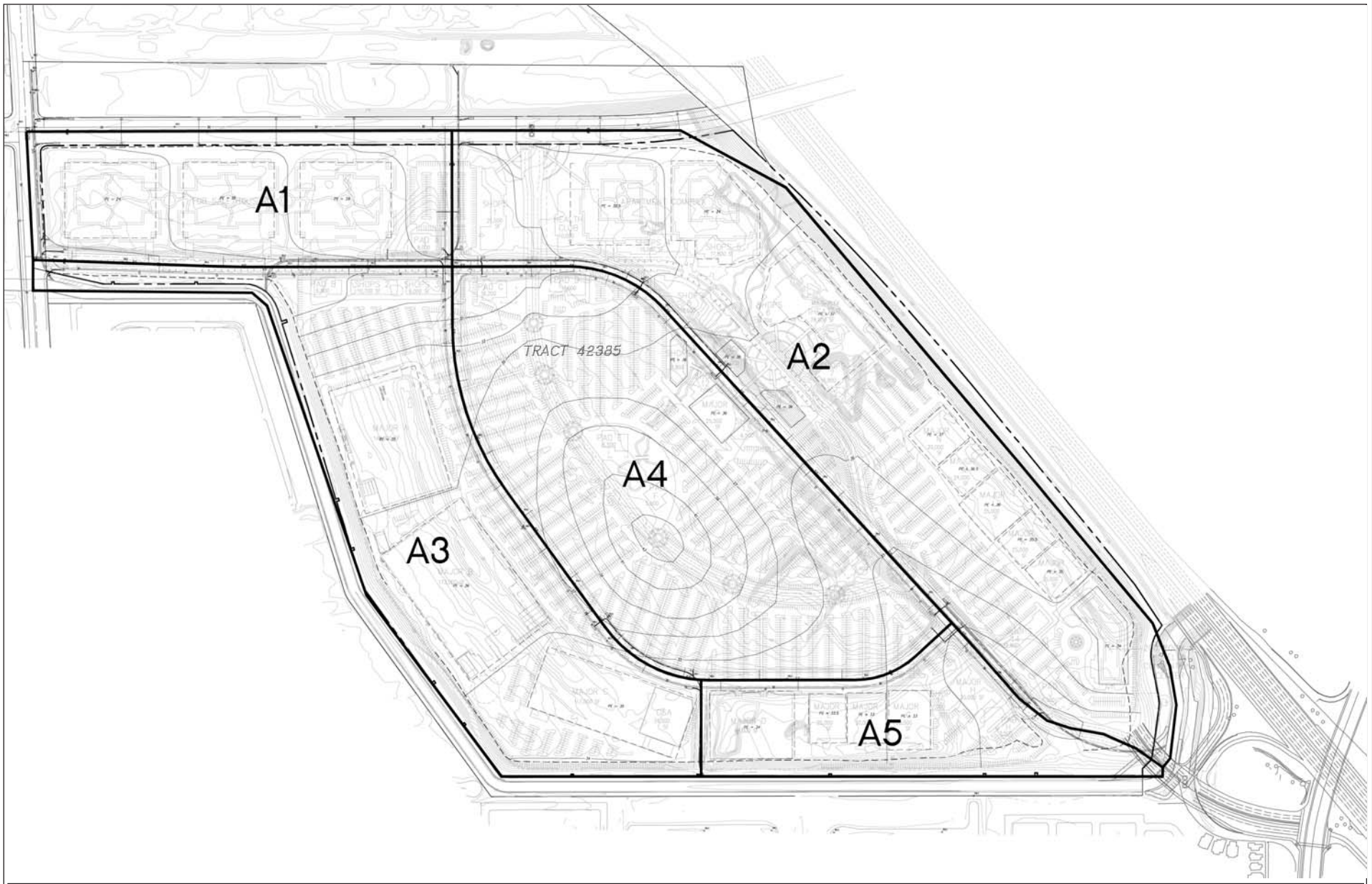
(a) Development Districts 1 and 2

Generalized site preparation would require mass grading, DDC, backfill, capping and pile driving, rough grading and pad construction. Remediation, including construction of the groundwater extraction system and building protection systems would also occur during the site preparation stage. Construction would require the excavation, movement, and on-site storage of approximately 1.5 million cubic yards of soil. Approximately 125 acres would be grubbed (vegetation and debris removal) and would be used for stockpiling of soils during mass grading. Mass grading would be staged and soils would be stockpiled to allow backfill after DDC. The need to fill after DDC would require moving stockpiled soil at least twice. With the grading of approximately 20,000 cubic yards per day, grading activities would require approximately 75 days for completion. The entire site would be compacted to create a landfill cap foundation.

Site preparation would be coordinated with remediation procedures approved by the DTSC. The preliminary sequence for building construction and construction of the remediation system is that building construction would follow earth moving and the installation of the requisite remediation systems. For the purpose of grading, Development Districts 1 and 2 would be divided into 5 areas or cells (A1 to A5) that are generally separated by existing roads. Cells A1 through A5 are illustrated in Figure 33 on page 329. It is anticipated that grading would result in an excess of approximately 420,000 cubic yards of soil. This excess soil would be used to backfill the parking and open areas of the site, an estimated 60 to 75 acres, left by the DDC activities. Cells A2 and A4 would have the majority of the DDC impacted areas. Cell A4, the primary parking area for the site, would be surrounded by retail and residential facilities and would be at the highest elevation at the Project site. This area would slope down at approximately 2 percent to the perimeter buildings and access roads.

The preliminary construction sequence is based on reducing the amount of soil movement and is as follows:

- Phase 1 - Regrade and fill Cell A3 using soil from Cells A1 and A5;
- Phase 2 - Install piling for buildings in Cell A1;
- Phase 3- Install piling for buildings in Cell A5;



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Not to scale

Source: RBF Consulting, 2005

Figure 33
Cell Areas for Grading

- Phase 4 - During the grading of Cell A3-5, prepare western half of Cell A4 for DDC; and

- Phase 5 - Prepare southern half of Cell A2 for DDC.

Building construction would occur cell-by-cell, beginning with Cell A3 and completing with Cell A4. Cell A4 would be used to store and process soils for the Project and would be the last cell to be graded to finished grade. All work would be sequenced so that work would be done in parallel in each cell through the coordination of the mass grading and construction of the remedial systems.

Installation of the landfill cap under the approved 1995 RAP design would require 450,000 cubic yards of imported clay, and 330,000 cubic yards of drainage layer soils, for a total import of 780,000 cubic yards of material. Approximately 2,000 cubic yards would be imported per day, requiring approximately 1.5 years for import activities. Import would require approximately 150 trucks per day, 10 hours per day.[69] With the proposed cap design, a geomembrane system would be used in lieu of an impermeable clay cap for the sealing of underlying waste materials. Thus, the clay and drainage layer soils that would otherwise make up the impermeable clay cap would not need to be imported to the Project site.[70] Since no importation would be required, all graded soils would be balanced on site. Under the proposed RAP design, total grading would be reduced by 780,000 cubic yards and haul traffic associated with the importation of clay and drainage layer soils would be eliminated.

Construction would be conducted according to the requirements of the Municipal Code. The Applicant would submit updated soils engineering and engineering geology report(s), prior to any grading activities or modification of topography. With the enforcement of code requirements, including geotechnical and geological analyses of the site and code-established procedures associated with grading and construction, the Project would be in compliance with the previously described regulatory threshold, listed under Subsection 3.b, Thresholds of Significance. Therefore, the exposure of people or other structures to settlement or other geologic hazards caused by grading and other construction activities would be less than significant.

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[69] *Carson Marketplace Draft Preliminary Development Schedule, Major Schedule Assumptions, Proposed Project (Approved RAP),Remediation Construction, page 2 (June 13, 2005).*

[70] *Carson Marketplace Draft Preliminary Development Schedule, Major Schedule Assumptions, Proposed Project (Proposed RAP),Remediation Construction, page 2 (June 13, 2005).*

(b) Development District 3

Construction of the proposed residential and commercial buildings would require the excavation and re-compaction of the existing 1 to 8 feet of disturbed and undocumented topsoil. The average depth of re-compaction would be approximately 5 feet below the existing ground level. Grading would be approximately "balanced" on site and would require no importation or export of soils. As with Development Districts 1 and 2, construction would be conducted according to the requirements of the Carson Municipal Code. The Applicant would submit a soils engineering and engineering geology report or reports, to the satisfaction of the City Building Official, prior to any grading activities or modification of topography. With the enforcement of code requirements, including updated geotechnical and geological analyses of the site and code-established procedures associated with grading and construction, the Project would be in compliance with the previously described regulatory threshold. Therefore, the exposure of people or other structures to settlement or other geologic hazards caused by grading and other construction activities would be less than significant.

(3) Operation

Development of the Project would expose occupants and visitors to potential ground shaking that would be similar to other locations throughout the Los Angeles Basin and the City of Carson, as a result of an earthquake event at any of several earthquake fault zones in the surrounding area. Geologic hazards in Development Districts 1 and 2 include potential differential settlement due to the densification of refuse in the underlying refuse layers. Total differential settlement over 30 years is anticipated to be 2.75 feet.[71] Exposure to settlement would be reduced to less than significant levels through the implementation of driven pile foundations, in which concrete building pads and floors would be supported by piles driven directly into underlying soils. No building pads or pilings would be supported by the underlying refuse. Exposure to ground shaking would be reduced through the implementation of seismic construction standards set forth in the Carson Municipal Code, Chapter 16, which include design provisions for structures within 15 km (9.3 miles) of an active fault. The Carson Municipal Code would also require the preparation of updated soils, geotechnical, or geology reports and the compliance of the Project with any recommendations developed as part of any such report.

Seismic and geologic hazards in Development District 3 would also be reduced to a less than significant level through the implementation of existing Carson Municipal Code requirements, including preparation and compliance with the recommendation of updated soils, geotechnical, or geology reports. It is anticipated that the removal of debris and the compaction

[71] *Brown & Root, Op. Cit., pages 13 and 14.*

of fill soils, currently stockpiled on the site, would reduce any recognized hazards associated with unstable soils.

With compliance with the most recent State and City Building Code seismic design standards and site evaluation requirements, the risk of exposure of the Project's occupants and structures to ground shaking, liquefaction, differential settlement or other geologic hazards would be less than significant. Although prior geotechnical evaluations concluded that liquefaction potential over the Project site is low, since the Project site is partially located within the CDMG Liquefaction Hazard Zone, the Project would comply with CDMG requirements for analysis and reporting of liquefaction potential.

4. MITIGATION MEASURES

The proposed Project would not result in a significant geology and soils impact. However, the following mitigation measures are recommended to assure compliance with City and State regulations.

Mitigation Measure E-1 In accordance with City of Carson Municipal Code, the Applicant shall comply with site-specific recommendations set forth in engineering geology and geotechnical reports prepared to the satisfaction of the City of Carson Building Official, as follows:

- The engineering geology report shall be prepared and signed by a California Certified Engineering Geologist and the geotechnical report shall be prepared and signed by a California Registered Civil Engineer experienced in the area of geotechnical engineering. Geology and geotechnical reports shall include site-specific studies and analyses for all potential geologic and/or geotechnical hazards. Geotechnical reports shall address the design of pilings, foundations, walls below grade, retaining walls, shoring, subgrade preparation for floor slab support, paving, earthwork methodologies, and dewatering, where applicable.

- Geology and geotechnical reports may be prepared separately or together.

- Where the studies indicate, compensating siting and design features shall be required.

- Laboratory testing of soils shall demonstrate the suitability of underlying native soils to support driven piles to the satisfaction of the City of Carson Building Official.

Mitigation Measure E-2 Due to the classification of portions of the Project site as a liquefaction zone, the Applicant shall demonstrate that liquefaction either poses a sufficiently low hazard to satisfy the defined acceptable risk criteria, in accordance with CDMG Special Bulletin 117, or (b) implement suitable mitigation measures to effectively reduce the hazard to acceptable levels (CCR Title 14, Section 3721). The analysis of liquefaction risk shall be prepared by a registered civil engineer and shall be submitted to the satisfaction of the City Building Official.

Mitigation Measure E-3 Any roads realigned from the existing configuration, or otherwise, located in areas underlain by waste soils shall comply with site-specific recommendations as set forth in engineering, geology and geotechnical reports prepared to the satisfaction of City of Carson building officials.

5. CUMULATIVE IMPACTS

Due to the high seismic activity common to the region, the potential for ground shaking and other geological hazards would be similar throughout the related project study area. Each of the 36 related projects would require case-by-case approvals, including plan check and issuance of building permits. Building permits for the related projects would involve a site-specific evaluation of slope stability, ground rupture, liquefaction, and ground movement for each of the related projects. As required by the City Code and State regulations, appropriate structural design and site preparation requirements would be enforced for each of the related projects. Although the related projects, in combination with the proposed Project, would expose more people and structures to seismic risk or other potentially hazardous geologic conditions, with the implementation of City Code regulations, cumulative impacts related to geologic risk would be less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project would be in compliance with City and State regulations and is not expected to expose people or structures to any unstable geologic conditions or seismically related geologic hazards that would result in substantial damage to structures or infrastructure or exposure of people to risk of loss, injury, or death. Since the Project would not exceed the thresholds of significance relative to City and State regulations, or expose persons to geologic hazards, no unavoidable significant impacts would occur.

IV. ENVIRONMENTAL IMPACT ANALYSIS
F. SURFACE WATER QUALITY

1. INTRODUCTION

This section provides a summary of regulations associated with surface water quality and describes the effects of the proposed Project relative to surface water quality conditions both during and after Project construction. On-site groundwater quality with regard to the 157-acre former landfill site (Development Districts 1 and 2) is currently being addressed by the California Department of Toxic Substances Control (DTSC) and, as such, is analyzed in Section IV.D., Hazards and Hazardous Materials, of this EIR. The evaluation of surface water quality as presented in this section is based on the following reports:

- SCS Engineers, 2004-2005 Annual Report for Storm Water Discharge, June 30, 2005;
- Allwest Geoscience Inc., Storm Water Pollution Prevention Program Annual Report 2003-2004 for the Former Cal Compact Landfill (July 2004);
- Allwest Geoscience Inc., Storm Water Pollution Prevention Program Annual Report 2002-2003 for the Former Cal Compact Landfill (July 2003);
- Brown & Root Environmental, Final Remediation Action Plan – Cal Compact Landfill Upper Operable Unit (October 1995); and
- Robert Bein William Frost & Associates, Conceptual Surface Water Quality Control Program – Los Angeles Metromall Project (August 20, 1993).

These documents are on file in the City of Carson Community Development Department located in the Carson City Hall, 701 East Carson Street.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

Water quality is regulated at the Federal, State, and local levels. The United States Environmental Protection Agency (USEPA), the State Water Resources Control Board

(SWRCB), the Regional Water Quality Control Board (RWQCB), and the City of Carson regulate water quality in the proposed Project area.

(1) Federal Regulations

In 1972, the Federal Water Pollution Control Act, also referred to as the Clean Water Act, was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful, unless a National Pollutant Discharge Elimination System (NPDES) permit authorizes the discharge. The Water Quality Act of 1987 added Section 402(p) to the Clean Water Act to require the United States Environmental Protection Agency (USEPA) to establish specific requirements for storm water discharges. In response to the 1987 amendments to the Clean Water Act, Phase I of the USEPA NPDES Program requires NPDES permits for: (1) municipal separate storm sewer systems generally serving, or located in, incorporated cities with 100,000 or more people (referred to as municipal permits); (2) eleven specific categories of industrial activity (including landfills); and (3) construction activity that disturbs five acres or greater of land.[72] As of March 2003, Phase II of the NPDES Program extends the requirements for NPDES permits to numerous small municipal separate storm sewer systems, construction sites of one to five acres, and industrial facilities owned or operated by small municipal separate storm sewer systems, which were previously exempted from storm water permitting.

Section 402(p) also mandates that municipal permits must effectively prohibit the discharges of non-stormwater to the stormwater system except under certain provisions, and requires controls to reduce pollutants in discharges from the stormwater system to the maximum extent practicable, including the use of Best Management Practices (BMPs), control techniques, and system, design, and engineering methods.[73]

Section 303(d) of the Clean Water Act requires the identification and listing of water quality limited or "impaired" waterbodies where water quality standards and/or receiving water beneficial uses are not met. Once a waterbody is listed as "impaired," total maximum daily loads (TMDLs) must be established for the pollutants or flows causing the impairment (33 U.S.C. §1313[d][c]). The TMDL is a number that represents the capacity a receiving water must absorb of various pollutants from the sum of all point and non-point sources and still meet water quality standards.

Under the Clean Water Act, the EPA establishes maximum contaminant levels for metals, nitrites, radionuclides, volatile organic compounds (VOCs), stable organic compounds (SOCs),

[72] *County of Los Angeles Municipal Stormwater Permit (NPDES No. CAS004001, Order No 01-182).*

[73] *State Water Resources Control Board Fact Sheet for Water Quality Order 99-08-DWQ.*

and disinfection by-products. Chemical contamination of water exceeding established federal standards is considered a health hazard.

(2) State Regulations

(a) State Water Resources Control Board

The Clean Water Act authorizes the USEPA to allow the State of California to serve as the NPDES permitting authority in lieu of the USEPA. The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board (SWRCB), through the Regional Water Quality Control Board (RWQCB), to regulate and control the discharge of pollutants into waters of the State. In 1999, the SWRCB reissued a statewide General Construction Stormwater Permit (General Permit)[74], which is implemented by the RWQCB. The General Permit regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least one acre of total land area.[75] This General Permit authorizes the discharge of stormwater to surface waters from construction activities. The General Permit prohibits the discharge of materials other than stormwater and authorized non-stormwater discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations (CFR) 117.3 or 40 CFR 302.4 unless a separate NPDES Permit has been issued to regulate those discharges. Provisions of the General Permit were modified in September 2000 to require permittees to determine, through surface water sampling and testing, whether the BMPs utilized on a project site are preventing further impairment by sediment in stormwaters discharged directly into waters listed as impaired for sediment or silt, and/or are preventing other pollutants, that are known or should be known by permittees to occur on construction sites and that are not visually detectable in stormwater discharges, from causing or contributing to exceedances of water quality objectives. The NPDES General Construction Permit requires that all developers of land where construction activities will occur over more than one acre implement the following:

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which specifies BMPs that will reduce pollution in stormwater discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards;

- Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation; and

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[74] *Water Quality Order 99-08-DWQ referred to as the "General Permit."*

[75] *State Water Resources Control Board Fact Sheet for Water Quality Order 99-08-DWQ.*

- Perform inspections and maintenance of all BMPs.

In order to obtain coverage under the General Permit, a project applicant must submit a Notice of Intent (NOI) to the SWRCB and prepare a SWPPP. BMPs within the SWPPP typically include minimization of erosion during construction, stabilization of construction areas, sediment control, control of pollutants from construction materials, as well as post-construction stormwater management (e.g., the minimization of impervious surfaces, treatment of stormwater runoff, etc). The SWPPP also must include a discussion of the program to inspect and maintain all BMPs.

(b) California Department of Toxic Substances Control

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) enforces the California Code of Regulations (CCR) Title 22, Division 4.5, which relates to the cleanup and prevention of toxins in soils and water. Sections 64431 through 64444 of Title 22 establish maximum contaminant levels (MCLs) for metals, nitrites, radionuclides, volatile organic compounds (VOCs), stable organic compounds (SOCs), and disinfection by-products. A comparison of state and federal MCLs indicates that the state is either the same or has a much lower maximum (stricter) safety level than the USEPA. Chemical contamination exceeding established state standards are considered a health hazard. The DTSC oversees the cleanup of soils and groundwater, and evaluates soil, water, and air samples taken at contaminated sites. DTSC enforces cleanup of contaminated sites through the implementation of Remedial Action Plans (RAPs), which are regulated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 25356.1 of the California Health and Safety Code. Where water has come into contact with, or percolated through, land-disposed waste into the ground or surface water, the DTSC has authority, in coordination with the RWQCB, to test and monitor ground and surface water. The role of the DTSC regarding groundwater contamination is addressed in Section IV.D, Hazards and Hazardous Materials, of this Draft EIR.

(3) Local Regulations

The Regional Water Quality Control Board (RWQCB) issued a municipal permit (MS4 Permit) to the County of Los Angeles and 84 incorporated cities, including the City of Carson, in December 2001.[76] To meet the requirements of the Los Angeles County MS4 Permit, municipalities are required to implement the Storm Water Quality Management Program (SWQMP) that was prepared as part of the Report of Waste Discharge filed as part of the

[76] *County of Los Angeles Municipal Storm Water Permit (NPDES No. CAS004001, Order No 01-182).*

NPDES approval process. Pursuant to this program, municipalities, including the City of Carson, are required to conduct a variety of activities including, but not limited to, the following:

- Control discharges at commercial/industrial facilities through tracking, inspecting, and ensuring compliance at facilities that are critical sources of pollutants;
- Implement a development planning program for specified development projects;
- Implement a program to control construction runoff from construction activity at all construction sites within its jurisdiction; and
- Implement a public agency activities program.

(a) Construction

In accordance with requirements of the MS4 Permit, the City of Carson must establish and enforce specific requirements related to surface water quality. Under MS4, construction projects with one acre and more of disturbed soil must file an NOI with the SWRCB to comply with the State NPDES General Construction Permit. The applicant for any construction project must also prepare a Storm Water Pollution Prevention Plan (SWPPP). In order to implement SWRCB requirements, the City of Carson Municipal Code incorporates, by reference, regulations of the Los Angeles County Code, specific to water runoff and water quality. Code Section 3307.5, Storm Water Control Measures, requires the City to put into effect and maintain all precautionary measures necessary to protect adjacent water courses and public or private property from damage by erosion, flooding, and deposition of mud, debris, and construction-related pollutants originating from the site during grading and related construction activities. Under Code Section 3309.4, storm water provisions are required to be shown on all grading plans in accordance with a drainage plan and locations of structures that may affect drainage must be shown. Section 3315.4 requires that all drainage facilities shall be designed to carry waters to the nearest practicable street, storm drain, or natural watercourse approved by the Building Official or other appropriate governmental agency as a safe place to deposit such waters. Desilting basins, filter barriers or other methods, as approved by the City Building Official, shall be utilized to remove sediments from surface waters before such waters are allowed to enter streets, storm drains or natural watercourses.

Code Section 3319 addresses National Pollution Discharge Elimination System (NPDES) compliance. Under Section 3319.2, Storm Water Pollution Prevention Plan (SWPPP), no grading permit shall be issued unless the plans for such work include a SWPPP with details of BMPs, as may be necessary, to control construction-related pollutants which originate from the site as a result of construction related activities. All BMPs must be installed before grading begins. As grading progresses, BMPs must be maintained in good working order to the

satisfaction of the City Building Official, unless final grading approval has been granted by the City Building Official and all permanent drainage and erosion control systems, if required, are in place.

In addition to the SWPPP required in Section 3319.2, if it appears that grading will not be completed prior to November 1, Code Section 3319.3 requires that the owner shall file a Wet Weather Erosion Control Plan (WWECP) with the City Building Official. The WWECP shall include specific Structural BMPs to minimize the transport of sediment and protect public and private property from the effects of erosion, flooding or the deposition of mud, debris or construction related pollutants. The BMPs shown on the WWECP shall be installed on or before October 15. The plans shall be revised annually or as required by the Building Official to reflect the current site conditions.

(b) Operation

The City of Carson further meets the requirements of the MS4 Permit through the implementation of the Los Angeles County development planning program. The Standard Urban Stormwater Mitigation Plan (SUSMP) is one of the main components of this program. In accordance with the required program, the City is responsible for monitoring SUSMPs which address storm water pollution from new private sector development and redevelopment projects Site-specific SUSMPs, for individual development projects, must incorporate the SWRCB-required minimum Source and Treatment Control BMPs and may include BMPs added by the City, on a case-by-case basis. The primary objectives of the SUSMP are to (1) effectively prohibit non-storm water discharges and (2) reduce the discharge of pollutants to the storm water conveyance system. Project-specific SUSMPs must be incorporated into the physical design of the approved project. Under the MS4 permit all projects within the following categories are required to prepare SUSMPs:

- Single-family hillside residences;
- 100,000-square-foot commercial developments;
- Automotive Repair Shops;
- Restaurants;
- Home subdivisions with 10 to 100 or more housing units;
- Project located adjacent to an environmentally sensitive area; and
- Parking lots, potentially exposed to storm water runoff, 5,000-square-feet or more, with 25 or more parking spaces.

Treatment control BMPs required under the SUSMP shall, at a minimum, be based on either volume-based or flow-treatment-control design standards, or both. Treatment control BMPs are intended to achieve a reduction in the percentage of pollutant loads in storm waters during particular storm events. Under SUSMP requirements, mitigation is achieved through infiltration, filtration, or treatment of stormwater runoff. Projects requiring an EIR, such as the proposed Project, are encouraged to select a design standard associated with volumetric treatment control and flow based treatment, that is site-specific, rather than the default design 0.75-inch storm event standard.[77] Source Control BMPs include protection of slopes and channels; stenciling and signage on drain inlets to prohibit unauthorized dumping; screening or walling of trash storage areas to prevent off-site transport of trash; diversion of drainage from trash storage areas; indoor storage of materials; prohibition of direct connection to storm drains from depressed loading docks (truck wells); and treatment of runoff from parking areas before it reaches the storm drain system. Treatment Control BMPs, which treat water runoff through infiltration and other treatment measures, include infiltration benches or trenches, ponds and detention basins, catch basin inserts and screens, cisterns, biofilters, filtration systems, clarifiers, oil separators, primary wastewater treatment, rain diversion, and other measures.

Under SUSMP requirements, peak storm water runoff discharge shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge will result in increased potential for downstream erosion. Runoff is generally reduced through implementation of infiltration and detention BMPs. A waiver to infiltration requirements may be granted, only if all other Structural and Treatment Control BMPs have been considered and if impracticability can be established. Recognized situations of impracticability include risk of groundwater contamination because of a known unconfined aquifer beneath a site. Infiltration may also be waived if there is an extreme limitation of space or unstable soil conditions. Infiltration BMPs are also not recommended for areas subject to high vehicular traffic on a main roadway, or 15,000 or greater average daily traffic (ADT) on any intersecting roadway, unless appropriate pre-treatment is provided to ensure that groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

In the BMP selection process, evaluations to determine the effectiveness may be based on numerical design criteria. Evaluations do not need to rely on water-quality based information, such as monitoring, but may be based on surveys, review of plans, or other methods. All projects subject to SUSMP requirements must provide verification of maintenance for Structural and Treatment Control BMPs. Verification can be provided through covenants or CEQA mitigation requirements.[78] The City may also verify maintenance of Structural and Treatment

[77] *California Regional Water Quality Control Board - Los Angeles Region, Development Planning Program Review Report, Los Angeles County Municipal Storm Water NPDES Permit, page 35 (November 2003).*

[78] *Ibid, page 38.*

Control BMPs with inspections and by requiring property owners to submit annual or semi-annual certifications that maintenance of the BMPs has been performed.

b. Existing Physical Environment

(1) Development Districts 1 and 2 (Former Landfill Site)

(a) Surface Water Quality

Storm water quality is typically influenced by land use, hydrology, geology, and soils. Pollutants of concern are classified into six categories: (1) sediments, (2) oxygen-demanding material, (3) bacteria, (4) nutrients, (5) metals, and (6) other toxic chemicals.

Development Districts 1 and 2 operated as a Class II landfill from 1959 until approximately 1965. The site lay dormant and unproductive after suspension of landfill operations until 1978, when roads and drainage and other basic infrastructure were installed. From 1991 to 1993, a concrete (demolition debris) crushing and recycling facility operated on a portion of the landfill site.

In 1991, the County of Los Angeles Department of Public Works (LACDPW) collected surface water runoff samples from the former landfill site and from the Torrance Lateral Channel, upgradient from the landfill site. To determine the level of residual contamination, the upgradient samples served as control, or background, values with which surface water runoff from the landfill site could be compared. Laboratory test determined that contamination in surface water did exist. Surface runoff samples from five on-site locations were tested for a range of metals against the background levels. Metals that exceeded background concentrations included antimony, calcium, chromium, copper, lead, molybdenum, nickel, and zinc.[79] Of the seven Volatile Organic Compound (VOC) samples collected from four surface water locations, only xylene (4 parts per billion [ppb]) was detected at one of the collection locations. Four Semi-Volatile Organic Compounds (SVOCs) collected from three locations detected bis (2-ethylhexyl) phthalate (4 ppb) and butyl benzyl phthalate (8 ppb) at one sample location. Oil and grease analyses were performed on five samples collected at five locations. The analytical results indicated detectable oil and grease in four samples, ranging from 0.36 to 0.62 ppm.[80] Storm water discharges from the site and effluent from the future groundwater treatment system require a NPDES permit to allow discharge into the storm drain system. Under the NPDES permit, periodic effluent quality monitoring and reporting are required to determine compliance

[79] *Brown & Root Environmental, Op. Cit., page 4-8.*

[80] *Brown & Root Environmental, Op. Cit., pages 4-6 and 4.7.*

and monitor treatment system efficiency.[81] The RAP requires the landfill area to be capped to prevent rainwater from entering the waste prism. Capping the landfill waste would prevent additional existing contaminants from entering surface water runoff. The implementation of the DTSC-approved 1995 RAP would allow the proposed redevelopment of the site to proceed.[82]

(b) Storm Water Pollution Prevention Plan (SWPPP)

Surface water runoff from the landfill site is currently managed under an existing General Industrial NPDES permit administered by the RWQCB. The discharge permit includes the implementation of a SWPPP, required by the NPDES permit, and the submittal of an Annual Report for RWQCB review. The SWPPP establishes a program for monitoring, testing, and reporting of stormwater quality to determine compliance with the requirements of the NPDES and the efficacy of the selected monitoring treatment, or BMPs. In accordance with the current NPDES for the parcel, the quality of stormwater runoff has been actively tested for several years. The SWPPP requires inspections and sampling of surface water runoff, quarterly and during precipitation events. Under the SWPPP, water samples are tested for potential contaminants and an Annual Report of site inspections and water testing is submitted to the RWQCB for review. The 2002-2003 and 2003-2004 Annual Reports observed that streets and slopes that drain into the storm drain system are potential pollution sources. Reported water sampling and testing indicate that the primary pollutant that could affect storm runoff quality is sediment from thinly vegetated areas near roads and residual dirt left on roads by heavy equipment activities. Precipitation was the only discharge source. Surface water has been tested for VOCs, semi-VOCs, total suspended solids (TSS), oil and grease, specific conducting materials, and pH in accordance with the standard EPA methodology.[83] The selected storm drain sampling points are located in areas near potential pollution sources and would receive representative examples of the site's surface water quality. Areas of potential pollution sources are areas of previous high traffic, where heavy equipment created potential storm water migration channels. The drain (MW-2) located at the bottom of the slope of the road is also considered an area of high pollution potential.[84] According to testing results reported in the two Annual Reports, no VOCs, Semi-VOCs, RCRA-listed metals,[85] or oil and grease were detected that exceeded the state's specified limit. The reporting limit (MCL) for total suspended particulates (TSS) is 5 μg/L. During the 2002-2003 rainy season, TSS was detected at 4 μg/L, 98.1 μg/L, 149 μg/L, and 110 μg/L, at the

[81] *Brown & Root Environmental, Op. Cit., page 7-15.*

[82] *Brown & Root Environmental, Op. Cit., page 6-1.*

[83] *Allwest Remediation, Inc., Storm Water Pollution Program (SWPPP) Annual Report, (2002-2003 and 2003-2004), pages 35 & 45.*

[84] *Allwest Remediation, Inc., Op. Cit, page 2 (July 2003).*

[85] *RCRA (hazardous) metals include arsenic, barium, cadmium, lead, mercury, selenium, and silver above a specified limit.*

sampling locations. During the 2003 rainy season, TSS was detected at 1.7 µg/L and 1.5 µg/L. TSS, which is made up of undissolved solids in water runoff, provide a medium by which toxins and other pollutants can be transported to waterways and ultimately harm aquatic life. It has been shown that TSS levels increase substantially with the disturbance of previously undisturbed land and with construction.[86]

Under the existing SWPPP, BMPs are being implemented to reduce TSS. These include the following measures:

- Streets are cleared and swept monthly throughout the year to prevent the accumulation of sediment in gutters and storm drains;
- Weed control is continuously implemented throughout the year to prevent the accumulation of organic materials in gutters and storm drains;
- Stockpiled soil that could become suspended in runoff entering the storm drains was moved to areas where runoff would not impact storm drains;
- Sandbags are placed along each storm drain to reduce runoff flow velocity, thus causing suspended solids to settle out before entering storm drains;
- Sandbags are placed at the base of each slope to prevent erosion and to divert runoff flow away from the storm drains where storm drains are located against unpaved slopes;
- Vegetation above storm drains is maintained to minimize erosion and enhance the settling of suspended solids before entering storm drains.

Due to heavy rains in the 2004-2005 season, it was necessary to pump and discharge standing water from two on-site retention ponds. Prior to discharge into the off-site storm drain system, permits were obtained from the City of Carson and the CRWQCB.[87] The retained water was sampled and tested in accordance with State water quality parameters for VOCs, semi-VOCs, metals, and Specific Conductance (SC). VOCs, including 23 µg/L Naphalene and 3.2 µg/L m,p Xylene, were detected in Sample RW1W. The reporting limit for these compounds are 5.5 µg/L and 2.0 µg/L, respectively. No other VOCs reached detectible levels in Sample RW1. In Sample RW2, acetone was detectible at 14 µg/L, exceeding the MCL of 10 µg/L. No semi-

[86] *Allwest Remediation, Inc., Op. Cit., Description of Basic Analytical Parameters, page 14 (July 2003).*

[87] *California Regional Water Quality Control Board, Los Angeles Region, File No. 59-045, WDD No. 4191-012013, May 26, 2005 (attached to SCS Engineers, 2004-2005 Annual Report for Stormwater Discharge, June 30, 2005).*

VOCs exceeded the reporting limit in Sample RW1. One compound, benzoic acid, was detected at 21 µg/L in Sample RW2, slightly exceeding the reporting level of 20 µg/L. No other semi-VOCs were detected in Sample RW2. In the two water samples, barium was detected at 6.1 µg/L and 3.6 µg/L, respectively, exceeding the reporting limit of 1.0 µg/L. In Sample RW1, lead was also detected at 1.0 µg/L, equal to the reporting limit. No other metals were detectible in either sample. Oil and grease and TOCs were not detectible in either sample. Both water samples exceeded reporting limits for SC, which is the ability of water to conduct electricity. High conductivity indicates high mineralization or total dissolved solids, and affects the quality of water for drinking or commercial and industrial use. The SC of Sample RW 1 was detected at 42 µg/L and the SC of Sample RW2 was 31 µg/L. The reporting limit for SC is 1.0 µg/L. The retained water was released in accordance the requirements of the CRWQCB Release of Stormwater Permit.[88]

According to the 2002-2003, 2003-2004, and 2004-2005 Annual Reports, the landfill site is in compliance with the SWPPP General Permit. Existing BMPs are determined to be adequate to fulfill the requirements of the SWPPP under existing conditions and no additional BMPs are deemed necessary.[89]

(c) Drainage

Development Districts 1 and 2 consist primarily of a large, expanse of exposed soil and fill materials. The existing storm drain system is shown in Figure 34 on page 345. The amount of vegetation available to anchor the surface soil is minimal. Paved areas consist of Lenardo Drive and Stamps Drive. The principal mechanism of water and sediment transport on- and off-site is via surface water runoff during and immediately following precipitation events. There are no perennial streams on the parcel and the only surface water present on-site is runoff water. Due to poorly maintained drainage patterns, a portion of water and sediment transported during episodes of rainfall is contained in small water-trapping depressions. Most flows, however, are toward the existing streets and the existing storm drain system in Del Amo Boulevard, Main Street, Lenardo Drive, and Stamps Drive.

The drainage area surrounding the Project site is served by the Torrance Lateral Channel, a concrete-lined channel 45 feet wide and up to 17.5 feet deep. The Torrance Lateral Channel has a design capacity of 4,300 cubic feet per second (cfs). This channel begins west of the Project site and continues easterly along the western and south boundaries of the former landfill site, until passing under the San Diego Freeway where it connects to the Dominguez Channel.

[88] *SCS Engineers, 2004-2005 Annual Report for Stormwater Discharge, June 30, 2005).*

[89] *Allwest Remediation, Inc., Op. Cit, page 25.*

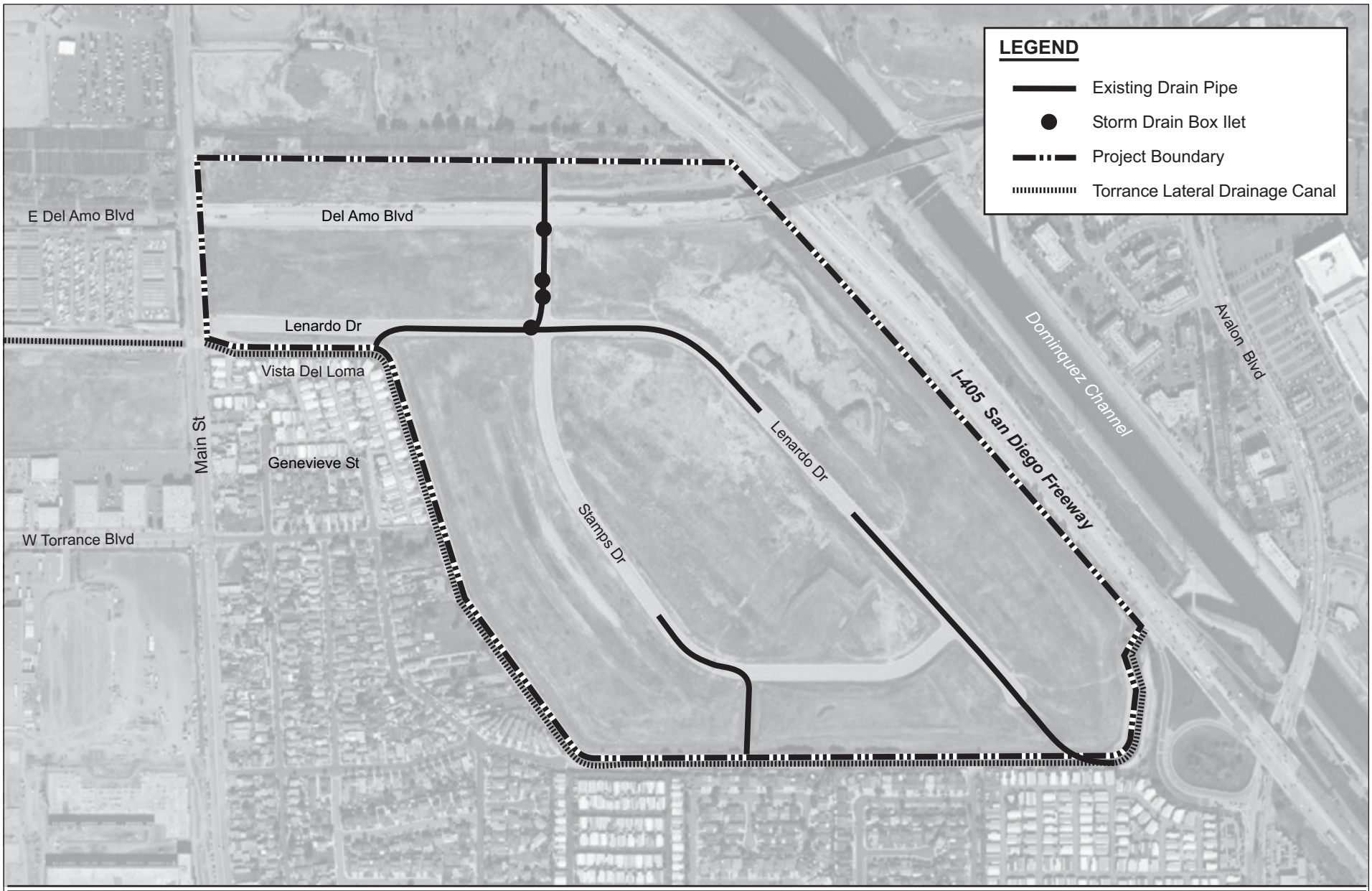

Figure 34
Existing Storm Drains

The Dominquez Channel is a concrete-lined, southeast-flowing regional flood control channel, which parallels the San Diego Freeway. In the vicinity of Wilmington Avenue, the Dominquez Channel turns toward the south and flows parallel to the Terminal Island Freeway. At San Pedro, the Dominquez Channel joins the Los Angeles Channel and continues to the Los Angeles Harbor. The maximum design capacity of the channel is approximately 16,340 cfs. The Torrance Lateral and the Dominquez Channel are used exclusively for flood control and storm runoff.

The design capacity of the storm drain system in Main Street and Del Amo Boulevard, adjacent to the Project site, and Lenardo Drive and Stamps Drive, within the Project site, was designed by the Los Angeles County Department of Public Works (LACDPW) to serve the future commercial/industrial development of the Project site. As such, the storm drain system is designed on the assumption of 100 percent impermeability of the developed site, in which all surface water is presumed to enter the existing storm drain systems.

The street drainage system consists of four principal reinforced concrete storm drains. Drain No. 1 is a south-flowing system located in Main Street, along the Project's western boundary. This drain begins north of Del Amo Boulevard, with a diameter of 66 inches, and, south of Del Amo Boulevard, increases in diameter to 72 inches. Flow continues to the Torrance Lateral Channel inlet.

Drain No. 2 consists of three main branches, including a 60-inch diameter south-flowing drain beginning north of Del Amo Boulevard and continuing to the northern intersection of Lenardo Drive and Stamps Drive. Four inlets flow into this portion of the drain. The second branch begins on Lenardo Drive approximately 800 feet southeast of the intersection with Stamps Drive. Six inlets flow into this 42-inch branch of the drain. At the intersection of Lenardo Drive and Stamps Drive, these two branches merge into a third branch, consisting of a single 84-inch drain that continues in a westerly direction for approximately 700 feet before outletting into the Torrance Lateral Channel.

Drain No. 3 begins on Stamps Drive approximately 1,600 feet south of the intersection of Lenardo Drive and Stamps Drive. Two inlets flow into this 36-inch drain at its northerly terminus. The drain then continues southeasterly along Stamps Drive for approximately 400 feet, where it accepts the flow from two additional inlets and increases in size to 48 inches. Drain No. 3 then changes direction and flows south to connect with the Torrance Lateral Channel.

Drain No. 4 begins at the southern intersection of Lenardo Drive and Stamps Drive, where four inlets drain into this 36-inch drain. Drain No. 4 then continues south along Lenardo Drive, where it increases to 42 inches and proceeds south to the Torrance Lateral Channel.

(2) Development District 3

(a) Surface Water Quality and Drainage

Surface water quality from Development District 3 has not been tested. Due to stockpiled fill soils and areas of thin vegetation, the potential for sediments in surface water runoff exists. Under existing conditions, flow is unrestrained over the ground surface (sheet flow) and flows to the north. The majority of this sheetflow percolates into the onsite soils or into the undeveloped land to the north. However, an area in the westerly portion of the site drains into Del Amo Boulevard on the west side of the Dominguez Channel. From existing street drains in Del Amo Boulevard, surface water enters the Torrance Lateral Channel from which it, ultimately, drains into the Dominquez Channel and Los Angeles Harbor. Contaminants are potentially present in storm water runoff from this parcel, depending on the former land use and the potential migration of contaminants onto the property. Although the parcel is currently vacant, a portion of the site, at one time, may have been developed as a dairy.[90]

According to prior geotechnical investigations, fill soils exist in Development District 3 to depths of approximately 8 feet. A soil-vapor survey completed in 1990 identified the presence of VOCs in soil vapor approximately 9 feet below ground surface (bgs). The presence of VOCs at that time suggested that some landfill gases may have migrated into Development District 3 from former landfills north and/or south of the property. Based on the site reconnaissance, interviews, and records review performed as part of the environmental assessments, there is no evidence to suggest prior onsite uses caused soil contamination.

3. ENVIRONMENTAL IMPACTS

a. Methodology

Water quality impacts potentially result from a change in the quality, quantity or direction of flow of storm water. Drainage patterns, drainage systems, and increase in runoff are evaluated to determine the potential for off-site flooding and erosion. Changes in the quantity and direction of surface water may result in flooding or incursion into contaminated areas, causing contaminants to enter the surface water through erosion or flushing. A review of water quality records for the former landfill site was conducted to determine the potential for the existing

[90] *BBL, Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005).*

contaminants to enter surface water runoff during construction of the Project. Conversely, applicable federal, state, and local water quality regulations were reviewed to determine the efficacy of such regulations in addressing the potential effects on surface water that could occur during construction and operation of the Project. Impacts were determined based on a comparison of the existing conditions of the Project site with the proposed use of the site and design of the Project.

b. Thresholds of Significance

(1) Construction

The Project would have a significant impact on surface water quality if:

- Construction activities result in or produce a substantial change in the current or direction of water flow.
- Construction activities cause pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code or cause regulatory standards to be violated, as defined in the applicable NPDES storm water permit or Water Quality Control Plan for the receiving water body.

(2) Operation

The Project would have a significant impact on surface water quality if the Project would:

- Violate any water quality standards or waste discharge requirements;
- Provide substantial additional sources of polluted runoff; or
- Otherwise substantially degrade water quality.

c. Project Design Features

The Applicant would file a Notice of Intent (NOI) with the SWRCB for a NPDES General Construction Permit. In compliance with the NPDES Permit, the Applicant would prepare a SWPPP and identify the structural BMPs needed to minimize erosion during construction, stabilize construction areas, provide sediment control, and control pollutants associated with construction materials. Specific structural BMPs, depending on City approval, may include desilting basins, sandbagging of inlets, a gravel construction entrance to reduce dirt

tracking, and silt fences. Because of DTSC oversight of the remediation of the landfill site, all construction activities and BMPs would also be reviewed by the DTSC.

In addition, drainage and erosion control plans would be submitted to the City for approval and incorporated into the design of the Project. These would include the prohibition of any uncontrolled sheet flow into adjacent streets, properties, and the Torrance Lateral Channel.

The Applicant would also prepare a SUSMP for the Project, based on site-specific volume and flow treatment control design standards for post-construction conditions. The Applicant would also adhere to Source Control BMPs, which include protection of slopes and channels, stenciled drain inlets with prohibitive language (such as "NO DUMPING—DRAINS TO OCEAN") and/or provide graphical icons to discourage illegal dumping. Trash storage areas would be walled to prevent off-site transport of trash and drainage would be diverted from trash storage areas. Outdoor storage of materials and direct connection to storm drains from depressed loading docks (truck wells) would be prohibited. Runoff from parking areas would be treated before it reaches the storm drain system. The Applicant would also install Structural and Treatment Control BMPs, including catch basin inserts and vortex separators in Development Districts 1 and 2 and would install detention and infiltration systems in Development District 3, to assure that contaminants of concern would not enter the storm drain system. Required detention capacity in Development District 3 would be evaluated and installed in accordance with a detailed hydrologic study to assure that runoff from the future developed site would not contribute to any off-site flooding conditions which could cause contaminants to enter the site's surface water. No retention or infiltration would be permitted in Development Districts 1 and 2 since the impervious cap over the waste layers would prevent percolation. In addition, it is the intent of the landfill RAP to prevent any surface water from entering the waste layers or underlying groundwater. The Applicant would also provide verification of the maintenance for the implemented BMPs and submit annual or semi-annual certifications, as required by the City, that maintenance has been performed.

d. Project Impacts

(1) Construction

Construction associated with Development Districts 1 and 2 would require the excavation, movement, and on-site storage of approximately 1.5 million cubic yards of soil. Approximately 125 acres would be grubbed (vegetation and debris removed) and would be used for stockpiling of soils during mass grading. Deep dynamic compaction (DDC), which would require the use of water for compaction, is planned to occur over approximately 60 to 75 acres. Mass grading would be staged and soils would be stockpiled to allow backfill after DDC. The need to fill after DDC would require moving stockpiled soil at least twice.

Construction associated with Development District 3 would require the mass grading of onsite soils, removal of debris, and the import and compaction of fill soil. Vegetation and debris removal would occur over the entire 11-acre site. Water would be used for dust control and in the compaction process.

In addition to water added during the grading process, barren soils would also be exposed to rainfall during the construction phase. With such exposure, the potential exists for the mobilization of pollutants and the contamination of surface water runoff. As waters in contact with contaminated soils could be discharged from the Project site into the storm drain system, off-site contamination and turbidity could occur. However, such stormwater runoff would be controlled under an NPDES Construction General Permit, which would include, but would not be limited to, the preparation of a SWPPP to monitor and control stormwater runoff. The SWPPP would establish site-specific structural BMPs to assure that construction activities would not result in potential flooding or erosion or in pollution, contamination, or nuisance, as defined in Section 13050 of the California Water Code, or cause regulatory standards to be violated, as defined in the applicable NPDES storm water permit or Water Quality Control Plan for the receiving water body.

Specific structural BMPs implemented as project design features, may include desilting basins, sandbagging of inlets, a gravel construction entrance to reduce dirt tracking, and silt fences. A prior analysis of soils in Development District 3 found soil gas contamination in a portion of the site.[91] The contact of precipitation with contaminants in surface soils would be a potential source of surface water degradation within this portion of the Project site. Although recent testing has concluded that no soil gas is currently present,[92] mitigation is recommended to assure compliance with applicable water quality standards.

(2) Operations

With development of the Project as proposed, surface areas in Development Districts 1 and 2 would be almost entirely impermeable. Impermeable surfaces would include streets, driveways, parking areas, and building footings and slabs. The proposed waste cap, which would underlie much of the developed area within Development Districts 1 and 2, would also contribute to the site's impermeability. Onsite permeable surfaces would consist of only the perimeter slopes along the edges of Development Districts 1 and 2. Although new impermeable surfaces would increase water runoff from the site, the impermeability that would result due to

[91] *Converse Environmental West, Preliminary Site Assessment, 10-acre Parcel at Main and Del Amo, page 13 (February 26, 1990).*

[92] *BBL Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005).*

the waste cap would eliminate the exposure of surface water runoff to any contaminated soils. In addition, because no waste soils are located along the perimeter of Development Districts 1 and 2, the permeable area of this portion of the Project site would not be a source of surface water contamination. Thus, once Project construction is completed, surface water runoff from Development Districts 1 and 2 would not exceed water quality standards associated with existing waste materials that underlie this portion of the Project site.

Development District 3 would have a combination of permeable and impermeable areas. Driveways, sidewalks, building footprints, and any plazas and patios would be impermeable. Permeable areas would primarily consist of landscaped areas in the commercial portion of the site and landscaped open space associated with the residential portion of the development. In all Development Districts, the proposed drainage system would be designed to direct storm water, irrigation, and other effluent into the on-site drainage system and, from there, into the existing storm drain system in Del Amo Boulevard and Main Street. No uncontrolled sheet flow from any Project location would be directed or allowed to flow onto adjacent properties or directly into the Torrance Lateral Channel.

In an urban setting, post-construction storm water runoff has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm water conveyance system. In accordance with state and federal regulations, such pollutants are reduced through procedures established in a site-specific Standard Urban Stormwater Mitigation Plan (SUSMP). A site-specific SUSMP would be required by the City as a compliance measure with the SWRCB 2001 MS4 Permit. Under the SUSMP, Structural, Treatment and Source Control BMPs would be required to reduce potential contamination levels in the Project's stormwater runoff. With the implementation of design features related to post-construction BMPs, the Project would control, remove, or reduce pollution in surface water runoff. The Project would comply with all of the requirements of the SUSMP, set forth in the City's NPDES, and would incorporate appropriate BMPs that are designed to control, remove, or reduce pollution in surface water runoff. In addition, the engineering design of the Project's storm drain system would prevent uncontrolled sheet flow.

BMPs that require on-site retention would not be implemented in Development Districts 1 and 2 since no infiltration into the underlying whole layers would be permitted. Instead, in compliance with the requirements of the SUSMP, BMPs that treat surface water runoff by removing contaminants before water enters the storm drain system would be employed. Treatment BMPs for Development Districts 1 and 2, previously described as Project design features required by the DTSC, include catch basin inserts and vortex separators. Other or additional BMPs would be implemented, if required, to remove operational contaminants. Operational contaminants, such as vehicle oil and grease from parking lots, would be regulated by the Project's SUSMP permit, which would be monitored by the City of Carson. Development District 3 would contain permeable areas associated with landscaped open space. Under the

SUSMP, detention and infiltration systems would be installed in Development District 3 to treat surface water runoff before it enters the off-site storm drain system.

Flood conditions have the potential to introduce a range of pollutants to stormwater runoff. Under SUSMP requirements, peak storm water runoff discharge shall not exceed the estimated pre-development rate for developments where the increased peak storm water discharge will result in increased potential for downstream erosion. Due to the increased impermeability of Development Districts 1 and 2, surface water runoff during peak storm conditions would substantially increase, compared to existing conditions. Surface water runoff would be collected by a system of concrete street drains and directed to the Torrance Lateral Channel. The LACDPW's peak storm design parameters for the surrounding storm drain system assume 100 percent impermeability of Development Districts 1 and 2, which are master-planned for commercial/industrial uses. Since the future impermeability of the Districts 1 and 2 would not exceed the design parameters of the surrounding storm drain system, flooding during a peak storm event is not anticipated.

Proposed impermeable areas in Development District 3 would also increase surface water runoff during peak storm conditions and, as such, site development has the potential to increase stormwater runoff compared to existing conditions. In addition, the diversion of existing sheetflow runoff in Development District 3 from permeable areas to the north would increase the volume of stormwater runoff entering the existing storm drain system. The proposed detention and infiltration systems in Development District 3, however, would reduce runoff to appropriate design levels before it enters the off-site storm drain system. Therefore, surface water runoff from Development District 3 would not exceed the capacity of the storm drain system during peak flow. Since exceeding storm drain capacity would not occur, impacts associated with flooding and erosion would be less than significant.

Appropriate design and compliance with the requirements of the Project's SUSMPs would ensure that the Project would not result in substantial additional sources of polluted runoff or otherwise substantially degrade water quality. Since the Project would not violate any water quality standards or waste discharge requirements or result in substantial additional sources of polluted runoff, the impact to surface water quality during Project operations would be less than significant.

The implementation of the Final RAP (Upper OU) could potentially contribute additional surface water into the existing storm drain system. Under the Final RAP, groundwater would be extracted, routed to the treatment unit, and then discharged into the storm drain system for off-site discharge into the Torrance Lateral Channel or local sanitary sewer system.[93] Since the

[93] *Brown & Root, Op. Cit., page 7-8.*

intent of the treatment system is to remove pollutants from the extracted water, treated effluent would not affect surface water quality. The volume of treated effluent would not be substantial enough to overwhelm the existing storm drain system, and since disposal would be discretionary, disposal during peak storm events would be avoided. Therefore, treated water would not cause off-site flooding or any other significant water quality impacts.

4. MITIGATION MEASURES

Impacts associated with surface water runoff and water quality in Development Districts 1 and 2 would be less than significant and no mitigation measures would be required. However, since potential, unremediated soil contamination exists in Development District 3, the following mitigation measure is recommended:

Mitigation Measure F-1: Soils in Development District 3 shall be tested prior to the issuance of a grading permit, in accordance with the recommendation of Blasland, Bouck and Lee, Inc.'s (BBL's) Preliminary Draft Phase I and Initial Phase II Environmental Site Assessment Summary, Del Amo Gardens Site (July 6, 2005). If contaminants are found in excess of State of California maximum contamination levels (MCLs), the soils shall be addressed in accordance with a DTSC-approved program.

5. CUMULATIVE IMPACTS

Section III, Environmental Setting, of this EIR identifies 36 related projects that have the potential, in conjunction with the proposed Project, to result in a cumulative impact. The 36 related projects could potentially contribute point and non-point source pollutants to surface waters, resulting in a cumulative impact to water quality. However, all new development and redevelopment projects over more than one acre, or meeting other SUSMP land use criteria under the City (or County) MS4 Permits, must comply with NPDES requirements during construction and operation, including developing and implementing site-specific SWPPPs and SUSMPs. Thus, each qualifying related project would be evaluated individually to determine appropriate BMPs and treatment measures to avoid impacts to surface and groundwater quality. With the incorporation of these measures, it is anticipated that the development of the identified related projects would not result in water quality impacts beyond acceptable regulatory levels. Under SWRCB water quality policy, small projects are exempted from NPDES permit requirements, since they are not considered a substantial source of water quality degradation. Therefore, the related projects that would be too small to require NPDES permitting would not substantially contribute to cumulative water quality impacts. As discussed, development of the Project would reduce exposure to existing pollutants and improve the quality of the water

discharged from the Project site, compared to existing conditions. In addition, potential pollutants associated with the operation of the Project would be treated prior to discharge into the existing storm drain system and, as such, the Project would not cumulatively contribute to degraded water quality. In addition, the City of Carson Building Official and Department of Engineering would review all construction projects on a case-by-case basis to assure that sufficient local and regional drainage capacity is available. Cumulative impacts to surface water quality are concluded to be less than significant based on compliance with existing regulations.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Through the implementation of proposed drainage and erosion control plans, Best Management Practices, and water filtering and flood control devices, development of the proposed Project would not increase existing pollution and contamination, create a nuisance as defined in Section 13050 of the California Water Code, cause regulatory standards to be violated, or result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of flow. Therefore, impacts associated with surface water quality would be less than significant.

IV. ENVIRONMENTAL IMPACT ANALYSIS
G. AIR QUALITY

1. INTRODUCTION

This section addresses the air emissions generated by the construction and operation of the proposed Project, including air emissions generated during implementation of the Remedial Action Plan (RAP) within Development Districts 1 and 2 (i.e., the former Cal Compact Landfill). The analysis also addresses the consistency of the proposed Project with the air quality policies set forth within the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan, and the City of Carson General Plan. The analysis of Project-generated air emissions focuses on whether the proposed Project would cause an exceedance of an ambient air quality standard or SCAQMD significance threshold.

2. ENVIRONMENTAL SETTING

a. Regulatory Setting

A number of statutes, regulations, plans, and policies have been adopted that address air quality issues. The proposed Project site and vicinity are subject to air quality regulations developed and implemented at the federal, state, and local levels. At the federal level, the United States Environmental Protection Agency (USEPA) is responsible for implementation of the Federal Clean Air Act (CAA). Some portions of the CAA (e.g., certain mobile source and other requirements) are implemented directly by the USEPA. Other portions of the CAA (e.g., stationary source requirements) are implemented by state and local agencies.

(1) Authority for Current Air Quality Planning

A number of plans and policies have been adopted by various agencies that address air quality concerns. Those plans and policies that are relevant to the proposed Project are discussed below.

(a) Federal Clean Air Act

The CAA was first enacted in 1955 and has been amended numerous times in subsequent years, with the most recent amendments in 1990. The CAA establishes federal air quality standards, known as National Ambient Air Quality Standards (NAAQS) and specifies future dates for achieving compliance. The CAA also mandates that the state submit and implement a

State Implementation Plan (SIP) for areas not meeting these standards. These plans must include pollution control measures that demonstrate how the standards will be met. The Project area is within the South Coast Air Basin (Basin), which is an area designated as non-attainment, as the area does not meet NAAQS for certain pollutants regulated under the CAA.

The 1990 Amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA, which are most applicable to the proposed Project, include Title I (Nonattainment Provisions) and Title II (Mobile Source Provisions).

Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria pollutants: (1) ozone (O_3); (2) nitrogen oxides (NO_X); (3) sulfur dioxide (SO_2); (4) particulate patter (PM_{10}); (5) carbon monoxide (CO); and (6) lead (Pb). Table 32 on pages 357 and 358 shows the NAAQS currently in effect for each criteria pollutant. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. The Basin fails to meet national standards for O_3 (for both the 1-hour and 8-hour standards), PM_{10}, and $PM_{2.5}$ and therefore is considered a Federal "non-attainment" area for these pollutants. The CAA sets certain deadlines for meeting the NAAQS within the Basin including: (1) 1-hour O_3 by the year 2010; (2) 8-hour O_3 by the year 2021; (3) PM_{10} by the year 2006; and (4) $PM_{2.5}$ by the year 2015. Nonattainment designations are categorized into seven levels of severity: (1) basic, (2) marginal, (3) moderate, (4) serious, (5) severe-15, (6) severe-17,[94] and (7) extreme. Table 33 on page 359 lists the criteria pollutants and their relative attainment status.

Title II of the CAA pertains to mobile sources, such as cars, trucks, buses, and planes. Reformulated gasoline, automobile pollution control devices, and vapor recovery nozzles on gas pumps are a few of the mechanisms the USEPA uses to regulate mobile air emission sources. The provisions of Title II have resulted in tailpipe emission standards for vehicles, which have strengthened in recent years to improve air quality. For example, the standards for NO_X emissions have lowered substantially and the specification requirements for cleaner burning gasoline are more stringent.

(b) California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the

[94] *The "-15" and "-17" designations reflect the number of years within which attainment must be achieved.*

Table 32

Ambient Air Quality Standards [a]

Pollutant	Averaging Time	California Standard [b]	Federal Primary Standard [b]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone (O_3) [c]	1 hour	0.09 ppm	0.12 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Motor vehicles.
	8 hours	0.07 ppm [d]	0.08 ppm		
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, CO interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.25 ppm	—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	—		
	24 hours	0.04 ppm	0.14 ppm		
Particulate Matter (PM_{10})	24 Hours	50 $\mu g/m^3$	150 $\mu g/m^3$	May irritate eyes and respiratory tract. Absorbs sunlight, reducing amount of solar energy reaching the earth. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	Annual Arithmetic Mean	20 $\mu g/m^3$ Annual Geometric Mean	50 $\mu g/m^3$ Annual Arithmetic Mean		
Particulate Matter ($PM_{2.5}$) [d]	24 Hours	—	65 $\mu g/m^3$	Increases respiratory disease, lung damage, cancer, premature death; reduced visibility; surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants (acid rain, NO_X, SO_X, organics).
	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$		

Table 32 (Continued)

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard [b]	Federal Primary Standard [b]	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Lead	Monthly	1.5 ug/m^3	—	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurologic dysfunction (in severe cases).	Lead smelters, battery manufacturing & recycling facilities.
	Quarterly	—	1.5 ug/m^3		
Sulfates (SO_4)	24 hours	25 ug/m^3	—	Decrease in ventilatory functions; aggravation of asthmatic symptoms; aggravation of cardio-pulmonary disease; vegetation damage; degradation of visibility; property damage.	Coal or oil burning power plants and industries, refineries, diesel engines.

[a] *Ambient air quality standards are set at levels that provide a reasonable margin of safety and protect the health of the most sensitive individual in the population.*

[b] *ppm = parts per million and µg/m^3 = micrograms per cubic meter.*

[c] *Ozone is formed when NO_X and ROCs react in the presence of sunlight. There are no air quality standards for ROC. However, ROCs are recognized as pollutants of concern as they are a precursor to the formation of ozone.*

[d] *This concentration was approved by the Air Resources Board on April 28, 2005 and is anticipated to become effective in early 2006.*

[e] *A Federal air quality standard for $PM_{2.5}$ was adopted in 1997. Presently, no methodologies for determining impacts relating to $PM_{2.5}$ have been developed. In addition, no strategies or mitigation programs for this pollutant have been developed or adopted by federal, state, or regional agencies.*

Source: California Air Resources Board, Ambient Air Quality Standards*, 2005 and the USEPA, 2005.*

earliest practical date. Table 32 shows the CAAQS currently in effect for each of the criteria pollutants as well as the other pollutants recognized by the State. As shown in Table 32, the CAAQS include more stringent standards than the NAAQS for most of the criteria air pollutants. In addition, the CAAQS have established standards for other pollutants recognized by the State. In general, the California standards are more health protective than the corresponding NAAQS. California has also set standards for $PM_{2.5}$, sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The Basin complies with the California standards for sulfates, hydrogen sulfide, and vinyl chloride, but does not meet the California standard for visibility-reducing particles. Table 33 provides the Basin's attainment status with respect to federal and state standards.

Table 33

South Coast Air Basin Attainment Status

Pollutant	National Standards	California Standards
Ozone (O_3) (1-hour standard)	Extreme	Non-attainment
Ozone (O_3) (8-hour standard)	Severe-17	N/A
Carbon Monoxide (CO)	Serious [a]	Non-attainment
Nitrogen Dioxide (NO_2)	Attainment [b]	Attainment [b]
Sulfur Dioxide (SO_2)	Attainment [b]	Attainment [b]
PM_{10}	Serious	Non-attainment
$PM_{2.5}$	Serious	Non-attainment
Lead (Pb)	Attainment [b]	Attainment [b]
Sulfates (SO_4)	N/A	Attainment [b]

N/A = not applicable

[a] *The Basin has technically met the CO standards for attainment since 2002, but the official status has not been reclassified by the USEPA.*

[b] *An air basin is designated as being in attainment for a pollutant if the standard for that pollutant was not violated at any site in that air basin during a three year period.*

Source: USEPA Region 9 and California Air Resources Board, 2005.

(c) California Air Resources Board Air Quality and Land Use Handbook

The California Air Resources Board (ARB) published the *Air Quality and Land Use Handbook: A Community Health Perspective* in April 2005, to serve as a general guide for considering impacts to sensitive receptors from facilities that emit toxic air contaminant (TAC) emissions. The recommendations provided therein are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts. The goal of the guidance document is to protect sensitive receptors, such as children, the elderly, acutely ill, and chronically ill persons, from exposure to TAC emissions. Some examples of ARB's siting recommendations include the following: (1) avoid siting sensitive receptors within 500 feet of freeways and high-traffic roads (i.e., roads within urbanized areas carrying more than 100,000 vehicles per day); (2) avoid siting sensitive receptors within 1,000 feet of a distribution center; and (3) avoid siting sensitive receptors within 300 feet of a dry cleaning facility that uses perchloroethylene.

(d) South Coast Air Quality Management District

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Los Angeles County except for the Antelope Valley, Orange County, the nondesert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is a subregion of the SCAQMD's jurisdiction. While

air quality in this area has improved, the Basin requires continued diligence to meet air quality standards.

The SCAQMD has adopted a series of Air Quality Management Plans (AQMP) to meet the CAAQS and NAAQS. These plans require, among other emission-reducing activities, control technology for existing sources; control programs for area sources and indirect sources; a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified (i.e., previously permitted) emission sources; transportation control measures; sufficient control strategies to achieve a 5 percent or more annual reduction in emissions (or 15 percent or more in a 3-year period) for Reactive Organic Compounds (ROC), NO_X, CO, and PM_{10}; and demonstration of compliance with the ARB established reporting periods for compliance with air quality goals.

The SCAQMD adopted a comprehensive AQMP update, the 2003 Air Quality Management Plan for the South Coast Air Basin, on August 1, 2003.[95] The 2003 AQMP outlines the air pollution control measures needed to meet Federal health-based standards for O_3 (1-hour standard) by 2010 and PM_{10} by 2006. It also demonstrates how the Federal standard for CO, achieved for the first time at the end of 2002, will be maintained.[96] This revision to the AQMP also addresses several State and federal planning requirements and incorporates substantial new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological data, and new air quality modeling tools. The 2003 AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the Ozone SIP for the South Coast Air Basin. Lastly, the 2003 AQMP takes a preliminary look at what will be needed to achieve new and more stringent health standards for ozone and $PM_{2.5}$.

In adopting the AQMP, the SCAQMD: (1) committed to analyzing 12 additional long-term control measures, such as requiring the electrification of all cranes at ports; (2) set a target for distributing needed long-term emission reductions between the SCAQMD, ARB, and the USEPA; (3) assigned emission reductions to the USEPA; and (4) forwarded to ARB and USEPA a list of more than 30 specific measures for consideration to further reduce emissions from on- and off-road mobile sources and consumer products. The AQMP identifies 26 air pollution control measures to be adopted by the SCAQMD to further reduce emissions from businesses, industry and paints. It also identifies 22 measures to be adopted by the ARB and the USEPA to further reduce pollution from cars, trucks, construction equipment, aircraft, ships, and consumer products.

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[95] *South Coast Air Quality Management District, AQMD Website, www.aqmd.gov/news1/aqmp_adopt.htm.*

[96] *The Basin has technically met the CO standards since 2002, but the official attainment status has not been reclassified by the USEPA.*

The SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to construction or operation of the Project. For example, SCAQMD Rule 403 requires the implementation of best available fugitive dust control measures during active construction periods capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and unpaved roads. The full text of SCAQMD Rule 403 is included in Appendix F of this Draft EIR.

The SCAQMD has published a handbook (CEQA Air Quality Handbook, November 1993) that is intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. This handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs and was used extensively in the preparation of this analysis. In addition, the SCAQMD has published a guidance document (Localized Significance Threshold Methodology for CEQA Evaluations, June 2003) that is intended to provide guidance in evaluating localized effects from mass emissions during construction. This document was also used in the preparation of this analysis.

(e) Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. As the designated MPO, SCAG is mandated by the federal government to develop and implement regional plans that address transportation, growth management, hazardous waste management, and air quality issues. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the SCAG region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation components of the AQMP and are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

(f) City of Carson Policies

The City of Carson General Plan was prepared in response to California state law requiring that each city and county adopt a long-term comprehensive general plan. This plan must be integrated, internally consistent, and present goals, objectives, policies, and implementation guidelines for decision makers to use. The City has included an Air Quality Element as part of its General Plan. The planning area for the City's Air Quality Element covers the entire City of Carson.

The 2004 revision of the City's General Plan Air Quality Element serves to aid the SCAQMD in attaining the State and federal ambient air quality standards at the earliest feasible date, while still maintaining economic growth and improving the quality of life. The City's Air Quality Element acknowledges the interrelationships between transportation and land use planning in meeting the City's mobility and clean air goals. With the City's adoption of the Air Quality Element and the accompanying Clean Air Program, the City is seeking to achieve consistency with regional Air Quality, Growth Management, Mobility, and Congestion Management Plans.

To achieve these goals, performance based measures have been adopted to provide flexibility in the implementation of the policies that are set forth in the City's Air Quality Element. The following City Air Quality Element goals, policies, and implementation measures are relevant to the Proposed Project:

Goal AQ-1*—Reduce particulate emissions from paved and unpaved surfaces and during building construction.*

Policy AQ-1.1—Continue to enforce ordinances which address dust generation and mandate the use of dust control measures to minimize this nuisance.

Implementation Measure AQ-1.1 Investigate further amending of existing requirements for grading permits and erosion, siltation and dust control procedures.

Policy AQ-1.2—Promote the landscaping of undeveloped and abandoned properties to prevent soil erosion and reduce dust generation.

Implementation Measure AQ-1.2—Investigate the feasibility of requiring planting of undeveloped and abandoned properties.

Policy AQ-1.3—Adopt incentives, regulations, and/or procedures to minimize particulate emissions.

Implementation Measure AQ-1.3—Amend contracting requirements for any new street cleaning equipment to require, to the maximum extent feasible, the most efficient fine particle removal.

Implementation Measure AQ-1.4—Study the feasibility of requiring the use of less impactive leaf blowers, such as equipment that will collect particulates rather than blow them around.

Goal AQ-2*— Improve air quality which meets State and Federal standards*

Policy AQ-2.1—Coordinate with other agencies in the region, particularly SCAQMD and SCAG, to implement provisions of the regions' AQMP, as amended.

Implementation Measure AQ-2.1—Continue to participate, where possible, in committees involved in the development and implementation of air quality implementation plans.

Policy AQ-2.2—Utilize incentives, regulations and implement the Transportation Demand Management requirements in cooperation with other jurisdictions to eliminate vehicle trips which would otherwise be made and to reduce vehicle miles traveled for automobile trips which still need to be made.

Policy AQ-2.3—Cooperate and participate in regional air quality management plans, programs and enforcement measures.

Implementation MeasureAQ-2.2—Continue to encourage and assist employers in developing and implementing work trip reduction plans, employee ride sharing, modified work schedules, preferential carpool and vanpool parking, or any other trip reduction approach that is consistent with the AQMP for the South Coast Air Basin.

Implementation Measure AQ-2.3—Continue City employee work trip reduction programs and use of alternative fuel vehicles.

Policy AQ-2.4—Continue to work to relieve congestion on major arterials and thereby reduce emissions.

Implementation Measure AQ-2.4—Encourage those companies that ship or receive high volumes of goods by commercial truck to limit operations to non-peak hours.

Implementation Measure AQ-2.5—Encourage those companies with high truck volumes to use the Alameda Corridor.

Policy AQ-2.5—Continue to improve existing sidewalks, bicycle trails, and parkways, and require sidewalk and bicycle trail improvements and parkways for new developments.

Implementation Measure AQ-2.6—Require new developments to provide pedestrian and bicycle trails access to nearby shopping and employment centers, thereby encouraging alternate modes of transportation and reducing vehicle miles traveled.

Policy AQ-2.6---Encourage in-fill development near activity centers and along transportation routes.

Implementation Measure AQ-2.7—Encourage infill projects to provide convenience to existing facilities and minimize trip generation.

Policy AQ-2.7—Reduce air pollutant emissions by mitigating air quality impacts associated with development projects to the greatest extent possible.

Implementation Measure AQ-2.8—Prepare potential air quality mitigation measures and thresholds of significance for use in environmental documentation.

***Goal AQ-3**—Increased use of alternate fuel vehicles.*

Policy AQ-3.1—Continue to promote the use of alternative clean fueled vehicles for personal and business use. To this end, consider the use of electric, fuel cell or other non-polluting fuels for Carson Circuit buses and other City vehicles.

Policy AQ-3.2 Continue to promote ridership on the Carson Circuit and Los Angeles County Metropolitan Transportation Authority (MTA) bus and metro rail lines.

Implementation Measure AQ-IM-3.3 Develop a cooperative program to further increase transit ridership.

***Goal AQ-4**—Increased community awareness and participation in efforts to reduce air pollution and enhance air quality.*

Policy AQ-4.1—Work with the City's Public Information Office to increase public awareness regarding air quality, implementation issues, reporting and enforcement.

Implementation Measure AQ-4.1—Publicize the SCAQMD complaint telephone number.

Policy AQ-4.2—Promote and encourage ride sharing activities within the community, including such programs as preferential parking, park-and-ride lots, alternative work week/flexible working hours and telecommuting, as well as other trip reduction strategies.

Implementation Measure AQ-4.2—Continue to implement City programs and encourage other employers' programs to promote ride sharing, alternative work week schedules, and telecommuting.

Implementation Measure AQ-4.3—Coordinate with transportation agencies to establish additional park-and-ride facilities for work and non-work trip reduction.

b. Existing Conditions

(1) Regional Context

The proposed Project is located within the South Coast Air Basin, an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, in addition to the San Gorgonio Pass area in Riverside County. Its terrain and geographical location determine the distinctive climate of the Basin, as the Basin is a coastal plain with connecting broad valleys and low hills.

The Southern California region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the Basin, making it an area of high pollution potential.

The greatest air pollution impacts throughout the Basin occur from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the Basin vary with location, season, and time of day. Ozone concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the Basin and adjacent desert. Over the past 30 years, substantial progress has been made in reducing air pollution levels in southern California.

The SCAQMD has published a Basin-wide air toxics study (MATES II, Multiple Air Toxics Exposure Study, March 2000). The MATES II study represents one of the most comprehensive air toxics studies ever conducted in an urban environment. The study was aimed

at determining the cancer risk from toxic air emissions throughout the Basin by conducting a comprehensive monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to fully characterize health risks for those living in the Basin. The study concluded that the average carcinogenic risk in the Basin is approximately 1,400 in one million. Mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors. Approximately 70 percent of all risk is attributed to diesel particulate emissions, approximately 20 percent to other toxics associated with mobile sources (including benzene, butadiene, and formaldehyde), and approximately 10 percent of all carcinogenic risk is attributed to stationary sources (which include industries and other certain businesses, such as dry cleaners and chrome plating operations). The SCAQMD is in the process of updating the MATES II Study with a MATES III Study.

The ARB prepares a series of maps that show regional trends in estimated outdoor inhalable cancer risk from air toxic emissions in an ongoing effort to provide insight as to the relative risk. The estimates represent the number of potential cancers per million people based on a lifetime of breathing air toxics (i.e., 24 hours per day outdoors for 70 years). The Year 2001 Southern Los Angeles County map, which is the most recently available map to represent existing conditions, is provided in Figure 35 on page 367. As shown in Figure 35, the cancer risk ranges from 100 to 1,500 cancers per million, while the vast majority of the area is between 250 and 1,000 cancers per million.[97] Generally, the risk from air toxics is lower near the coastline and increases inland, with higher risks concentrated near large diesel sources (e.g., freeways, airports, and ports).

The data from the SCAQMD and ARB provide a slightly different range of risk. This difference is primarily related to the fact that the SCAQMD risk is based on monitored pollutant concentrations and the ARB risk is based on dispersion modeling and emission inventories. Regardless, the SCAQMD and ARB data shows that there is an inherent health risk associated with living in urbanized areas of the Basin, where mobile sources (e.g., cars, trucks, trains, ships, aircraft, etc.) represent the greatest contributors to the overall risk.

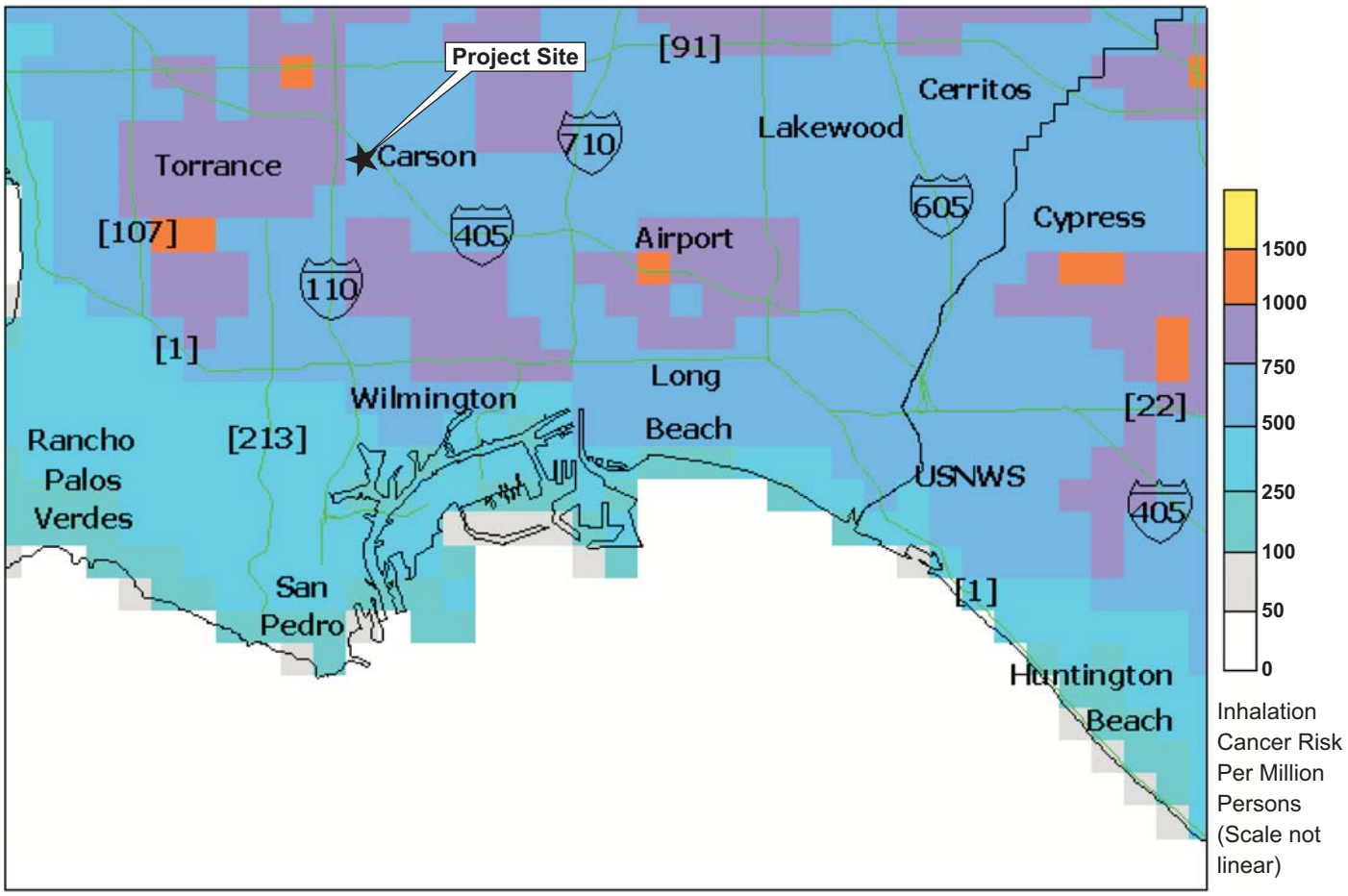
(2) Local Area Conditions

(a) Existing Pollutant Levels at Nearby Monitoring Stations

The SCAQMD maintains a network of air quality monitoring stations located throughout the South Coast Air Basin and has divided the Basin into air monitoring areas. The monitoring station closest to the Project site is the North Long Beach Monitoring Station, located at 3648 Long Beach Boulevard, approximately 6 miles southeast of the Project site. All criteria pollutants are monitored at this station (O_3, CO, NO_X, SO_2, PM_{10} and $PM_{2.5}$). The most recent

[97] *http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/riskmapviewfull.htm.*

Total Risk (diesel + nondiesel)
Southern LA County: 2001 Cancer Risk Per Million
All Sources



Source: See ARB web site: http//www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.html

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Figure 35
Total Cancer Risk for Southern Los Angeles County

data available from this monitoring station encompasses the years 2000 to 2004. The data, shown in Table 34 on pages 369 and 370, show the following pollutant trends:

Ozone. During the 2000 to 2004 reporting period, the maximum one-hour ozone concentration was recorded in 2000 at 0.12 ppm. An exceedance of the California one-hour ozone standard (0.09 ppm) was recorded three days in 2001 and one day in 2003. The National standard of 0.12 ppm was not exceeded during the monitored years. The maximum eight-hour ozone concentration recorded during the reporting period was 0.08 ppm, which was also reported in 2000. During the 2000 to 2004 reporting period, the National standard of 0.08 ppm was not exceeded.

Particulate Matter (PM_{10}). The highest recorded concentration during the reporting period occurred in 2000 and was 105 micrograms per cubic meter ($\mu g/m^3$) of air particulates. During the reporting period, the California PM_{10} standard was exceeded between 2 and 12 times annually, with the highest number of exceedances in 2000 and 2001. No exceedances of the National standard occurred between the years 2000 to 2004. The highest annual arithmetic mean recorded was 37 $\mu g/m^3$ in 2001. The highest annual geometric mean recorded was 37 $\mu g/m^3$ also in 2001.

Particulate Matter ($PM_{2.5}$). The highest recorded concentration during the reporting period was 115 $\mu g/m^3$ in 2003. The National standard was exceeded between zero and 4 times annually, with the highest number of exceedances in 2000. The highest annual arithmetic mean recorded was 21 $\mu g/m^3$ in 2001. During the 2000 to 2004 reporting period, the California annual average standard of 12 $\mu g/m^3$ was exceeded each year.

Carbon Monoxide. The highest 1-hour CO concentration was 10 ppm and the highest 8-hour CO concentration was 6 ppm, both reported in 2000. Neither the California nor the National CO standards were exceeded during the 2000 to 2004 reporting period.

Nitrogen Dioxide. The highest one-hour concentration of NO_2 was recorded in 2000 and 2003, at 0.14 ppm. The annual arithmetic mean during the 2000 to 2004 reporting period was consistently at 0.03 ppm. Neither the California nor the National NO_2 standards were exceeded during the 2000 to 2004 reporting period shown.

Sulfur Dioxide. The highest one-hour concentration was 0.05 ppm, recorded in 2000 and 2001. The 24-hour concentrations recorded were 0.01 ppm for each of the years during the reporting period and the annual arithmetic mean was 0.002 from 2000 to 2003 and was recorded as 0.005 ppm in 2004. No exceedances of the California or the National SO_2 standards were recorded during this reporting period.

Table 34

Pollutant Standards and Ambient Air Quality Data[a]

Pollutant/Standard	2000	2001	2002	2003	2004
Ozone (O_3)					
O_3 (1-hour)					
Maximum Concentration (ppm)	0.12	0.09	0.08	0.10	0.09
Days > CAAQS (0.09 ppm)	3	0	0	1	0
Days > NAAQS (0.12 ppm)	0	0	0	0	0
O_3 (8-hour)					
Maximum Concentration (ppm)	0.08	0.07	0.06	0.07	0.07
Days > NAAQS (0.08 ppm)	0	0	0	0	0
Particulate Matter (PM_{10})					
PM_{10} (24-hour)					
Maximum Concentration ($\mu g/m^3$)	105	91	74	63	72
Days > CAAQS (50 $\mu g/m^3$) [b]	12	10	5	4	2
Days > NAAQS (150 $\mu g/m^3$) [b]	0	0	0	0	0
PM_{10} (Annual Average)					
Annual Arithmetic Mean (50 $\mu g/m^3$)	36	37	33	30	33
Annual Geometric Mean (20 $\mu g/m^3$)	N/A	37	33	30	N/A
Particulate Matter ($PM_{2.5}$)					
$PM_{2.5}$ (24-hour)					
Maximum Concentration ($\mu g/m^3$)	82	73	63	115	67
Days > NAAQS (65 $\mu g/m^3$)	4	1	0	3	1
$PM_{2.5}$ (Annual Average)					
Annual Geometric Mean (12 $\mu g/m^3$)	20	21	20	18	18
Carbon Monoxide (CO)					
CO (1-hour)					
Maximum Concentration (ppm)	10	6	6	6	4
Days > CAAQS (20 ppm)	0	0	0	0	0
Days > NAAQS (35 ppm)	0	0	0	0	0
CO (8-hour)					
Maximum Concentration (ppm)	6	5	5	5	3
Days > CAAQS (9 ppm)	0	0	0	0	0
Days > NAAQS (9 ppm)	0	0	0	0	0

Table 34 (Continued)

Pollutant Standards and Ambient Air Quality Data

Pollutant/Standard	2000	2001	2002	2003	2004
Nitrogen Dioxide (NO_2)					
NO_2 (1-hour—State Standard)					
Maximum Concentration (ppm)	0.14	0.12	0.12	0.14	0.12
Days > CAAQS (0.25 ppm)	0	0	0	0	0
NO_2 (Annual Average—National Standard))					
Annual Arithmetic Mean (0.05 ppm)					
Days > NAAQS (0.05 ppm)	0.03	0.03	0.03	0.03	0.03
	0	0	0	0	0
Sulfur Dioxide (SO_2)					
SO_2 (1-hour)					
Maximum Concentration (ppm)	0.05	0.05	0.03	0.03	0.04
Days > CAAQS (0.25 ppm)	0	0	0	0	0
SO_2 (24-hour)					
Maximum Concentration (ppm)	0.01	0.01	0.01	0.01	0.01
Days > CAAQS (0.04 ppm)	0	0	0	0	0
Days > NAAQS (0.14 ppm)	0	0	0	0	0
SO_2 (Annual Average)					
Annual Arithmetic Mean	0.002	0.002	0.002	0.002	N/A
Days > NAAQS (0.03 ppm)	0	0	0	0	0

[a] *ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; N/A = not available*

Ambient data for all pollutants were obtained from the North Long Beach monitoring station closest to the project site (approximately 6 mile southeast of the project site.

Ambient data for airborne lead is not included in this table since the Basin is currently in compliance with state and national standards for lead.

[b] *Measurements are usually collected every six days. Measured days counts the days that a measurement was greater than the level of the standard*

[c] *Insufficient data available to determine the value*

Source: California Air Resources Board, Ambient Monitoring Data 2000–2004.

Lead. The Basin is currently in compliance with California and National standards for Pb and, therefore, no ambient data for airborne Pb is available for the applicable monitoring stations.

(b) Existing Health Risk in the Surrounding Area

As shown above in Figure 36 on page 372, the project site is located within a cancer risk zone of 500 to 750 in one million. However, the visual resolution available in the map is 1 kilometer by 1 kilometer and, thus, impacts from individual facilities for individual neighborhoods are not discernable on this map. In general, the project site is indicative of other areas in Carson.

(c) Sensitive Receptors and Locations

Some population groups, such as children, the elderly, and acutely and chronically ill persons, especially those with cardio-respiratory diseases, are considered more sensitive to air pollution than others. Sensitive land uses in the Project vicinity are shown in Figure 36 and include one- and two-story detached residences and mobile homes that are located to the south and west of the Project site. The closest residences are located approximately 150 feet from the Project site boundary. Other potentially sensitive uses in the more distant area include multi-family and single-family residences, schools, libraries, religious institutions, hospitals and nursing homes. The closest school to the Project site is the Carson Street Elementary School, which is located approximately half a mile to the south of the Project site.

The Project site is bounded by a nursery and the Dominguez Hills Golf Course to the north, the Torrance Lateral Flood Control Channel and residential uses to the south and west, industrial uses to the west and the I-405 Freeway to the east. In a larger context, the Project site is surrounded by various uses. East of the I-405 Freeway, land uses include neighborhood and regional retail shopping, most notably the South Bay Pavilion. To the north and east of the Project site and the I-405 Freeway is the Victoria golf course, with single-family residential uses located to the east. To the west of the Project site extending away from the site on Torrance and Del Amo Boulevards are commercial and light industrial uses. Further north on Main Street are several light industrial uses.

3. ENVIRONMENTAL IMPACTS

a. Significance Thresholds

The City of Carson has not adopted specific Citywide significance thresholds for air quality impacts. Because of the SCAQMD's regulatory role in the Basin, the SCAQMD *CEQA*

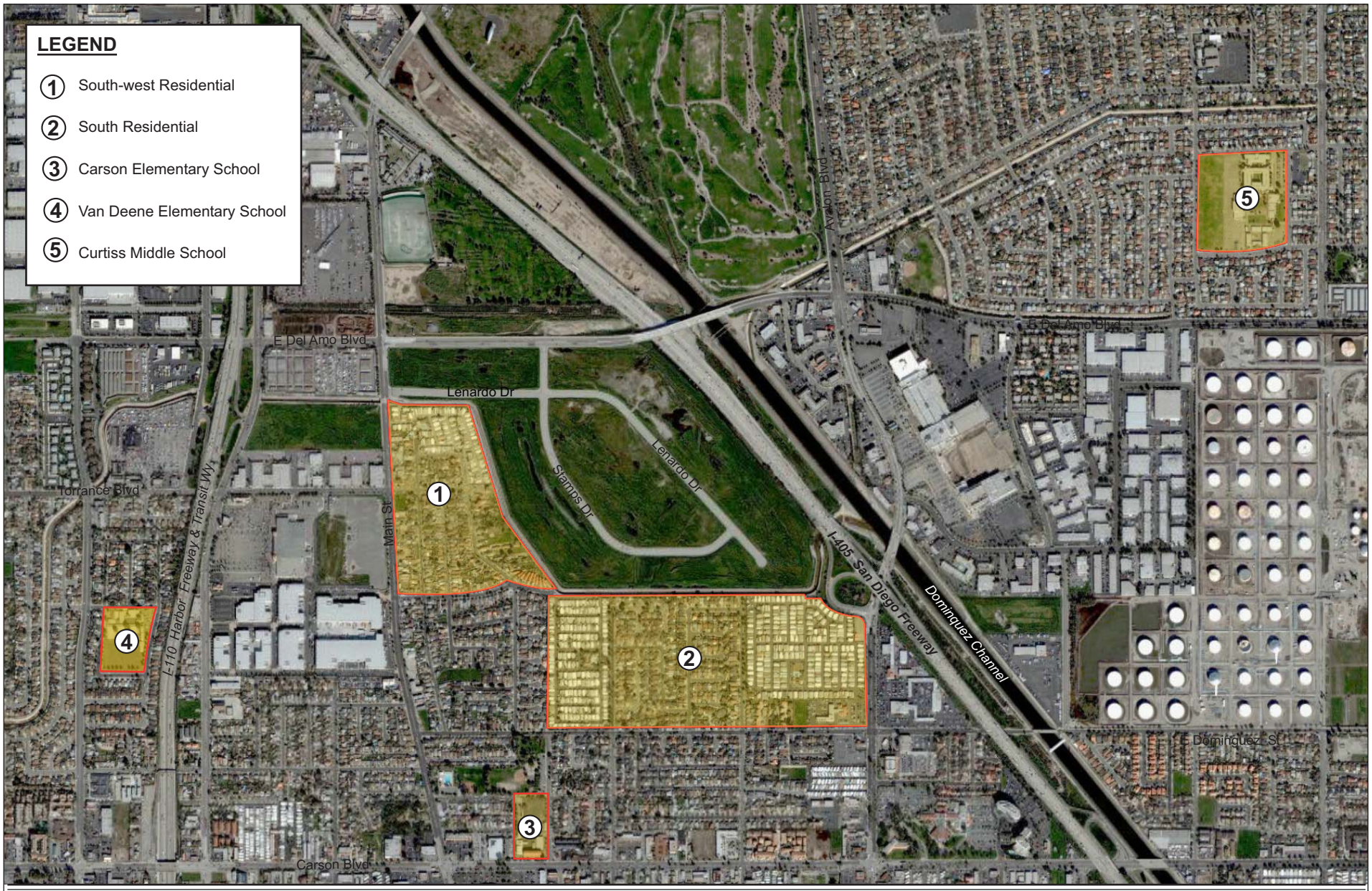

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Figure 36
Air Quality Sensitive Receptor Locations

Source: Keyhole 2004

Air Quality Handbook was used to establish the screening criteria, significance thresholds, and analysis methodologies.

(1) Construction Emissions

The proposed Project would have a significant impact with regard to construction emissions if any of the following occur:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 75 pounds per day (lbs/day) for ROC; (2) 100 lbs/day for NO_X; (3) 550 lbs/day for CO; and (4) 150 lbs/day for PM_{10} or SO_X.[98]

- Project-related fugitive dust and construction equipment combustion emissions cause an incremental increase in localized PM_{10} concentrations of 10.4 $\mu g/m^3$ or cause a violation of NO_2 or CO ambient air quality standards.[99]

- Increased landfill gas emissions cause an incremental health risk to on- or off-site receptors as regulated by the SCAQMD and DTSC.

- The proposed Project creates objectionable odors affecting a substantial number of people.

(2) Operational Emissions

The proposed Project would have a significant impact with regard to operational emissions if any of the following occur:

- Regional emissions from both direct and indirect sources would exceed any of the following SCAQMD prescribed threshold levels: (1) 55 pounds per day (lbs/day) for ROC; (2) 55 lbs/day for NO_X; (3) 550 lbs/day for CO; and (4) 150 lbs/day for PM_{10} or SO_X.[100]

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[98] *South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project), 1993.*

[99] *While the SCAQMD CEQA Air Quality Handbook (CEQA Handbook, 1993), does not provide any localized thresholds, the SCAQMD currently recommends localized significance thresholds (LST) for PM_{10}, NO_2, and CO in its draft document titled "SCAQMD Localized Significance Threshold Methodology for CEQA Evaluations (SCAQMD LST Guidelines)," June 19, 2003.*

[100] *South Coast Air Quality Management District, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project), 1993.*

- The proposed Project results in an exceedance of the California 1-hour or 8-hour CO standards of 20 or 9.0 ppm, respectively, at an intersection or roadway within one-quarter mile of a sensitive receptor.

- Project-related stationary source combustion equipment emissions cause an incremental increase in localized PM_{10} concentrations of 2.5 $\mu g/m^3$.[101]

- The proposed Project creates objectionable odors affecting a substantial number of people.

- The proposed Project is incompatible with SCAQMD and SCAG air quality policies. The proposed Project would not be compatible with these polices if it:

  – causes an increase in the frequency or severity of existing air quality violations;

  – causes or contributes to new air quality violations;

  – delays timely attainment of air quality standards or the interim emission reductions specified in the AQMP; or

  – exceeds the assumptions utilized in the SCAQMD's AQMP.

- The proposed Project is incompatible with City of Carson air quality policies. The proposed Project would not be compatible with these policies if it does not substantially comply with the air quality goals and policies set forth within the City's General Plan.

(3) Toxic Air Contaminants

The proposed Project would have a significant impact with regard to toxic air contaminants if any of the following occur:

- On-site stationary sources emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million or an acute or chronic hazard index of 1.0.[102]

[101] *While the SCAQMD CEQA Air Quality Handbook (CEQA Handbook, 1993), does not provide any localized thresholds, the SCAQMD currently recommends localized significance thresholds (LST) for PM_{10}, NO_2, and CO in its document titled "SCAQMD Localized Significance Threshold Methodology for CEQA Evaluations (SCAQMD LST Guidelines)," June 19, 2003.*

[102] *SCAQMD Risk Assessment Procedures for Rules 1401 and 212, November 1998.*

- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.

- Hazardous materials associated with the landfill that result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.

- The Project would be occupied primarily by sensitive individuals within a quarter mile of any existing facility that emits air toxic contaminants that could result in a health risk for pollutants identified in District Rule 1401.[103]

b. Project Features

The following design features result in a reduction in air quality emissions and are proposed as part of the Project.

Construction

- On-site heavy-duty construction equipment would be equipped with diesel particulate traps, as feasible.

- Land uses that would locate on the Project site would be limited to those that do not emit high levels of potentially toxic contaminants or odors.

- Limiting excavations to avoid exposing landfill contents.

Operation

A primary objective in the design of the proposed Project is to create a development which minimizes the air pollutant emissions that are generated by the Project. To achieve this objective, the Applicant focused on reducing the number of vehicle trips as well as vehicle miles traveled. This approach to minimizing pollutant emissions implements the policy direction provided by the Southern California Association of Governments for land development projects such as the Carson Marketplace. The design program incorporated into the proposed Project to minimize pollutant emissions consists of the choice and organization of land uses within the Carson Marketplace. The following are the key Project elements that implement this design program:

[103] *SCAQMD, CEQA Air Quality Handbook, Chapter 6 (Determining the Air Quality Significance of a Project).*

- The proposed array of residential, retail, and office uses would, in itself, promote a reduction of mobile source emissions by providing a supply of housing as well as employment opportunities within close proximity to one another, making it possible for an individual to both reside and work within the Project site (jobs/housing linkage).

- The placement of commercial and office uses in the design of the Carson Marketplace serves the objective of minimizing mobile source pollutant emissions. Office and commercial uses that would be developed within the proposed Project would be located in close proximity to the access ramps of the San Diego (I-405) and Harbor (I-110) Freeways. Such concentration and placement are intended to reduce vehicle miles traveled within the Project site and within the region and subregion by reducing commute distances for non-resident workers. The provision of commercial and office space in close proximity to existing and proposed residential uses increases the probability that residents may work nearer to their home, thus reducing the vehicle miles traveled.

- The Project would include an impervious barrier to control odiferous and air toxic emissions in compliance with the approved RAP.

- All stationary-source emissions sources (e.g., emergency generator) would utilize Best Available Control Technology (BACT) to meet SCAQMD requirements.

c. Methodology

The evaluation of potential impacts to local and regional air quality that may result from the construction and long-term operations of the proposed Project is based on the following methodological approach:

(1) Regional Criteria Pollutant Impacts

(a) Construction Impacts

Daily regional emissions during construction were forecasted by assuming an aggressive construction schedule (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile-source and fugitive dust emissions factors derived from URBEMIS 2002.[104] For development, the construction process included site preparation (clearing, grubbing, deep

[104] *URBEMIS 2002 is an emissions estimation/evaluation model developed by the ARB that is based, in part, on SCAQMD CEQA Air Quality Handbook guidelines and methodologies.*

dynamic compaction, and grading), utilities and road construction, pile driving, and building construction/finishing.

(b) Operational Impacts

Project operations refer to activities that would occur at a Project site when construction is complete and the site has been occupied with its intended use. Emissions from Project operations can be divided into three main categories: (1) indirect sources; (2) area sources; and (3) stationary sources. Indirect sources are defined as buildings, facilities, structures, or properties that attract or generate mobile source activity (autos and trucks). This includes shopping centers, employment sites, schools, housing developments, etc. Area sources are sources that individually emit small quantities of air pollutants, but which cumulatively may represent significant quantities of emissions. Water heaters, fireplaces, wood heaters, lawn maintenance equipment, and the application of paints and lacquers during maintenance activities are examples of area source emissions. Stationary, or point, sources are equipment or devices operating at industrial and commercial facilities that directly emit air pollutants. Examples of facilities with stationary sources include manufacturing plants, power plants, print shops, and gasoline stations. The SCAQMD recommends that impact assessments should evaluate all three categories of emissions when determining impacts from a project's operations.

(i) Mobile-Source Emissions

The SCAQMD recommends using URBEMIS2002 for calculating indirect emissions from development projects. The air quality analysis incorporated model default values, with the following exception. Project-specific trip-generation rates were incorporated into the analysis based on the Project's traffic study.[105] In calculating mobile-source emissions, the URBEMIS 2002 default trip length assumptions were applied to the average daily trip estimates provided by the Project's traffic consultant to arrive at vehicle miles traveled.

(ii) Stationary Sources

The SCAQMD recommends that URBEMIS2002 be used to calculate area source emissions. The program allows you to estimate area-source emissions for natural gas fuel consumption from space and water heating, wood stove and fireplace combustion emissions, landscape maintenance equipment, and consumer products. Consumer products include reactive organic compound emissions released through the use of products such as hair sprays and deodorants. URBEMIS2002 default assumptions were used for evaluating area source emissions.

[105] *Kaku and Associates, Traffic Impact Study for the Carson Marketplace, August 2005.*

Pollutant emissions associated with energy demand (i.e., electricity generation) are classified by the SCAQMD as regional stationary-source emissions. Electricity is produced at various locations within, as well as outside of, the Basin. Since it is not possible to isolate where electricity is produced, these emissions are conservatively considered to occur within the Basin and are regional in nature. Criteria pollutant emissions associated with the production and consumption of energy were calculated using emission factors from the SCAQMD's CEQA Air Quality Handbook, 1993.

(2) Localized Criteria Pollutant Impacts (Construction and Operations)

The localized effects from the on-site construction emissions were evaluated to determine potential pollutant concentrations at each sensitive receptor location. The analysis was conducted using the Industrial Source Complex (ISCST3) dispersion model, a methodology that is consistent with the procedures outlined in the USEPA *1998 Guideline on Air Quality Models* and the SCAQMD *Localized Significance Threshold Methodology for CEQA Evaluations* guidance documents. A complete listing of the construction equipment by phase, construction phase duration, emissions estimation model and dispersion model input assumptions used in this analysis are included in the emissions calculation worksheets provided in Appendix F of this Draft EIR.

Local area CO concentrations for roadways were evaluated using the CALINE4 traffic pollutant dispersion model, developed by Caltrans and recommended by the SCAQMD, in combination with Emfac2002 emission factors. The analysis of roadway CO impacts followed the protocol recommended by Caltrans and published in the document titled *Transportation Project-Level Carbon Monoxide Protocol*, December 1997. The protocol recommends a hotspot evaluation of potential localized CO impacts when volume-to-capacity ratios increase by 2 percent at intersections with a level of service (LOS) of C or worse. All four corners of each intersection were then analyzed with receptor locations positioned 3 meters from each intersection for the 1-hour analysis and 7 meters for the 8-hour analysis. The estimated CO concentrations from the CALINE4 modeling results were then compared to State and federal CO standards to determine whether the project would have a significant air quality impact.

Localized PM_{10} concentrations related to operation of proposed Project stationary-source combustion equipment are evaluated by conducting a screening-level analysis followed by a more detailed analysis (i.e., dispersion modeling) as necessary. The screening-level analysis consists of reviewing the proposed Project's site plan and Project description to identify any new or modified stationary-source combustion equipment sources. If it is determined that the proposed Project would introduce a new stationary-source combustion equipment source, or modify an existing stationary-source combustion equipment source, then downwind sensitive receptor locations are identified and site-specific dispersion modeling is conducted to determine

proposed Project impacts. All emissions calculation worksheets and air quality modeling output files are provided in Appendix F of this Draft EIR.

(3) Toxic Air Contaminants (TAC) Impacts (Construction and Operations)

Potential off-site TAC impacts are evaluated by conducting a screening-level analysis followed by a more detailed analysis (i.e., dispersion modeling), as necessary. The screening-level analysis consists of reviewing the proposed Project's site plan and Project description to identify any new or modified TAC emissions sources. If it is determined that the proposed Project would introduce a new source, or modify an existing TAC emissions source, then downwind sensitive receptor locations are identified and site-specific dispersion modeling is conducted to determine proposed Project impacts.

Potential on-site TAC impacts are evaluated using ARB's *Air Quality and Land Use Handbook: A Community Health Perspective* as a general guide for considering impacts to sensitive receptors from facilities that emit TAC emissions. Coordination with SCAQMD is required to identify potential TAC emitting facilities within one-quarter mile of the proposed Project site. As the proposed Project would introduce a new sensitive land use within the ARB recommended minimum siting distances, site-specific modeling has been conducted to determine proposed Project impacts.

(4) Odor Impacts (Construction and Operations)

Potential odor impacts are evaluated by conducting a screening-level analysis followed by a more detailed analysis (i.e., dispersion modeling) as necessary. The screening-level analysis consists of reviewing the proposed Project's site plan and Project description to identify any new or modified odor sources. If it is determined that the proposed Project would introduce a new odor source, or modify an existing odor source, then downwind sensitive receptor locations are identified and site-specific dispersion modeling is conducted to determine proposed Project impacts.

d. Project Impacts

(1) Construction

(a) Regional Construction Impacts

Construction of the proposed Project and implementation of the RAPs within Development Districts 1 and 2 have the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the Project site. In addition, fugitive dust emissions would result from site preparation activities and construction of the landfill cap. Mobile source emissions,

primarily NO_X, would result from the use of construction equipment such as dozers, loaders, and cranes. During the finishing phase, paving operations and the application of architectural coatings (i.e., paints) and other building materials would release reactive organic compounds. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. The assessment of construction air quality impacts considers each of these potential sources.

The proposed Project would include up to 1,550 residential units (1,150 for-sale units and 400 rental units) and 1,995,125 square feet (sq.ft.) of commercial floor area which includes a 300-room hotel. In addition to the proposed urban development program, the proposed Project includes the remediation of the former landfill on the 157-acre portion of the Project site that is located south of Del Amo Boulevard (i.e., Development Districts 1 and 2) in compliance with the Remedial Action Plan ("RAP") approved by DTSC.

The approved RAP includes: (1) containment of the impacted soil and buried waste through the use of a clay cap; (2) extraction and treatment of the groundwater; (3) collection and treatment of landfill gas extraction; and (4) long-term monitoring of the groundwater and landfill gases. The Applicant is reviewing with DTSC the possibility of using a synthetic membrane cap rather than a clay cap for the waste prism. In addition, refinements may be used to enhance gas control and groundwater treatment. Of particular note is that changes in the design of the remediation would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment and compliant with both DTSC and SCAQMD requirements to reduce or control potential air-borne emissions associated with the former landfill. Specific details on the remedial activities that would be implemented on the landfill site are provided in Section IV.D, Hazards.

Construction and occupancy of the proposed Project is anticipated to be completed by the end of 2010. The principal phases of proposed Project construction include site preparation, implementation of the RAPs within Development Districts 1 and 2 (site remediation), off-site improvements, and site construction. Based on the Project's current construction schedule, it is anticipated that there would be some overlapping activities.

Site preparation, including mass grading, dynamic compaction, fill and cap foundation, rough grading and the establishment of building pads, is anticipated to begin in the spring of 2006 and last until the spring of 2009. Implementation of the RAPs, including the installation of the cap as well as the installation of the requisite containment, collection and treatment facilities, is anticipated to begin in summer 2007 and last until fall 2008. Construction of off-site improvements would begin in the winter of 2007 and end in the fall of 2008. Site construction, including the placement of piles, the establishment of structural slabs, utility installation, building construction, roads, parking lots and landscaping, is anticipated to begin in the winter of 2008 and be completed by the end of 2010.

Implementation of the proposed refinements to the RAP design by using a synthetic membrane cap and alternative technology would require a slight modification to the construction schedule. Without the need for a clay cap, the intensity of excavation and amount of clay imported would be reduced dramatically.

As such, under this scenario, site preparation, including mass grading, dynamic compaction, fill and cap foundation, rough grading and building pads, is anticipated to begin April 2007 and last until April 2009. Remediation construction, including construction of the cap and collection and treatment facilities, is anticipated to begin July 2007 and last until September 2008. Site construction, including piles, structural slab, utilities, buildings, roads, parking lots and landscaping, is anticipated to begin January 2008 and be complete by April 2010. In order to provide a conservative analysis it was assumed that all construction would be completed within four to five years following entitlement. This assumption is conservative as it represents the minimum timeframe anticipated for the construction of any particular building and concentrates the construction duration so it is occurring concurrently and at the earliest feasible date within the Project's overall development period. This is of particular importance as construction emissions are directly related to the duration and intensity of construction activities (i.e., emissions increase as the amount of construction increases). Emission rates representative of certain stages of construction (i.e., construction worker trips and delivery vehicle trips) can also decrease over time, as emission factors for these vehicles or equipment decrease in future years. The phasing and duration of construction activities (i.e., demolition, site preparation/excavation, and building construction/finishing) and the equipment that would be used under each construction phase is provided in Appendix F of this Draft EIR.

An analysis of peak construction emissions was performed for both the approved RAP and the proposed refinements to the RAP design. Construction emissions with implementation of the approved RAP are presented in Table 35 on page 382. As shown in Table 35, construction-related daily emissions of SO_X and PM_{10} would be considered adverse, but less than significant, as the estimated emissions for these pollutants would fall below their respective SCAQMD significance thresholds. However, construction-related daily emissions of ROC, CO, and NO_x would be considered significant without incorporation of mitigation measures as the estimated emissions for these pollutants would exceed their respective SCAQMD significance thresholds.

Peak construction emissions with implementation of the proposed refinements to the RAP design are presented in Table 36 on page 383. As shown in Table 36, construction-related daily net emissions of SO_X and PM_{10} would be considered adverse, but less than significant, as the estimated emissions for these pollutants would fall below their respective SCAQMD significance thresholds. However, construction-related daily emissions of ROC, CO, and NO_x would be considered significant without incorporation of mitigation measures as the estimated emissions for these pollutants would exceed their respective SCAQMD significance thresholds.

Table 35

Conservative Estimate of Emissions During Construction [a]
Approved RAP Design (Unmitigated)
(lbs/day)

	ROC	NO_X	CO	SO_X	PM_{10} [b]
Maximum Daily Emissions					
On-site	1,665	996	1,272	0	1,394
Off-site (Truck and Employee Trips)	17	329	152	0	6
Total [b]	1,679	1,286	1,424	0	1,400
SCAQMD Daily Significance Threshold	75	100	550	150	150
Over (Under)	1,604	1,186	874	(150)	1,250
Significant?	**Yes**	**Yes**	**Yes**	**No**	**Yes**

[a] *Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values. Exact values (i.e., non-rounded) are provided in the URBEMIS model printout sheets and/or calculation worksheets that are presented in Appendix F.*

[b] *On-site and off-site maximum emissions represent the maximum emissions that may occur throughout the duration of the Project and therefore may not occur at the same time. Maximum on-site and off-site emissions may not add up to total emissions.*

[c] *PM_{10} emission estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries. A copy of SCAQMD Rule 403 is included in Appendix F. It is assumed that all on-site equipment would be equipped with diesel particulate traps*

Source: PCR Services Corporation, 2005. Construction emission calculation worksheets are included in Appendix F of this EIR.

A comparison of construction emissions associated with the two scenarios shows that combined peak daily construction emissions from development and implementation of the proposed refinements to the RAP design would be reduced by 1 percent for ROC, 15 percent for NO_x, 15 percent for CO, 9 percent for PM_{10}, and similar emissions for SO_x in comparison to combined peak daily construction emissions from development and implementation of the approved RAP. However, both scenarios substantially exceed the SCAQMD significance thresholds for ROC, CO, and NO_x emissions.

These emission forecasts reflect a specific set of conservative assumptions in which the entire Project would be built out over a four to five year time period. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

Table 36

Conservative Estimate of Emissions During Construction [a]
Proposed RAP Design Refinements (Unmitigated)
(lbs/day)

	ROC	NO_X	CO	SO_X	PM_{10} [b]
Maximum Daily Emissions					
On-site	1,648	843	1,078	<1	1,275
Off-site (Truck and Employee Trips)	14	20	131	<1	1
Total [b]	1,662	851	1,121	<1	1,275
SCAQMD Daily Significance Threshold	75	100	550	150	150
Over (Under)	1,587	751	571	(150)	1,125
Significant?	**Yes**	**Yes**	**Yes**	**No**	**Yes**
	1,662	851	1,121	<1	1,275

[a] *Emission quantities are rounded to "whole number" values. As such, the "total" values presented herein may be one unit more or less than actual values. Exact values (i.e., non-rounded) are provided in the URBEMIS model printout sheets and/or calculation worksheets that are presented in Appendix F.*

[b] *On-site and off-site maximum emissions represent the maximum emissions that may occur throughout the duration of the project and therefore may not occur at the same time. Maximum on-site and off-site emissions may not add up to total emissions.*

[b] *PM_{10} emission estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, which require that no visible dust be present beyond the site boundaries. A copy of SCAQMD Rule 403 is included in Appendix F. It is assumed that all on-site equipment will be equipped with diesel particulate traps*

Source: PCR Services Corporation, 2005. Construction emission calculation worksheets are included in Appendix F of this EIR.

(b) Localized Construction Impacts

An analysis of localized construction impacts was conducted based on the SCAQMD's recommended Localized Significance Thresholds (LSTs) for PM_{10}, NO_2 and CO using the ISC3-ST microscale dispersion model as specified in the USEPA *1998 Guideline on Air Quality Models*. The maximum estimates of mass daily emissions discussed above were used as inputs into the ISC3-ST model to ascertain potential air pollutant concentrations at nearby sensitive receptor locations. The dispersion analysis evaluated two scenarios for both the approved RAP and the proposed refinements to the RAP design in order to estimate the maximum potential pollutant concentration for PM_{10}, CO and NO_X at each sensitive receptor location. Scenario 1 under the approved RAP and the proposed RAP design refinements would generally be considered the conservative case scenario as it assumes that the maximum mass daily emissions during construction are concentrated along the southern boundary of the Project site, adjacent to the closest residential receptors. Scenario 2 would be considered the average scenario and assumes that the maximum mass daily emissions are spread out over the entire site, which represents construction occurring at any place within the Project site.

These analysis scenarios would concentrate concurrent construction activity in different areas of the proposed Project site to ascertain the maximum impact to localized air quality at each sensitive receptor location. The ISC3-ST model was run using meteorological data from the SCAQMD Long Beach Monitoring Station, which is available from the SCAQMD web site (www.aqmd.gov).

The results of the localized analysis for approved RAP and proposed RAP are presented in Table 37 and Table 38 on pages 385 and 386, respectively. Under the analyzed scenarios, the potential maximum CO (1-hour and 8-hour) and NO_2 concentrations, when added to background ambient concentrations, would not violate their respective AAQS at any of the sensitive receptor locations. As such, localized impacts with respect to these localized pollutant concentrations during construction would be less than significant.

With respect to localized PM_{10} impacts during construction, a summary of potential maximum impacts to sensitive receptors that are shown in Figure 36 is provided below:

- Residential (Southwest) A potential maximum PM_{10} concentration level attributable to the proposed Project of 173 $\mu g/m^3$ could occur at this sensitive receptor location during the concurrent site preparation activities under Scenario 1 with the approved RAP. This level would exceed the SCAQMD significance threshold of 10.4 $\mu g/m^3$. With implementation of the proposed RAP design refinements, the PM_{10} concentration under Scenario 1 would be reduced to 158 $\mu g/m^3$. Scenario 2 PM_{10} concentrations for the approved and proposed RAP design refinements would be 100 and 91 $\mu g/m^3$, respectively. Although these concentrations are lower than Scenario 1 with the approved RAP, they would still have the potential to exceed the SCAQMD significance threshold of 10.4 $\mu g/m^3$. These potential impacts represent conditions during site grading activities and implementation of the RAPs and would be reduced as site grading activities conclude near the site perimeter and move more centrally to the Project site.

- Residential (South) A potential maximum PM_{10} concentration level attributable to the proposed Project of 146 $\mu g/m^3$ could occur at this sensitive receptor location during the concurrent site preparation activities for Scenario 1 with the approved RAP. This level would exceed the SCAQMD significance threshold of 10.4 $\mu g/m^3$. With implementation of the proposed RAP design refinements, the PM_{10} concentration for Scenario 1 would be reduced to 133 $\mu g/m^3$. Scenario 2 PM_{10} concentrations for the approved and proposed RAP design refinements would be 96 and 92 $\mu g/m^3$, respectively. Although these concentrations are lower than Scenario 1, they would still have the potential to exceed the SCAQMD significance threshold of 10.4 $\mu g/m^3$. These potential impacts represent conditions during site grading

Table 37

Estimate of Unmitigated Local Construction Impacts (Approved RAP)

Pollutant	Maximum Increase in Ambient Concentrations				
	Residential (South-west)	Residential (South)	Carson Elementary School (South)	Van Deene Elementary School (West)	Curtiss Middle School (East)
PM_{10} (24-Hour)					
Maximum Increase (µg/m^3)	173	146	31	16	9.2
Threshold (µg/m^3)[a]	10.4	10.4	10.4	10.4	10.4
Over/(Under)	163	136	20	6	(1)
Significant Impact	Yes	Yes	Yes	Yes	No
NO_2 (1-hour)					
Maximum Increase (µg/m^3)	94	113	25	16	9
Threshold (µg/m^3)	207	207	207	207	207
Over/(Under)	(113)	(94)	(182)	(191)	(198)
Adverse Concentration	No	No	No	No	No
CO (1-Hour)					
Maximum Increase (µg/m^3)	1,207	1,443	321	200	118
Threshold (µg/m^3)	11,500	11,500	11,500	11,500	11,500
Over/(Under)	(10,293)	(10,057)	(11,179)	(11,300)	(11,382)
Adverse Concentration	No	No	No	No	No
CO (8-Hour)					
Maximum Increase (µg/m^3)	275	283	46	28	15
Threshold (µg/m^3)	3,674	3,674	3,674	3,674	3,674
Over/(Under)	(3,399)	(3,391)	(3,628)	(3,646)	(3,659)
Adverse Concentration	No	No	No	No	No

Source: PCR Services Corporation, 2005.

activities and implementation of the RAPs and would be reduced as site grading activities conclude near the site perimeter and move more centrally to the Project site.

- Carson Elementary School (South) A potential maximum PM_{10} concentration level attributable to the proposed Project of 31 µg/m^3 could occur at this sensitive receptor location during the concurrent site preparation activities under Scenario 1 with the approved RAP and 28 µg/m with the proposed RAP. This level would exceed the SCAQMD significance threshold of 10.4 µg/m^3. Scenario 2 PM_{10} concentrations for the approved and proposed RAP design refinements would be 25 µg/m^3 and 24 µg/m^3 respectively. Although these concentrations are lower than Scenario 1, they would still have the potential to exceed the SCAQMD significance threshold of 10.4 µg/m^3.

- Van Deene Elementary School (West) A potential maximum PM_{10} concentration level attributable to the proposed Project of 16 µg/m^3 could occur at this sensitive

Table 38

Estimate of Unmitigated Local Construction Impacts
(Proposed RAP Design Refinements)

Pollutant	Maximum Increase in Ambient Concentrations				
	Residential (South-west)	Residential (South)	Carson Elementary School (South)	Van Deene Elementary School (West)	Curtiss Middle School (East)
PM_{10} (24-Hour)					
Maximum Increase (µg/m^3)	158	133	28	15	8
Threshold (µg/m^3)[a]	10.4	10.4	10.4	10.4	10.4
Over/(Under)	148	123	18	4	(2)
Significant Impact	Yes	Yes	Yes	Yes	No
NO_2 (1-hour)					
Maximum Increase (µg/m^3)	80	96	21	13	8
Threshold (µg/m^3)	207	207	207	207	207
Over/(Under)	(127)	(111)	(186)	(194)	(199)
Adverse Concentration	No	No	No	No	No
CO (1-Hour)					
Maximum Increase (µg/m^3)	1,022	1,222	272	169	100
Threshold (µg/m^3)	11,500	11,500	11,500	11,500	11,500
Over/(Under)	(10,478)	(10,278)	(11,228)	(11,331)	(11,400)
Adverse Concentration	No	No	No	No	No
CO (8-Hour)					
Maximum Increase (µg/m^3)	233	240	39	24	13
Threshold (µg/m^3)	3,674	3,674	3,674	3,674	3,674
Over/(Under)	(3,441)	(3,434)	(3,635)	(3,650)	(3,661)
Adverse Concentration	No	No	No	No	No

Source: PCR Services Corporation, 2005.

receptor location during the concurrent site preparation activities under Scenario 1 with the approved RAP and 15 µg/m^3 with the proposed RAP. This level would exceed the SCAQMD significance threshold of 10.4 µg/m^3. Scenario 2 for both the approved and proposed RAP design refinements would be 13 µg/m^3. Although these concentrations are lower than Scenario 1, they would still have the potential to exceed the SCAQMD significance threshold of 10.4 µg/m^3.

- Curtiss Middle School (East) A potential maximum PM_{10} concentration level attributable to the proposed Project of 11.2 µg/m^3 and 10.8 µg/m^3 could occur at this sensitive receptor location during the concurrent site preparation activities under Scenario 2 with the proposed and approved RAP design refinements respectively. This level would exceed the SCAQMD significance threshold of 10.4 µg/m^3.

Scenario 1 for both the approved and proposed RAP design refinements would be 9.2 $\mu g/m^3$ and 8.0 $\mu g/m^3$ respectively.

With respect to localized PM_{10} impacts during construction, the PM_{10} concentration contribution attributable to on-site construction activity could potentially exceed the 10.4 $\mu g/m^3$ SCAQMD significance threshold at residential receptors located south of the Project site. As such, localized PM_{10} impacts are considered significant without the incorporation of mitigation measures. Modeling input parameters are detailed in the ISC-ST3 printout sheets, which are provided in Appendix F of this Draft EIR.

(c) Toxic Air Contaminants

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. An assessment of diesel particulate emissions was conducted to assess this potential risk using the same assumptions used for the localized analysis discussed above and incorporation of the diesel particulate trap Project design feature. As such, this analysis includes all diesel exhaust emissions associated with on-site heavy equipment and haul trucks during the construction period. The results of this analysis for both the approved and proposed RAP yields a maximum offsite individual cancer risk of 1.2 in a million southwest of the Project site. As the Project would not emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million, Project-related toxic emission impacts would be less than significant.

Furthermore, should contaminated soils be found or landfill contents be exposed through the implementation of the approved RAP or the proposed RAP design refinements during project construction activities, such soils shall be treated in accordance with the requirements of the appropriate regulatory agency. In addition, the Applicant would abide by SCAQMD Rule 1166 Volatile Organic Compound Emissions from Decontamination of Soil. This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, and handling, of VOC-contaminated soil. The mitigation measures set forth in Section V.E along with SCAQMD Rule 1166 ensures that the potential for accidental releases of air toxic emissions or acutely hazardous materials would be less than significant from a safety as well as air quality perspective and thus, would not pose a threat to public health and safety.

As described in Section IV.D Hazards and Hazardous Materials, the RAP envisioned that much of the soil used to construct the earthen cap, including topsoil would likely be imported. In addition, existing soil cover and soil contained in the sloped areas surrounding the cap would remain and be used as part of the cap or remain adjacent to the cap. During Remedial Design

(RD), additional soil cover samples would be collected and analyzed to further evaluate existing soil-cover quality, particularly soil that would reside near land surface such as in landscaped areas. Human-health risk evaluations and a soil management plan would be completed and provided to the DTSC for evaluation and approval to ensure that exposure to soil at the Project site does not pose unacceptable human health risks.

In addition to collecting additional soil data during RD and subsequent RAP implementation phases to evaluate potential health risks, construction and perimeter monitoring would also be completed during earth work, and construction of remediation systems. The approved RAP requires that dust and particulate emissions be controlled and that perimeter monitoring be completed during construction. Therefore, a plan would be developed based on existing and future soil quality data collected during the RD phase, and existing RAP requirements. The plan would be developed to implement engineering controls to minimize off-site migration of dust and particulates to ensure that the surrounding community's health is properly protected. Monitoring and analysis parameters would be based on constituents present at the site and at a minimum, dust and particulate matter (PM_{10}) will be monitored using high-volume air samplers (or equivalent) properly located around the property perimeter. In addition, construction equipment emission would also be periodically monitored at the property boundary in accordance with relevant SCAQMD regulations. This plan would be submitted to the DTSC during RD for review, comment, and approval before any construction activities occur.

(d) Odors

Potential sources that may emit odors during construction activities include the use of architectural coatings and solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. In addition, odiferous soils may be encountered during the implementation of the approved RAP or the proposed RAP design refinements. The Project would be required to comply with SCAQMD Rule 402 (Nuisance) which limits the discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public. Via mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed which would create objectionable odors. Therefore, no impact would occur and no mitigation measures would be required.

(2) Operational Impacts

(a) Regional Operations Impacts

Regional air pollutant emissions associated with proposed Project operations would be generated by the consumption of electricity and natural gas, and by the operation of on-road vehicles. Pollutant emissions associated with energy demand (i.e., electricity generation and

natural gas consumption) are classified by the SCAQMD as regional stationary source emissions. Electricity is considered an area source since it is produced at various locations within, as well as outside of, the Basin. Since it is not possible to isolate where electricity is produced, these emissions are conservatively considered to occur within the Basin and are regional in nature. Criteria pollutant emissions associated with the production and consumption of electricity were calculated using emission factors from the SCAQMD's CEQA Air Quality Handbook (Appendix to Chapter 9).

Criteria pollutant emissions associated with natural gas combustion and other miscellaneous emissions were estimated using the URBEMIS 2002 emissions inventory model, which utilizes emission factors developed by the EPA and ARB to calculate emissions based on the type of land uses. On-site stationary sources would include chillers, boilers, and emergency generators. Any boilers (used for water and space heating) would be natural gas-fired. Criteria pollutant emissions associated with natural gas combustion were calculated using the URBEMIS 2002 emissions inventory model. These stationary sources (i.e., boilers) may require permits from the SCAQMD pursuant to Rules 201, 202, and 203. Emission increases related to those sources may be subject to SCAQMD Regulation XIII or Regulation XXX which, among other things, requires that Best Available Control Technology (BACT) be utilized to reduce pollutants and that any increases of criteria air pollutants from these types of stationary sources be offset by achieving equivalent emission reductions at a facility within the Basin.

Emissions for miscellaneous area sources were estimated to account for minor sources of criteria pollutants. Miscellaneous sources include, but are not limited to, consumer/commercial solvents, landscaping equipment, and architectural coatings. These sources may not individually emit large quantities of criteria pollutants but when combined emit quantitative amounts of criteria pollutants.

Mobile-source emissions were calculated using the URBEMIS 2002 emissions inventory model, which multiplies an estimate of daily vehicle miles traveled (VMT) by applicable Emfac2002 emissions factors. The URBEMIS 2002 model output and worksheets for calculating regional operational daily emissions are provided in Appendix F of this Draft EIR. As shown in Table 39 on page 390, regional emissions resulting from the proposed Project would not exceed regional SCAQMD thresholds for SO_x. However, the proposed Project would exceed regional SCAQMD threshold for ROC, CO, NO_x and PM_{10} and impacts associated with these criteria pollutants would be significant.

(b) Local Impacts

The SCAQMD recommends an evaluation of potential localized CO impacts when vehicle to capacity (V/C) ratios are increased by 2 percent or more at intersections with a level of service (LOS) of C or worse. As detailed in Section IV.B, Traffic and Circulation, Project traffic

Table 39

Maximum Project-Related Operational Emissions
(Pounds per Day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Proposed Use Emissions					
Mobile[a]	4,404	540	589	373	3
Area[b]	6	9	<1	129	<1
Stationary[c]	39	170	5	4	14
Total Project	**4,449**	**719**	**595**	**506**	**17**
SCAQMD Significance Threshold	550	55	150	55	150
Difference	**3,901**	**664**	**445**	**451**	**(133)**
Significant?	**Yes**	**Yes**	**Yes**	**Yes**	**No**

[a] *Mobile emissions calculated using the URBEMIS2002 emissions model. Model output sheets are provided in Appendix F.*

[b] *Area sources include landscape fuel consumption, residential consumer products and miscellaneous sources (e.g., among other things, commercial solvent usage (e.g., detergents, cleaning compounds, glues, polishes, and floor finishes), delivery and loading dock equipment.) Worksheets are provided in Appendix F.*

[c] *Emissions due to Project-related electricity generation and natural gas consumption, calculated based on guidance provided in the SCAQMD CEQA Air Quality Handbook. Worksheets are provided in Appendix F.*

Source: PCR Services Corporation, 2005.

volumes would meet these criteria at 23 intersections. Intersections were selected for analysis based on information provided in the Project's Traffic Study, which is summarized in Section IV.C, Traffic, Circulation and Parking, above (see Appendix D of the Draft EIR for the complete traffic study).

CO concentration levels were forecasted at the above-mentioned intersections using the CALINE4 dispersion model developed by the California Department of Transportation, using peak-hour traffic volumes and conservative meteorological assumptions. Conservative meteorological conditions include low wind speed, stable atmospheric conditions, and the wind angle producing the highest CO concentrations for each case. CO concentrations were modeled under the future (2010) No Project and with Project conditions. As shown in Table 40 on page 391, Project-generated traffic volumes are forecasted to have a negligible effect on the projected 1-hour and 8-hour CO concentrations at these 23 intersection locations. Since a significant impact would not occur at the intersections which operate at the highest V/C ratio, no significant impact would occur at any other analyzed roadway intersections as a result of Project-generated traffic volumes. Thus, the proposed Project would not cause any new or exacerbate any existing CO hotspots, and, as a result, impacts related to localized mobile-source CO emissions would be less than significant.

Table 40

Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period[a]	Maximum 1-Hour 2010 Base Concentration[b] (ppm)	Maximum 1-Hour 2010 w/ Project Concentration[c] (ppm)	Significant 1-Hour Impact[d]	Maximum 8-Hour 2010 Base Concentration[e] (ppm)	Maximum 8-Hour 2010 w/ Project Concentration[f] (ppm)	Significant 8-Hour Impact[d]
Figueroa Street and Northbound I-405 Off-Ramp	A.M.	6.3	6.4	NO	4.5	4.5	NO
	P.M.	6.3	6.3	NO	4.5	4.5	NO
Hamilton Avenue and Del Amo Boulevard	A.M.	6.5	6.6	NO	4.7	4.7	NO
	P.M.	6.8	7.4	NO	4.7	5.1	NO
Main Street and Northbound I-405 Off-Ramp	A.M.	6.4	6.5	NO	4.5	4.6	NO
	P.M.	6.6	6.7	NO	4.5	4.7	NO
Main Street and Southbound I-405 On-Ramp	A.M.	6.1	6.2	NO	4.5	4.5	NO
	P.M.	6.6	6.8	NO	4.7	4.7	NO
Vermont Avenue and Del Amo Boulevard	A.M.	6.5	6.6	NO	4.6	4.7	NO
	P.M.	6.8	7.2	NO	4.8	5.0	NO
Avalon Boulevard and Del Amo Boulevard	A.M.	6.6	6.7	NO	4.7	4.8	NO
	P.M.	7.0	7.3	NO	4.9	5.1	NO
Figueroa Street and Del Amo Boulevard	A.M.	6.8	7.6	NO	5.0	5.2	NO
	P.M.	7.0	9.1	NO	4.9	6.0	NO
Hamilton Avenue and I-110 Southbound Ramps	A.M.	6.8	6.9	NO	4.8	4.9	NO
	P.M.	7.7	8.0	NO	5.2	5.3	NO
Main Street and Del Amo Boulevard	A.M.	6.8	7.1	NO	4.8	5.0	NO
	P.M.	6.8	7.8	NO	4.8	5.4	NO
Stamps Drive and Del Amo Boulevard	A.M.	6.4	7.3	NO	4.7	5.2	NO
	P.M.	6.4	8.8	NO	4.5	5.9	NO
Avalon Boulevard and Southbound I-405 Ramps	A.M.	7.1	7.5	NO	5.0	5.2	NO
	P.M.	7.5	8.2	NO	5.2	5.5	NO
Figueroa Street and Northbound I-110 Ramps	A.M.	7.5	8.0	NO	5.2	5.4	NO
	P.M.	7.6	8.7	NO	5.2	5.8	NO
Figueroa Street and Torrance Boulevard	A.M.	6.9	6.9	NO	4.8	4.9	NO
	P.M.	6.8	6.9	NO	4.9	4.9	NO

Table 40 (Continued)

Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period[a]	Maximum 1-Hour 2010 Base Concentration [b] (ppm)	Maximum 1-Hour 2010 w/ Project Concentration [c] (ppm)	Significant 1-Hour Impact [d]	Maximum 8-Hour 2010 Base Concentration [e] (ppm)	Maximum 8-Hour 2010 w/ Project Concentration [f] (ppm)	Significant 8-Hour Impact [d]
Lenardo Drive and Southbound I-405 Off-Ramp	A.M.	6.8	7.1	NO	4.8	5.0	NO
	P.M.	6.4	6.8	NO	4.6	4.9	NO
Main Street and Torrance Boulevard	A.M.	6.9	7.0	NO	4.8	4.9	NO
	P.M.	6.9	7.3	NO	4.9	5.0	NO
Avalon Boulevard and 213th Street	A.M.	6.6	6.7	NO	4.7	4.7	NO
	P.M.	6.8	7.0	NO	4.8	5.0	NO
Avalon Boulevard and Carson Street	A.M.	7.0	7.2	NO	5.0	5.0	NO
	P.M.	7.3	7.6	NO	5.1	5.2	NO
Figueroa Street and Carson Street	A.M.	7.0	7.0	NO	5.0	5.0	NO
	P.M.	7.8	8.1	NO	5.4	5.5	NO
Main Street and 213th Street	A.M.	6.7	6.9	NO	4.7	4.8	NO
	P.M.	6.7	6.9	NO	4.7	4.8	NO
Vermont Avenue and Carson Street	A.M.	7.3	7.4	NO	5.1	5.2	NO
	P.M.	7.8	8.0	NO	5.2	5.3	NO
Main Street and Carson Street	A.M.	6.5	6.6	NO	4.7	4.7	NO
	P.M.	7.0	7.1	NO	5.0	5.1	NO
Avalon Boulevard and Northbound I-405 Ramps	A.M.	6.3	6.4	NO	4.5	4.5	NO
	P.M.	6.3	6.3	NO	4.5	4.5	NO
Hamilton Avenue and Torrance Boulevard	A.M.	6.5	6.6	NO	4.7	4.7	NO
	P.M.	6.8	7.4	NO	4.7	5.1	NO

ppm = parts per million.

[a] *Peak hour traffic volumes are based on the Traffic Impact Study prepared for the Project by Kaku and Associates, 2005.*
[b] *SCAQMD 2010 1-hour ambient background concentration (5.1 ppm) + 2010 Base traffic CO 1-hour contribution.*
[c] *SCAQMD 2010 1-hour ambient background concentration (5.1 ppm) + 2010 w/ Project traffic CO 1-hour contribution.*
[d] *The most restrictive standard for 1-hour CO concentrations is 20 ppm and for 8-hour concentrations is 9.0 ppm.*

Table 40 (Continued)

Local Area Carbon Monoxide Dispersion Analysis

Intersection	Peak Period[a]	Maximum 1-Hour 2010 Base Concentration [b] (ppm)	Maximum 1-Hour 2010 w/ Project Concentration [c] (ppm)	Significant 1-Hour Impact [d]	Maximum 8-Hour 2010 Base Concentration [e] (ppm)	Maximum 8-Hour 2010 w/ Project Concentration [f] (ppm)	Significant 8-Hour Impact [d]

[e] *SCAQMD 2010 8-hour ambient background concentration (3.9 ppm) + 2010 Base traffic CO 8-hour contribution.*

[f] *SCAQMD 2010 8-hour ambient background concentration (3.9 ppm) + 2010 w/ Project traffic CO 8-hour contribution.*

Source: PCR Services Corporation, 2005; emission factor and dispersion modeling output sheets are provided in Appendix F.

The proposed Project would likely include the installation and operation of diesel-fired generators for emergency power generation. Unless a blackout occurs, these generators would be operated for only a few hours per month for routine testing and maintenance purposes. The Project Applicant would be required to obtain a permit to construct and a permit to operate any standby generators under SCAQMD Rules 201, 202, and 203. Under SCAQMD Regulation XIII, all generators must meet BACT requirements to minimize emissions of PM_{10} (as well as CO, ROC, and NO_X emissions). Compliance with SCAQMD Rules and Regulations regarding stationary-source combustion equipment would ensure that contributions to localized PM_{10} concentrations remain below the 2.5 $\mu g/m^3$ significance threshold. As such, any potential impacts would be less than significant.

(c) Regional Concurrent Construction and Operation Impacts

The analysis of the Project's construction emissions, presented earlier, is based on the conservative assumption that the entire Project would be constructed at a single time. This analysis is conservative in that it identifies the maximum emissions that could be generated during Project construction. The potential exists that the later stages of Project construction could occur concurrently with the occupancy of the earlier stages of development. Therefore, emissions associated with concurrent construction and operation activities were calculated. It was determined that concurrent emissions would be their greatest in the latter stages of Project construction, wherein the Proposed Project would nearly be built-out, but some construction activities would still be occurring as well as the Project's proposed off-site roadway improvements. As summarized in Table 41 on page 395, concurrent construction and operational emissions would exceed SCAQMD daily thresholds for CO, NO_X, PM_{10}, and ROC, but would not exceed the SCAQMD daily threshold for SO_X. Thus, a significant regional air quality impact would occur.

(d) Toxic Air Contaminants

The primary source of potential air toxics associated with proposed Project operations would be diesel particulates from delivery trucks (e.g., truck traffic on local streets and on-site truck idling). The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulates (e.g., truck stops and warehouse distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.[106] Potential localized air toxic impacts from on-site sources of diesel particulate emissions would be minimal since only a limited number of heavy-duty trucks (e.g., transportation refrigeration units) would access the Project site, and the trucks that do visit the site would not idle on the Project site for extended periods of time. Based on the limited activity of the toxic air contaminant sources, the proposed

[106] *SCAQMD, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions, December 2002.*

Table 41

Concurrent Operation and Construction Emissions [a]
(Pounds per day)

Emission Source	CO	NO_X	PM_{10}	ROC	SO_X
Combined Project and Approved RAP					
Operation Emissions [b]	3,560	575	476	405	14
On-Site Construction Emissions	893	684	819	1,434	0
Total	4,453	1,259	1,295	1,839	14
SCAQMD Construction Significance Threshold	550	100	150	75	150
Over (Under)	343	584	669	1,359	(150)
Significant?	**Yes**	**Yes**	**Yes**	**Yes**	**No**
SCAQMD Operation Significance Threshold	550	55	150	55	150
Over (Under)	3,010	520	326	350	(136)
Significant?	**Yes**	**Yes**	**Yes**	**Yes**	**No**
Combined Project and Proposed RAP Design Refinements					
Operation Emissions [b]	3,560	575	476	405	14
On-Site Construction Emissions	723	558	819	1,414	0
Total	4,283	1,133	1,295	1,819	14
SCAQMD Construction Significance Threshold	550	100	150	75	150
Over (Under)	173	458	669	1,339	(150)
Significant?	**Yes**	**Yes**	**Yes**	**Yes**	**No**
SCAQMD Operation Significance Threshold	550	55	150	55	150
Over (Under)	3,010	520	326	350	(136)
Significant?	**Yes**	**Yes**	**Yes**	**Yes**	**No**

[a] *The maximum concurrent construction and operational emissions was determined based on the maximum construction daily emissions calculated on a monthly basis and the amount of Project development occupancy. It was determined that this scenario would occur during the latter stages of the Project development assuming that 80% of the entire Project would be built out and occupied which occurs during year 2009*

[b] *Operational emissions are calculated using 80% of total build out emissions.*

Source: PCR Services Corporation, 2005.

Project would not warrant the need for a health risk assessment associated with on-site activities, and, in this regard, potential air toxic impacts would be less than significant.

Typical sources of acutely and chronically hazardous toxic air contaminants include industrial manufacturing processes, automotive repair facilities, and dry cleaning facilities. The proposed Project would not include any of these potential sources, although minimal emissions may result from the use of consumer products. As such, the proposed Project would not release substantial amounts of toxic contaminants; and no significant impact on human health would occur.

(e) On-Site Operation Impacts

On-Site Sources

As the proposed Project is located on a formal landfill, certain land use limitations are required. Deed restrictions are a legal control to prohibit specific activities. Under the RAP, deed restrictions must be recorded on the landfill site with the appropriate county recorders office to limit future land uses to commercial/light industrial activity, and to not allow such uses as residential, hospitals, schools, and day care centers. In addition, the deed restrictions must limit activities on the landfill site such as deep excavations into the clay layer or buried waste or use of groundwater wells for domestic supply or for agriculture.

The Upper OU RAP provides that deed restrictions would be approved by the DTSC prior to recording and would run with the property. The recording of the deed restriction is intended to put all potential buyers of the property on notice of the deed restrictions, which would remain in force regardless of future property transactions. The remediation of the 157-acre landfill (i.e., Development Districts 1 and 2) is being implemented as part of the Project in compliance with Remedial Action Order No. HSA87/88-040, which was issued by DTSC in 1988. The RAP for the Upper OU was approved by DTSC in 1995 and the RAP for the Lower OU was approved by DTSC in 2005. Via these RAPs, potential health affects due to air emissions relative to on-site commercial and industrial activities have been previously concluded by the DTSC to be less than significant.

DTSC is responsible for evaluating health and safety issues related to the proposed residential development on Development Districts 1 and 2. DTSC provided a letter dated February 9, 2005 indicating the "DTSC believes the concepts presented for the proposed development are appropriate at a conceptual level and could be protective of human health and safety, however, as is common for all projects under DTSC's authority, more detailed plans are necessary before DTSC can make such a final determination." DTSC will not allow residential development to occur until the agency concludes that the development would be implemented in a manner that is protective of human health and the environment. Thus, no further analysis of this issue is required in this document as the proposed residential development could not occur within Development District 1 without a determination from DTSC that such development could occur without an adverse impact on the health of future residents due to on-site air emissions.

Off-Site Sources

When considering potential air quality impacts under CEQA, particularly in reference to sensitive receptors, special consideration must be given to the location of sensitive receptors within close proximity of land uses that emit toxic air contaminants (TACs). The SCAQMD recommends a health risk assessment (HRA) if it is determined that new sensitive receptors are

proposed within one-quarter mile of an existing source of toxic emissions. Therefore, TAC emissions from sources within one-quarter mile of the proposed on-site residential locations were identified and quantified to the extent that such data was reasonably available, and evaluated in a risk assessment.

The SCAQMD provided a list of 32 potential sources within one-quarter mile of the proposed on-site sensitive receptors (i.e., residential uses) that have the potential to generate hazardous and acutely hazardous air emissions. A public records request was filed with the SCAQMD for pertinent information regarding each facility's potential to emit hazardous air pollutants. Based on information provided by the SCAQMD, this list was further refined to one potential source within one-quarter mile of the proposed residential uses that required further analysis. This one source is the San Diego Freeway (I-405). Potential SCAQMD sources were excluded from further analysis based on several factors: (1) the recent closure of some sources listed by the SCAQMD; (2) source distance was greater than one-quarter mile from proposed on-site residential uses or beyond CARB siting distances for specific types of sources; and (3) sources with sufficiently small emission inventories that would not influence the potential health risk (e.g., small quantity generators of hazardous waste or emissions).

The CARB's Air Quality and Land Use Handbook: A Community Health Perspective (March 2005) provides important air quality information about certain types of facilities (e.g., freeways, refineries, rail yards, ports, etc.) that should be considered when siting sensitive land uses such as residences. A key air pollutant common to these sources is particulate matter from diesel engines. The CARB identifies diesel particulate matter (DPM) as both a carcinogen and long-term chronic toxic air contaminant (TAC). Gasoline exhaust also results in additional TAC emissions (e.g., 1,3 butadiene, benzene, formaldehyde, etc). Because living too close to such air pollution sources may increase both cancer and non-cancer health risks, the CARB recommends that proximity be considered in the siting of new sensitive land uses. The CARB's recommendations are based primarily on data showing that air pollution exposure can be reduced as much as 80 percent with the recommended separation. The CARB recommends that site-specific project design improvements may help reduce air pollution exposures and should also be considered when siting new sensitive land uses. The recommendations are advisory and should not be interpreted as defined "buffer zones." In addition, the CARB recognizes that site-specific analysis is preferred over the use of the recommended site distances, which is similar to a screening level approach.

Where possible, the CARB recommends a minimum separation between new sensitive land uses and existing sources. However, this is not always possible, particularly where there is an elevated health risk over large geographical areas (e.g. urbanized areas of Southern California). The CARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles per day. The basis for the recommended distance is a southern California study that showed measured

concentrations of vehicle-related pollutants drop dramatically within approximately 300 feet of the 710 and 405 freeways.[107] Another study looked at the validity of using distance from a roadway as a measure of exposure to traffic-related air pollution. This study showed that concentrations of traffic related pollutants declined by 70 percent at a distance of 500 feet.[108] The CARB concluded that these findings were also consistent with air quality modeling and risk analyses done by CARB staff.

As the Project would introduce residential uses within 500 feet of I-405, on-site sensitive receptors may potentially be exposed to high levels of TACs. Additional analysis was therefore conducted based on CARB and SCAQMD guidance to assess the potential health risks that future residents may experience due to the Project site's proximity to the freeway.

Cancer risk is often expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to a specific cancer-causing substance after a 24-hour a day, 365 days a year exposure outdoors at the same concentration over a lifetime of 70 years. For purposes of this analysis, shorter periods of 9 and 30 years were also considered. These shorter periods correspond to the "central tendency" and "high-end estimates" for residency time at a single location and are recommended for analysis by USEPA study methodology.[109] This probability is usually expressed in terms of the number of people who will develop cancer per one million people who are also exposed. It is important to understand that this cancer risk represents the probability that a person develops some form of cancer. The estimated risk does not represent mortality rates. It is also important to understand that the risk described in these calculations reflects a level of exposure that would be virtually impossible to experience, and that for most individuals, exposure to a particular contaminant, such as DPM, would be considerably less due to shorter duration of residence in the area, amount of time spent at the residence daily and throughout the year, and the split between time spent indoors versus outdoors.

The cancer risk from vehicular exhaust (e.g., DPM) occurs exclusively through inhalation and for this project was calculated using the USEPA-recommended Industrial Source Complex – Short Term (ISCST3) dispersion model. Output from the dispersion analysis was used to estimate the TAC concentrations. The cancer risk was then calculated based on those estimated DPM concentrations using the risk methodology derived from the California Office of Environmental Health Hazard Assessment (OEHHA). The specific calculations and assumptions

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[107] *Zhu, Y et al. "Study of Ultra-Fine Particles Near a Major Highway with Heavy Duty Diesel Traffic." Atmospheric Environment. 2002; 26:4323-4335.*

[108] *Knape, M. "Traffic related air pollution in city districts near motorways." The Science of the Total Environment. 1999: 235:339-341.*

[109] *OEHHA Air Toxics Hot Spots Program Risk Assessment Guidelines, August 2003*

used to determine the cancer risks are included in Appendix F. As cancer risk from vehicular exhaust occurs only through inhalation, cancer risk is directly related to the breathing rates of individuals. Since different people have different breathing rates, the potential cancer risk could vary considerably depending on the breathing rate of each person. For the purposes of this evaluation, two different cancer risk values are listed below. The "high-end" value uses the 95th percentile breathing rate (the average breathing rate of the top 5 percent of the population), so that cancer risk is not underestimated. However, in order to provide a better understanding of the probability distribution of cancer risk, an average breathing rate value is also reported. The average value represents the mean breathing rate expected within the general population.

The risk assessment guidelines established by the SCAQMD and followed here in this analysis are designed to produce conservative (high) estimates of the risk posed by TACs. The conservative nature of the analysis is due to the following factors:

- As a conservative measure, the SCAQMD does not recognize indoor adjustments for residents. However, studies have shown that the typical person spends approximately 87 percent of their time indoors, 5 percent of their time outdoors, and 7 percent of their time in vehicles. In addition, residences without an indoor source of diesel exhaust are anticipated to have lower levels of DPM. A DPM exposure assessment showed that the average indoor concentration is 2.0 $\mu g/m^3$, compared with an outdoor concentration of 3.0 $\mu g/m^3$.

- The exposure to DPM is assumed to be constant for the period analyzed. However, emissions of DPM are anticipated to decrease substantially in the future due to emission control programs and technological advancements and improvements.

- The ISCST3 air dispersion model as applied in this analysis is designed to provide conservative estimates of air pollutant concentrations.

The threshold for significance used to evaluate the exposure to TACs is 10 excess cancer cases per one million people. This is the threshold recommended by the SCAQMD and the CARB explicitly to determine impacts attributable to projects that introduce new sources of TAC emissions in an area. In contrast, the proposed Project is a predominantly commercial project that would not add new sources of TACs to the Project vicinity and would not increase the cancer risk faced by people who already live in the Project vicinity, but would rather introduce new sensitive receptors to the Project site in the form of new residents. While it was not originally intended to evaluate Projects that introduce new sensitive receptors to an area, in the absence of a more applicable threshold for exposure, SCAQMD has recommended that the 10 excess cancer cases per one million persons threshold also be used as a conservative measure of the potential risk to such new receptors.

The results of the mathematical calculations determining estimated cancer risks are listed in Table 42 on page 401. The cancer risks reported in Table 42 represent the range of potential cancer risks to residents of the proposed Project in terms of both a high-end and an average (mean) value breathing rate and assume 24 hour a day exposure outdoors for 365 days a year. The additional exposure durations of 30 and 9 years are useful since very few people can be anticipated to occupy the same residence for 70 consecutive years. Even the nine-year exposure assumes constant outdoor, on-site exposure 24 hours daily for nine straight years.

The cancer risk from the freeway exceeds the 10 in one million threshold, with the freeway truck traffic being the major source (refer to Appendix F of this Draft EIR for further discussion). A constant 70-year exposure would result in a cancer risk as high as 349 cases in one million for the maximum on-site receptor. This high level declines to less than 51 cases in one million for the average on-site receptor with a constant nine-year exposure. Of course, both of these outcomes are likely overstated, as reducing DPM is one of the CARB's highest public health priorities and the focus of a comprehensive statewide control program that is reducing DPM emissions each year. The CARB's long-term goal is to reduce DPM emissions 85 percent by 2020.

While some of these results may seem high, they come into more clear perspective when expressed in terms of the predicted Project populations. The proposed Project would include up to 1,550 dwelling units and is estimated to generate a residential population of 6,969 residents. When the cancer risks are expressed in terms of the 6,969 residents expected to occupy the project site, with all 6,969 residents occupying the location of highest risk on the site for 70 years of constant outdoor exposure, then 2.3 persons would be predicted to experience cancer.

As discussed previously, the vast majority of the City of Carson is located in an area with between 500 and 750 cancers per million.[110] The health risk assessment performed for the Project site demonstrates that the Project site is also within this range. Therefore, there is an inherent health risk associated with living in Carson. Nevertheless, the Project would result in locating sensitive receptors within an area of cancer risk in excess of the SCAQMD significance threshold of 10 in one million and, therefore, the Project would result in significant impact without the incorporation of mitigation measures.

To quantify non-carcinogenic impacts, the hazard index approach was used. The approach assumes that chronic sub-threshold exposures adversely affect a specific organ or organ system (toxicological endpoint). For each discrete chemical exposure, target organs presented in regulatory guidance were utilized. To calculate the hazard index, each chemical's concentration or dose is divided by the appropriate toxicity value. For compounds affecting the same

[110] *http://www.arb.ca.gov/toxics/cti/hlthrisk/cncrinhl/riskmapviewfull.htm.*

Table 42

Estimated Cancer Risks (per million people)—2010

Receptor	70-Year Exposure		30-Year Exposure		9-Year Exposure	
	High-End	Average	High-End	Average	High-End	Average
Maximum On-Site Residence	349	241	150	103	45	31

Source: PCR Services Corporation, 2005.

toxicological endpoint, this ratio is summed. Where the total is equal to or exceeds one, a health hazard is presumed to exist. The analysis for the proposed Project resulted in a chronic hazard index for the maximum exposed receptors of 0.2, which is approximately 50 percent of the SCAQMD recommended threshold. Therefore, non-cancer health risks are not considered significant.

(f) Odors

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses identified by the SCAQMD as being associated with odors. As the proposed uses would not be a source of odors, potential offsite odor impacts would be less than significant. However, an existing composting operation is located near the proposed residential uses northwest of the intersection of Del Amo Boulevard and Main Street. As a result, this source could result in odiferous emissions that may result in significant odor impacts that could affect proposed residential uses without incorporation of mitigation measures.

As the proposed Project is located on a former landfill, the RAP requires the installation of a landfill gas extraction, control, and treatment system. The primary objectives of the landfill gas control system are to prevent the migration and accumulation of combustible gas into enclosed buildings and to prevent off-site landfill gas migration. The RAP provides that the preferred landfill gas control, collection and treatment system consist of (1) a series of vertical gas extraction wells placed within the outer edges of the waste cells along the perimeter of the landfill; (2) thermal destruction of collected gas using a flare unit, and (3) other gas monitoring and venting systems, if determined necessary and applicable. Implementation of the RAP requirements would limit potential odiferous emissions (e.g., methane) from the formal landfill that could affect proposed residential uses and off-site residential uses to the south and southwest of the Project site.

(g) SCAQMD Handbook Policy Analysis

In accordance with the procedures established in the SCAQMD CEQA Air Quality Handbook, the following criteria are required to be addressed in order to determine the proposed Project's consistency with SCAQMD and SCAG policies:

1. Will the Project result in any of the following:

   - An increase in the frequency or severity of existing air quality violations; or
   - Cause or contribute to new air quality violations; or
   - Delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2. Will the Project exceed the assumptions utilized in preparing the AQMP?

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for projects such as the Carson Marketplace include forecasts of Project emissions in a regional context during construction and Project occupancy. These forecasts are provided earlier in this section. Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of the proposed Project's pollutant emissions on localized pollutant concentrations is used as the basis for evaluating Project consistency. As discussed in the preceding sections, localized concentrations for PM_{10}, CO, and NO_2 have been analyzed for the proposed Project. SO_2 emissions would be negligible during construction and long-term operations, and therefore would not have potential to cause or affect a violation of the SO_2 ambient air quality standard. There is no localized threshold for ROC emissions, only a regional emissions threshold.

PM_{10} is the primary pollutant of concern during construction activities, and therefore, the proposed Project's PM_{10} emissions during construction were analyzed: (1) to ascertain potential effects on localized concentrations; and (2) to determine if there is a potential for such emissions to cause or affect a violation of the ambient air quality standard for PM_{10}. Results of the PM_{10} dispersion modeling indicate that the increase in the ambient PM_{10} concentration during construction would exceed the SCAQMD-recommended 10.4 $\mu g/m^3$ PM_{10} significance threshold at multiple sensitive receptor locations. However, the potential for this impact would be short-term and would not have a long-term impact on the region's ability to meet State and Federal air quality standards. In addition, the Project would be required to comply with SCAQMD Rule 403 and would implement all feasible mitigation measures for control of PM_{10}. Nevertheless, the proposed Project will have a significant temporary impact on localized PM_{10} concentrations.

In addition, the proposed Project's maximum potential NO_X and CO daily emissions during construction were analyzed to ascertain potential effects on localized concentrations and to determine if there is a potential for such emissions to cause or affect a violation of an applicable ambient air quality standard. The analysis concluded that CO and NO_2 concentrations would not exceed their respective AAQS, and potential impacts would therefore be less than significant.

During long-term Project operations, CO is the preferred pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. Based on methodologies set forth by the SCAQMD, one measure of local area air quality impacts that can indicate whether the proposed Project would cause or affect a violation of an air quality standard would be based on the estimated CO concentrations at selected receptor locations located in close proximity to the Project Site. As indicated earlier, CO emissions were analyzed using the CALINE 4 model. No violations of the State and federal carbon monoxide standards are projected to occur. Overall, the proposed Project would result in less than significant impacts with regard to CO, NO_2 and SO_2 concentrations during Project construction and operations. While PM_{10} concentrations during construction would exceed the SCAQMD 10.4 $\mu g/m^3$ significance threshold, the potential for this impact would be short-term and would not have a long-term impact on the region's ability to meet State and federal air quality standards. As such, the proposed Project would meet the first AQMP consistency criterion.

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it must be recognized that air quality planning within the Basin focuses on the attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed Project exceeds the assumptions utilized in preparing the forecasts presented in the AQMP.

Determining whether or not a project exceeds the assumptions reflected in the AQMP involves the evaluation of three criteria: (1) consistency with the population, housing and employment growth projections; (2) Project mitigation measures; and (3) appropriate incorporation of AQMP land use planning strategies. The following discussion provides an analysis of each of these three criteria.

- Is the project consistent with the population, housing, and employment growth projections upon which AQMP forecasted emission levels are based?

A project is consistent with the AQMP if it is consistent with the population, housing and employment assumptions which were used in the development of the AQMP. The 2003 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates, in part, SCAG's 2004 Regional

Transportation Plan (RTP) socioeconomic forecast projections of regional population and employment growth.

SCAG's 2004 RTP projects that employment in the region will grow by about 1,088,296 jobs between 2005 and 2010. The proposed Project is projected to result in a net increase of approximately 5,320 jobs on the Project Site, or approximately 0.5 percent of the total job growth projected for the region. SCAG's 2004 RTP projects that population in the region will grow by about 1,326,258 people between 2005 and 2010. The proposed Project is projected to result in a net increase of approximately 6,969 residents on the Project Site, or approximately 0.5 percent of the total population growth projected for the region. Such levels of employment and population growth are consistent with the employment forecasts for the region as adopted by SCAG. Because the SCAQMD has incorporated these same projections into the AQMP, it can be concluded that the proposed Project would be consistent with the projections in the AQMP.

- Does the project implement all feasible air quality mitigation measures?

Implementation of all feasible mitigation measures is recommended to reduce air quality impacts to the extent feasible. The Proposed Project would incorporate a number of key air pollution control measures identified by the SCAQMD, as described in Section IV.G.4, Mitigation Measures, below. As such, the proposed Project meets this AQMP consistency criterion since all feasible mitigation measures would be implemented.

- To what extent is project development consistent with the land use policies set forth in the AQMP?

The proposed Project would serve to implement a number of land use policies of the City of Carson and SCAG. With regard to land use developments, such as the proposed Project, air quality policies focus on the reduction of vehicle trips and vehicles miles traveled. The proposed Project, by virtue of its location and design, exhibits many attributes that have a positive direct and indirect benefit with regard to the reduction of vehicle trips and vehicles miles traveled. Specifically, the proposed Project is a mixed-use activity center, immediately accessible to the I-405 and I-110 Freeways. The site is also served by the SR-91, and I-710 Freeways. The proposed Project would include an internal circulation system that would be linked with the regional network, and linked to new/improved freeway access at Avalon Boulevard.

The Project site is located within the central part of the City with high-intensity development including commercial and entertainment venues that would contribute to development at a location amidst the Carson Civic Center, the Home Depot Center, California State University at Dominguez Hills, the South Bay Pavilion, and the Victoria Golf Course and Park, thus adding to the centrality of such community uses. In addition, the Proposed Project

clusters population so as to support the extension of public transit service by including up to approximately 1,995,125 sq.ft. of commercial use with up to 1,550 housing units intermixed with plazas and open space. Thus, the Project provides the potential for job-housing linkages by providing opportunities to create linkages between employment and residential centers that directly translate to reductions in vehicle trips and vehicle miles traveled. In addition, bus service is available on Main Street and Del Amo Boulevard which in turn provides access to the Metro Blue Line light rail system. With easy accessibility to a number of local and regional transit facilities, the Project would also implement important air quality policies that contribute to reducing vehicle trips and vehicle miles traveled.

Additional means by which Project development reduces vehicle trips and vehicle miles traveled is by encouraging pedestrian activity in a number of ways including: (1) providing housing units intermixed with plazas and open space which would enrich street life by encouraging walking connections between adjacent uses; (2) incorporating landscaped areas and walkways linked to adjacent land uses in a manner that would create a pedestrian-friendly environment; (3) providing proximity between residential and commercial uses; and (4) providing the Project residents with easy access to nearby parks (e.g., Victoria Golf Course and Park and schools).[111] As the Project implements the SCAQMD's objective of reducing vehicle miles traveled and their related vehicular air emissions, the proposed Project would be consistent with AQMP land use policies.

Overall, the proposed Project is found to be consistent with the AQMP, as the proposed Project does not cause or worsen an exceedance of an ambient air quality standard, does not delay the attainment of an air quality standard, is consistent with the AQMP's growth projections, implements all feasible air quality mitigation measures, and is consistent with the AQMP's land use policies.

City of Carson Policies

As discussed in detail above, development of the proposed Project at the proposed site location offers the opportunity to redevelop an underutilized site with a mixed use development in the middle of an urbanized area and does so via the use of existing infrastructure, proximity to existing regional and local transit facilities, encourages pedestrian activity, and is located near existing commercial uses that would meet many of the needs of the Project's future residents. Based on these relationships, it is concluded that the proposed Project would be consistent with the City of Carson's air quality policies as it implements the air quality goals and policies set forth in the City's General Plan. Thus, less than significant impacts would occur as a result of

[111] *The sufficiency of the parks and schools to accommodate the Project's population is addressed in Sections I.3, Schools, and I.4, Parks and Recreation, respectively.*

Project development with respect to compatibility with applicable air quality policies as set forth in the City's General Plan Air Quality Element.

4. MITIGATION MEASURES

The following mitigation measures are (1) intended to implement requirements of SCAQMD Rule 403 (Fugitive Dust) and (2) set forth a program of air pollution control strategies designed to reduce the proposed Project's air quality impacts to the extent feasible.

a. Construction

Mitigation Measure G-1: General contractors shall implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403.[112]

Mitigation Measure G-2: All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

Mitigation Measure G-3: General contractors shall maintain and operate construction equipment so as to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues would turn their engines off, when not in use, to reduce vehicle emissions. Construction emissions should be phased and scheduled to avoid emissions peaks and discontinued during second-stage smog alerts.

Mitigation Measure G-4: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used to the extent feasible.

Mitigation Measure G-5: All construction vehicles shall be prohibited from idling in excess of ten minutes, both on- and off-site.

Mitigation Measure G-6: Project heavy-duty construction equipment shall use alternative clean fuels, such as low sulfur diesel or compressed natural gas with oxidation catalysts or particulate traps, to the extent feasible.

Mitigation Measure G-7: The Applicant shall utilize coatings and solvents that are consistent with applicable SCAQMD rules and regulations**.**

[112] *SCAQMD Rule 403 requirements are detailed in Appendix F.*

Mitigation Measure G-8: The Applicant shall comply with SCAQMD Rule 402 to reduce potential nuisance impacts due to odors from construction activities.

Mitigation Measure G-9: All construction vehicle tires shall be washed at the time these vehicles exit the project site.

Mitigation Measure G-10: All fill material carried by haul trucks shall be covered by a tarp or other means.

Mitigation Measure G-11: Any intensive dust generating activity such as grinding concrete for existing roads must be controlled to the greatest extent feasible.

Mitigation Measure G-12: The Applicant shall provide documentation to the City indicating both on- and off-site air-borne risks associated with RAP construction have been evaluated to the satisfaction of the DTSC, and at a minimum, perimeter air monitoring will be completed for dust, particulates, and constituents determined to be Constituents of Concern (COCs).

b. Operation

During the operational phase, the proposed Project would result in regional emissions that exceed regional SCAQMD significance thresholds for CO, PM_{10}, NO_X, and ROC. Emission control measures are specified for the following four sources of operational emissions: (1) service and support facilities; (2) natural gas consumption and electricity production; (3) building materials, architectural coatings, and cleaning solvents; and (4) transportation systems management and demand management.

(a) Service and Support Facilities (point sources)

Mitigation Measure G-13: All point source facilities shall obtain all required permits from the SCAQMD. The issuance of these permits by the SCAQMD shall require the operators of these facilities to implement Best Available Control Technology and other required measures that reduce emissions of criteria air pollutants.

Mitigation Measure G-14: Land uses on the Project site shall be limited to those that do not emit high levels of potentially toxic contaminants or odors.

(b) Natural Gas Consumption and Electricity Production

Mitigation Measure G-15: All residential and non-residential buildings shall meet the California Title 24 Energy Efficiency standards for water heating, space heating and cooling, to the extent feasible.

Mitigation Measure G-16: All fixtures used for lighting of exterior common areas shall be regulated by automatic devices to turn off lights when they are not needed, but a minimum level of lighting should be provided for safety.

(c) Building Materials, Architectural Coatings and Cleaning Solvents

Mitigation Measure G-17: Building materials, architectural coatings and cleaning solvents shall comply with all applicable SCAQMD rules and regulations.

(d) Transportation System Management and Demand Management

Mitigation Measure G-18: The Applicant shall, to the extent feasible, schedule deliveries during off-peak traffic periods to encourage the reduction of trips during the most congested periods.

Mitigation Measure G-19: The Applicant shall coordinate with the MTA and the City of Carson and Los Angeles Department of Transportation to provide information with regard to local bus and rail services.

Mitigation Measure G-20: During site plan review, consideration shall be given regarding the provision of safe and convenient access to bus stops and public transportation facilities.

Mitigation Measure G-21: The Applicant shall pay a fair share contribution for a low emission shuttle service between the project site and other major activity centers within the project vicinity (i.e., the MetroRail Blue Line station at Del Amo Boulevard and Santa Fe and the Carson Transfer Station at the South Bay Pavilion).

Mitigation Measure G-22: The Applicant shall provide bicycle racks located at convenient locations throughout Carson Marketplace.

Mitigation Measure G-23: The Applicant shall provide bicycle paths along the main routes through Carson Marketplace.

Mitigation Measure G-24: The Applicant shall provide convenient pedestrian access throughout Carson Marketplace.

As on-site sensitive receptors could be exposed to off-site air toxic emissions in excess of the SCAQMD significance threshold and also potential odiferous emissions (nearby composting operation), the following mitigation measure is recommended.

Mitigation Measure G-25: The Project shall include air filtration systems for residential dwelling units designed to have a minimum efficiency reporting value (MERV) of 12 as indicated by the American Society of Heating Refrigerating and Air Conditioning Engineers (ASHRAE) Standard 52.2. The air handling systems shall be maintained on a regular basis per manufacturer's recommendations by a qualified technician employed or contracted by the Applicant or successor. Operation and maintenance of the system shall ensure that it performs above the minimum reporting value.

5. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Construction

With implementation of the above mitigation measures, heavy-duty construction equipment emissions of PM_{10}, ROC, NO_x, SO_x, and CO would be reduced by a minimum of 5 percent. However, regional construction activities would still exceed the SCAQMD daily emission thresholds for regional NO_X, CO and ROC after implementation of all feasible mitigation measures. Therefore, construction of the Project would have a significant and unavoidable impact on regional air quality.

With regard to localized emissions, construction activities would still exceed the SCAQMD daily emission threshold for PM_{10} after implementation of all feasible mitigation measures. Therefore, construction of the Project would have a significant and unavoidable impact.

No notable impacts related to TAC emissions during construction are anticipated to occur for the proposed Project. As such, potential impacts would be less than significant.

The proposed Project is not anticipated to generate a substantial amount of objectionable odor emissions during construction. Via mandatory compliance with SCAQMD Rules, no construction activities or materials are proposed that would create objectionable odors. As such, potential impacts would be less than significant.

b. Operation

Regional operational emissions would still exceed the SCAQMD daily emission threshold for regional CO, ROC, PM_{10}, and NO_X after implementation of all feasible mitigation measures. Therefore, operation of the Project would have a significant and unavoidable impact on regional air quality. In addition, regional concurrent construction and operational emissions would still exceed SCAQMD daily thresholds for CO, ROC, PM_{10}, and NO_X after implementation of all feasible mitigation measures. Therefore, concurrent construction and operational of the Project would have a significant and unavoidable impact on regional air quality.

No significant impacts related to local CO concentrations would occur for the proposed Project. Project development would be consistent with the air quality polices set forth in the SCAQMD's AQMP and the Carson General Plan Air Quality Element, resulting in an impact that is less than significant.

With respect to potential impacts to on-site residential uses, the recommended air handling systems would substantially reduce carcinogenic exposure. Pollutant concentrations within residential buildings are best reduced by installing an air cleaning system to reduce the concentration of particulates associated with the infiltration of outside air. Air filters are commonly described and rated by the ASHRAE based upon their collection efficiency, pressure drop (or airflow resistance), and particulate-holding capacity. An air filtration system with a 12 MERV would reduce particles in the range of 1 to 3 microns by a minimum of 80 percent. This mitigation measure would reduce the carcinogenic risk to residential uses substantially, but impacts would remain significant and unavoidable.

Via compliance with industry standard odor control practices, SCAQMD Rule 402 (Nuisance), and SCAQMD Best Available Control Technology Guidelines, potential impacts that could result from any potential odor source would be less than significant.

6. CUMULATIVE IMPACTS

a. Construction

Of the 25 related projects that have been identified within the proposed Project study area, there are a number of related projects that have not yet been built or are currently under construction. Since the Applicant has no control over the timing or sequencing of the related projects, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be entirely speculative. For this reason, the

SCAQMD's methodology to assess a project's cumulative impact differs from the cumulative impacts methodology employed elsewhere in this EIR.

With respect to the Project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions outlined in the AQMP pursuant to Federal Clean Air Act mandates. As such, the proposed Project would comply with SCAQMD Rule 403 requirements, and implement all feasible mitigation measures. In addition, the proposed Project would comply with adopted AQMP emissions control measures. Per SCAQMD rules and mandates as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements (i.e., Rule 403 compliance, the implementation of all feasible mitigation measures, and compliance with adopted AQMP emissions control measures) would also be imposed on construction projects Basin-wide, which would include each of the related projects mentioned above. Nevertheless, construction-period CO, NO_X and ROC mass regional emissions, and localized PM_{10} emissions associated with the proposed Project are already projected to result in a significant impact to air quality. As such, cumulative impacts to air quality during proposed Project construction would also be significant and unavoidable.

Similar to the proposed Project, the greatest potential for TAC emissions at each related project would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given that the Proposed Project contribution to cancer risk from construction activities would be less than significant and is a localized impact, related projects that have not already been built would not result in a long-term (i.e., 70 years) substantial source of TAC emissions with no residual emissions after construction and corresponding individual cancer risk. Furthermore, any related project that has the potential to emit notable quantities of TACs would be regulated by the SCAQMD such that TAC emissions would be negligible. Thus, TAC emissions from the related projects are anticipated to be less than significant unto themselves, as well as cumulatively in conjunction with the proposed Project.

Also similar to the proposed Project, potential sources that may emit odors during construction activities at each related project would include the use of architectural coatings and solvents. SCAQMD Rule 1113 limits the amount of volatile organic compounds from architectural coatings and solvents. Via mandatory compliance with SCAQMD Rules, it is anticipated that construction activities or materials used in the construction of the related projects would not create objectionable odors. Thus, odor impacts from the related projects are anticipated to be less than significant unto themselves, as well as cumulatively in conjunction with the proposed Project.

b. Operation

The SCAQMD has set forth both a methodological framework as well as significance thresholds for the assessment of a project's cumulative operational air quality impacts. The SCAQMD's methodology differs from the cumulative impacts methodology employed elsewhere in this Draft EIR, in which foreseeable future development within a given service boundary or geographical area is predicted and associated impacts measured. The SCAQMD's approach for assessing cumulative impacts is based on the SCAQMD's AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the Federal and State Clean Air Acts. This forecast also takes into account SCAG's forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the proposed Project is consistent with forecasted future regional growth. Therefore, if all cumulative projects are individually consistent with the growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of ambient air quality standards and a significant cumulative air quality impact would not occur.

Based on the SCAQMD's methodology (presented in Chapter 9 of the *CEQA Air Quality Handbook*), a project would have a significant cumulative air quality impact if the ratio of daily Project-related employee vehicle miles traveled (VMT) to daily countywide vehicle miles traveled exceeds the ratio of daily Project employees to daily countywide employees. As shown in Table 43 on page 413, the daily Project to countywide VMT ratio is not greater than the Project to countywide employee ratio. Based on these criteria, development of the proposed Project would have a less than significant air quality impact. In addition, as shown in Table 41, a localized CO impact analysis was conducted for cumulative traffic (i.e., related projects and ambient growth through 2010) in which no local CO violations would occur at any of the studied intersections.

With respect to air quality policies in the City's General Plan, it is anticipated that the identified related projects within the City of Carson are subject to compliance with City regulations and subject to review by the City for compliance with the General Plan and its zoning regulations. It is reasonable to assume that future projects approved in the surrounding area would have been found, as part of their respective approval processes, to be in compliance with local and regional planning goals and policies. If a related project was found to be in conflict with applicable air quality policies and regulations, it is reasonable to assume that its approval would involve findings that the related development did not have adverse air quality impacts or that mitigation measures were incorporated into the development to reduce potential air quality impacts to less than significant levels. As discussed previously, the proposed Project would be compatible with City air quality policies. Thus, cumulative impacts with regard to consistency with applicable air quality policies would be less than significant.

Table 43

Project Cumulative Air Quality Impacts

Daily Vehicle Miles Traveled for Proposed Project Population [a]	51,342
Daily Vehicle Miles Traveled Countywide [b]	212,479,000
Daily Vehicle Miles Traveled Ratio	0.00024163
Proposed Project Population	6,969
Countywide Population [c]	10,718,100
Population Ratio	0.00065
Significance Test—Daily Vehicle Miles Traveled Ratio Greater Than Population Ratio	**No**
Daily Vehicle Miles Traveled for Proposed Project Employment [a]	13,258
Daily Vehicle Miles Traveled Countywide [b]	212,479,000
Daily Vehicle Miles Traveled Ratio	0.000062
Proposed Project Employment	4,810
Countywide Employment [c]	5,022,200
Employment Ratio	0.001
Significance Test—Daily Vehicle Miles Traveled Ratio Greater Than Employment Ratio	**No**

[a] *Increase of vehicle miles traveled as a result of the Proposed Project, Transportation and Circulation, Section C.1. Data obtained from URBEMIS 2002*

[b] *CARB, Emfac2002, V2.2. (Buildout Year = 2010)*

[c] *Data obtained from SCAG's Regional Transportation Plan, 2004*

Source: PCR Services Corporation, 2005.

Despite these conclusions, the proposed Project is more conservatively concluded to contribute to a significant cumulative regional air quality impact as the Basin is non-attainment for ozone and PM_{10}, and the proposed Project would exceed the SCAQMD daily significance thresholds for ROC and NO_X emissions (i.e., ozone precursors) and PM_{10}.[113]

With respect to TAC emissions, neither the proposed Project nor any of the related projects (which are largely residential, restaurant, retail/commercial, and medical/research developments) would represent a substantial source of TAC emissions, which are typically associated with large-scale industrial, manufacturing and transportation hub facilities. However, the proposed Project and each of the related projects would likely generate minimal TAC emissions related to the use of consumer products, landscape maintenance activities, etc. Pursuant to California Assembly Bill 1807, which directs the California Air Resources Board (ARB) to identify substances as TAC and adopt airborne toxic control measures (ATCMs) to control such substances, the SCAQMD has adopted numerous rules (primarily in Regulation XIV) that specifically address TAC emissions. These SCAQMD rules have resulted in and will

[113] *This approach is more conservative than the approach provided in the SCAQMD CEQA Air Quality Handbook.*

continue to result in substantial Basin-wide TAC emissions reductions. In addition, the proposed Project would not result in any TAC land uses requiring further evaluation using ARB's *Air Quality and Land Use Handbook: A Community Health Perspective.* As such, cumulative TAC emissions during long-term operations would be less than significant.

With respect to potential odor impacts, neither the proposed Project land use nor any of the related projects (which are primarily hospital/medical office, general office, residential, retail, and restaurant uses) land uses have a high potential to generate odor impacts.[114] Furthermore, any related project that may have a potential to generate objectionable odors would be required by SCAQMD Rule 402 (Nuisance) to implement Best Available Control Technology to limit potential objectionable odor impacts to a less than significant level. Thus, potential odor impacts from related projects are anticipated to be less than significant unto themselves, as well as cumulatively, in conjunction with the proposed Project.

[114] *According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.*

IV. ENVIRONMENTAL IMPACT ANALYSIS
H. NOISE

1. INTRODUCTION

The following analysis describes the existing noise environment within the proposed Project area and estimates future noise levels at surrounding land uses due to potential changes brought about by Project construction and operation.

2. ENVIRONMENTAL SETTING

a. Noise and Vibration Basics

(1) Noise

Sound is something that can be heard. Noise is generally defined as unwanted sound. Although sound can be easily measured, the perceptibility of sound is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound in subjective terms such as "noisiness" or "loudness." Sound pressure is measured and quantified using a logarithmic ratio, the scale of which gives the level of sound in decibels (dB). The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human, frequency-dependent response, the A-weighted system is used to adjust measured sound levels. The A-weighted sound level is expressed as "dBA." This scale de-emphasizes low frequencies to which human hearing is less sensitive and focuses on mid- to high-range frequencies. Due to the physical characteristics of noise transmission and reception, an increase of 10 dBA is normally required to achieve a doubling of the "loudness," as perceived by the human ear. In addition, a 3-dBA increase is recognizable to most people in the context of the community noise environment. A change in noise level will usually not be detectable unless the new noise source is at least as loud as the ambient conditions. Typical A-weighted sound levels measured for various sources, as well as people's responses to these levels, are provided in Table 44 on page 416.

Objects that obstruct the line-of-sight between a noise source and a receiver reduce the noise level if the receiver is located within the "shadow" of the obstruction, such as behind a sound wall. This type of sound attenuation is known as "barrier insertion loss." If a receiver is located behind the wall but still has a view of the source (i.e., line-of-sight not fully blocked), some barrier insertion loss would still occur, however to a lesser extent. Additionally, a receiver

Table 44

Sound Levels and Human Response

Noise Source	Noise Level (dBA)	Response
Military Jet Takeoff (50 ft.) Civil Defense Siren (100 ft.)	130	Pain Threshold
Commercial Jet Takeoff (200 ft.)	120	
Unmuffled Motorcycle Auto Horn (3 ft.) Riveting Machine	110	Physical Discomfort
Diesel Pile Driver (100 ft.) Ambulance Siren (100 ft.) Garbage Truck (3 ft.)	100	Very Loud and Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck (50 ft.) Pneumatic Drill (50 ft.)	90	
Freight Train (50 ft.) Shouting (3 ft.)	80	Annoying
Freeway Traffic (50 ft.) Vacuum Cleaner (3 ft.) Power Mower (100 ft.)	70	Telephone Use Difficult
Dishwashers Air Conditioning Units (20 ft.)	60	Intrusive
Light Auto Traffic (100 ft.)	50	
Living Room Bedroom	40	Quiet
Library Soft Whisper (5 ft.)	30	Very Quiet
Broadcasting Studio	20	Just Audible

Source: Melville C. Branch, R. Dale Beland et al., 1970, Outdoor Noise in the Metropolitan Environment, p. 2.

located on the same side of the wall as a noise source may actually experience an increase in the perceived noise level as the wall reflects noise back to the receiver, thereby compounding the noise.

Time variation in noise exposure is typically expressed in terms of the average energy over time (L_{eq}), or alternatively, as a statistical description of the sound level that is exceeded over some fraction of a given period of time. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of

the level that is exceeded 30 minutes in an hour. Similarly, the L_8 and L_{25} represent the noise levels that are exceeded 8 and 25 percent of the time, respectively, or for 5 and 15 minutes during a 1-hour period, respectively.

Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum noise levels observed during a measurement period. Maximum and minimum noise levels, as compared to the L_{eq}, are a function of the characteristics of the noise source. For example, sources such as compressors, generators, and transformers have maximum and minimum noise levels that are similar to their L_{eq} levels since noise levels for steady-state noise sources do not substantially fluctuate. However, as another example, vehicular noise levels along local roadways result in substantially different minimum and maximum noise levels when compared to the L_{eq} since noise levels fluctuate during pass by events.

Although the A-weighted scale accounts for the range of people's response, and therefore, is commonly used to quantify individual event or general community sound levels, the degree of annoyance or other response effects also depends on several other perceptibility factors. These factors include:

- Ambient (background) sound level;
- Magnitude of sound event with respect to the background noise level;
- Duration of the sound event;
- Number of event occurrences and their repetitiveness; and
- Time of day that the event occurs.

Several methods have been devised to relate noise exposure over time to human response. A commonly used noise metric for this type of study is the Community Noise Equivalent Level (CNEL). The CNEL, originally developed for use in the California Airport Noise Regulation, adds a 5 dBA penalty to noise occurring during evening hours from 7:00 P.M. to 10:00 P.M., and a 10 dBA penalty to sounds occurring between the hours of 10:00 P.M. to 7:00 A.M. to account for the increased sensitivity to noise events that occur during the quiet evening and nighttime periods. Thus, the CNEL noise metric provides a 24-hour average of A-weighted noise levels at a particular location, with an evening and a nighttime adjustment, which reflects increased sensitivity to noise during these times of the day.

(2) Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration velocity is most often described in terms of peak particle velocity (PPV) or in terms of root-mean-square (rms) vibration decibels (VdB) for purposes of ground-borne vibration analysis. Ground-borne vibration is generally a concern inside buildings and is rarely perceived as a problem outdoors. Vibration energy propagates from a source through intervening soil and rock layers, to the foundations of nearby buildings and from the foundation throughout the building structure. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumble noise is caused by the vibrating walls, floors and ceilings radiating sound waves.

Typical sources of ground-borne vibration are construction equipment, steel-wheeled trains, and occasional traffic on rough roads. Problems from ground-borne vibration and noise from these sources are usually localized to areas within 100 feet from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures during construction generates the highest vibrations. Construction equipment such as vibratory compactors, heavy trucks, and pavement breakers can generate perceptible vibration during construction activities at distances of 10 to 25 feet. Pile drivers can generate perceptible vibration at up to 100 feet. Figure 37 on page 419 shows common vibration sources and the human and structural response to ground-borne vibration. The threshold for human perception of vibration identified by the Federal Transit Administration (FTA) is shown to be approximately 65 VdB. The background vibration velocity level in residential areas is usually 50 vibration decibels (VdB) or lower, well below the 65 VdB threshold. Although the perceptibility threshold is about 65 VdB, human response to vibration is not usually significant unless the vibration exceeds 70 VdB.

b. Regulatory Framework

Many government agencies have established noise standards and guidelines to protect people from potential hearing damage and various other adverse physiological and social effects associated with noise and ground-borne vibration. Standards and guidelines that may be applicable to this project are discussed below.

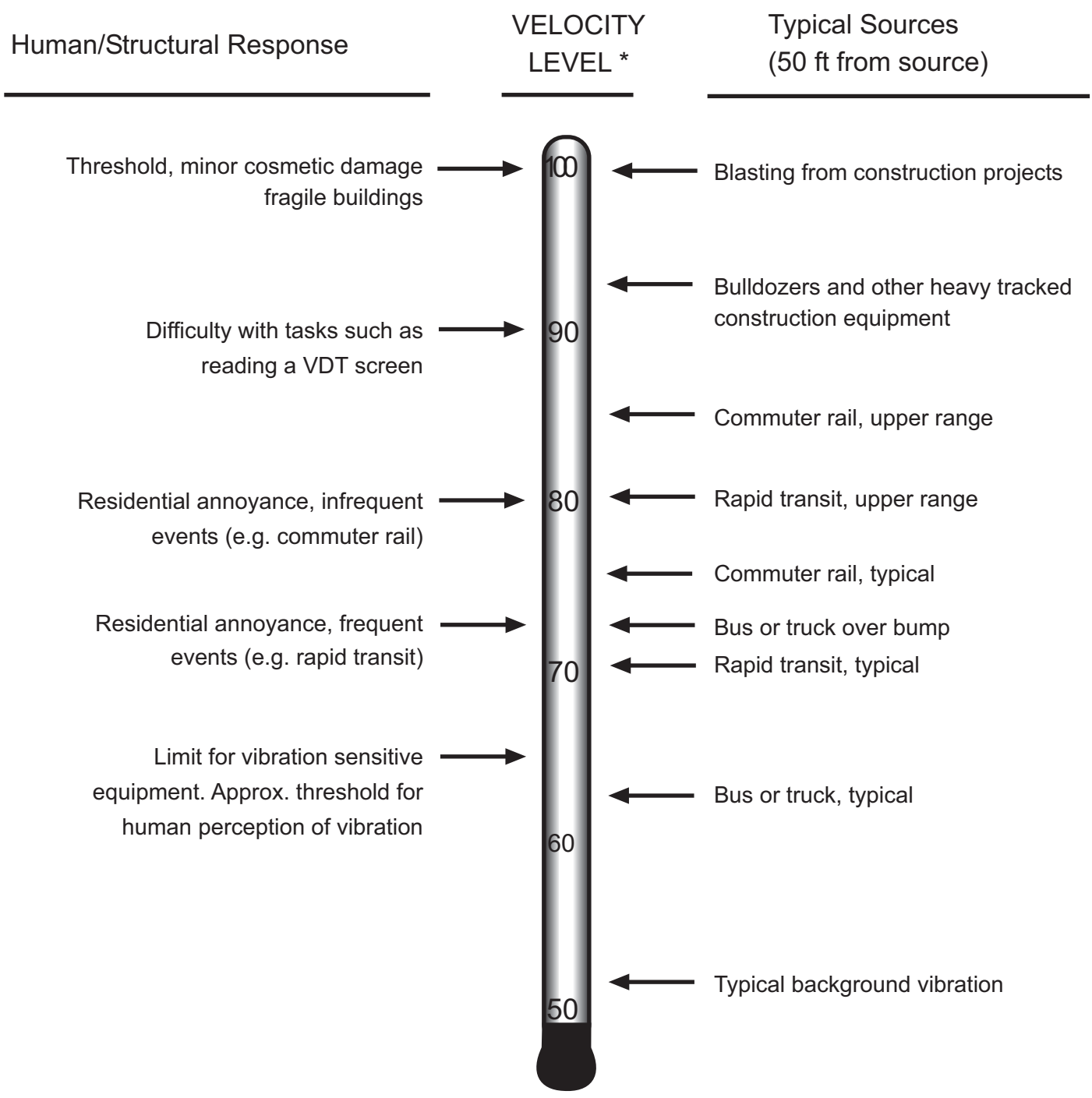

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Figure 37
Typical Levels of Ground-Borne Vibration

Source: Federal Transit Administration, US Department of Transportation, April 1995

(1) Applicable Federal Policies

(a) Noise

The U.S. Department of Housing and Urban Development (HUD) has set a goal of 45 dBA L_{dn} as a desirable maximum interior standard for residential units developed under HUD funding. While HUD does not specify acceptable exterior noise levels, construction standards for residential dwellings typically provide 20 dBA of acoustical attenuation with the windows closed and 10 dBA with the windows open. Based on this assumption, the exterior L_{dn} or CNEL should not exceed 65 dBA under normal conditions.

(b) Vibration

The U.S. Bureau of Mines suggests a PPV threshold of 0.5 inches/second for minor cosmetic cracking of plaster and 0.75 inches/second for cosmetic cracking of dry-wall within residential construction. Structural damage to engineered concrete and steel construction has a PPV threshold of 2.0 inches/second and buried pipes and mains have undergone vibration levels of 3.0 inches/second (PPV) without damage. These standards are the most widely used for both cosmetic and structural performance.

The Federal Transit Administration (FTA) has adopted vibration criteria/guidelines/ recommendations for ground-borne vibration based on the building types that neighbor roadway/transit corridors. Based on the FTA's document "Transit Noise and Vibration Impacts Assessments," April 1995, construction-period vibration levels of 0.2 inch-per-second should be considered as damage threshold criterion for "fragile" buildings and 0.12 inch-per-second for "extremely fragile" historic buildings. These vibration threshold criteria are stated in Peak Particle Velocity (PPV) which is most applicable to construction related vibration sources (i.e., machinery and equipment). The vibration criteria with respect to building damage to "well engineered" structures from construction activities is noted in Caltrans technical publication "Transportation Related Earthborne Vibrations, Caltrans Experience", July 24, 1992. As stated therein, a vibration level of 2.0 inch-per-second PPV is recommended as a safe criterion for well engineered structures.

(2) Applicable State of California Policies

(a) Noise

The California Department of Health Services (DHS) Office of Noise Control has studied the correlation of noise levels and their effects on various land uses. As a result, the DHS has established four categories for judging the severity of noise intrusion on specified land uses:

- Normally Acceptable: is generally acceptable, with no mitigation necessary.

- Conditionally Acceptable: may require some mitigation, as established through a noise study.

- Normally Unacceptable: requires substantial mitigation.

- Clearly Unacceptable: probably cannot be mitigated to a less than significant level.

The types of land uses addressed by the State standards and the acceptable noise categories for each land use are included in the *State of California General Plan* which is published and updated by the *Governor's Office of Planning and Research*. The State standards indicate, an exterior noise level up to 65 dBA CNEL is "normally acceptable" for multiple family residential uses, without special noise insulation requirements. A noise level between 60 CNEL and 70 CNEL is considered "conditionally acceptable" for multiple family residential uses, while a noise level of 75 dBA CNEL or more is identified as "clearly unacceptable" for all residential uses.

(b) Vibration

There are no adopted State policies or standards for ground-borne vibration. In most circumstances common vibrations related to roadway traffic and construction activities pose no threat to buildings or structures. However, Caltrans recommends that extreme care be taken when sustained pile driving occurs within 25 feet of any building, and 50-100 feet of a historic building or any building in poor condition.

(3) Applicable City of Carson Policies and Regulations

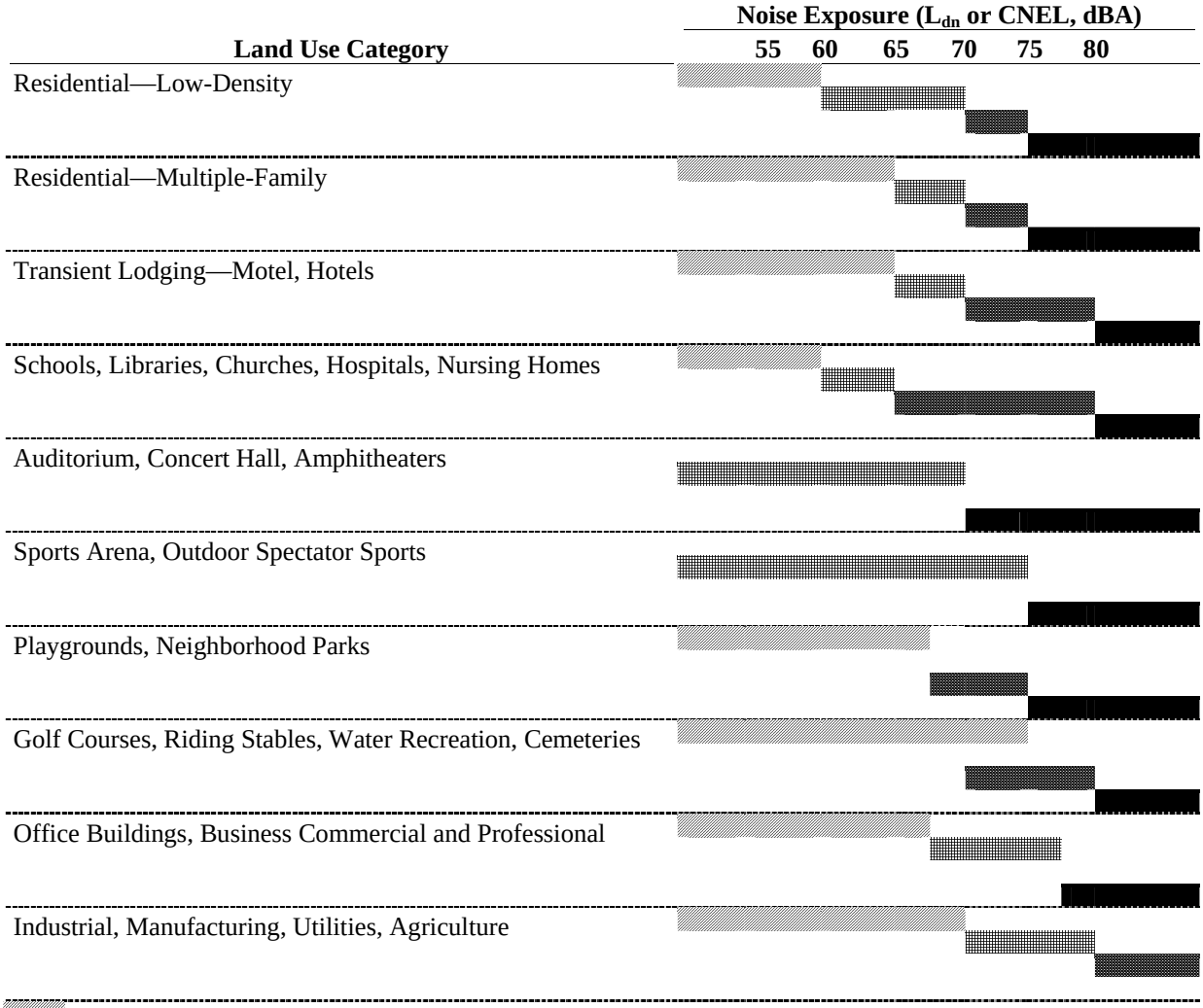
(a) Noise

General Plan Noise Element

Section 65302(f) of the California Government Code, requires each community to prepare and adopt a comprehensive long-range General Plan for its physical development containing seven mandatory elements, including a Noise Element. The Noise Element of a General Plan is a comprehensive program to limit the exposure of the community to excessive noise levels. The City of Carson has adopted local guidelines based on the community noise compatibility guidelines established by the California Department of Health Services, for use in assessing the compatibility of various land use types with a range of noise levels. The noise/land use compatibility adopted by the City's General Plan is presented in Table 45 on page 422. Furthermore, the General Plan includes interior and exterior noise standards as summarized in Table 45. This table shows standards and criteria that specify acceptable limits of noise for various land uses throughout the City of Carson. The City uses the standards identified in Tables 44 and 45 as the primary tools to ensure compatibility between land uses and outdoor ambient noise.

Table 45

Land Use Compatibility for Community Noise Sources



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

CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

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

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken. Construction costs to make the indoor environmental acceptable would be prohibitive and the outdoor environment would not be usable.

Source: City of Carson General Plan (Modified from the State of California Standards), 2003.

The Noise Element of the General Plan of the City of Carson includes the following policies that are applicable to the development of new projects such as the proposed Project:

- *Policy N-7.1* Incorporate noise considerations into land use planning decisions by establishing acceptable limits of noise for various land uses throughout the community.

  – *Implementation Measure N-IM-7.1* Adopt the noise standards presented in Table 45 on page 422, which identify interior and exterior noise standards in relation to specific land uses.

- *Policy N-7.2* Continue to incorporate noise assessments into the environmental review process, as needed. Said assessments shall identify potential noise sources, potential noise impacts, and appropriate sound attenuation. In non-residential projects, potential noise sources shall include truck pick-up and loading areas, locations of mechanical and electrical equipment, and similar noise sources. Require mitigation of all significant noise impacts as a condition of project approval.

  – *Implementation Measure N-IM-7.4* Require a noise impact evaluation for projects through the environmental review process, if determined necessary.

- *Policy N-7.3* Require all new residential construction in areas with an exterior noise level greater than 65 dBA CNEL to include sound attenuation measures that reduce interior noise levels to the standards shown in Table 46 on page 424. Sound attenuation measures include: sound walls, double glazing, building location, and/or facade treatment.

  – *Implementation Measure N-IM-7.3* Incorporate noise reduction features during site planning.

  – *Implementation Measure N-IM-7.6* Require that automobile and truck access to commercial and industrial developments, when located adjacent to residential neighborhoods, be located at the maximum practical distance from the residential parcel(s).

  – *Implementation Measure N-IM-7.8* Require that new commercial, industrial or any redevelopment projects or proposed developments near existing residential land uses demonstrate compliance with the City Noise Ordinance prior to approval of the project.

- *Policy N-7.4* Ensure acceptable noise levels near schools, hospitals, convalescent homes, churches, and other noise sensitive areas in accordance with Table 46. To this end, require buffers or appropriate mitigation of potential noise sources. Such

Table 46

Interior and Exterior Noise Standards

Land Use		CNEL, dBA	
Category	**Use**	**Interior** [a]	**Exterior** [b]
Residential	Single- and Multi-Family, Duplex,	45 [c]–55	50–60
	Mobile Home	45	65 [d]
Commercial Industrial Institutional	Hotel, Motel, Transient Lodging	45	—
	Commercial Retail, Bank, Restaurant	55	—
	Office Building, Research and Development, Professional Office, City Office Building	50	—
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	—
	Gymnasium (Multipurpose)	50	—
	Sports Club	55	—
	Manufacturing, Warehousing, Wholesale, Utilities	65	—
	Movie Theaters	45	—
Institutional	Hospital, Schools' Classrooms	45	65
	Church, Library	45	—
Open Space	Parks	—	65

[a] *Indoor environment including: bathrooms, closets, and corridors.*

[b] *Outdoor environment limited to:*
- *Private yard of single-family residences*
- *Multi-family private patio or balcony which is served by a means of an exit from inside the dwelling (balconies 6 feet deep or less are exempt)*
- *Mobile home park*
- *Park's picnic area*
- *School's playground*

[c] *Noise level requirement with closed window. Mechanical ventilating system or other means of natural ventilation shall be provided per Chapter 12, Section 1205 of Uniform Building Code (UBC).*

[d] *Exterior noise level should be such that interior noise level will not exceed 45 CNEL.*

Source: City of Carson General Plan, October 11, 2004. Chapter 7, Noise Element, Table N-3.

sources include, but are not limited to truck pickup and loading areas, mechanical and electrical equipment, exterior speaker boxes, and public address systems.

– *Implementation Measure N-IM-7.4 Require a noise impact evaluation for projects through the environmental review process, if determined necessary.*

- *Policy N-8.1* Require the design of mixed use structures to incorporate techniques to prevent transfer of noise and vibration from the commercial to the residential uses.

– *Implementation Measure N-IM-8.1 Orient residential units away from major noise sources in mixed use projects.*

- *Policy N-8.2* Encourage commercial uses in mixed use developments which are not noise intensive.

  – *Implementation Measure N-IM-8.2 Locate balconies and operable windows of residential units in mixed use projects away from primary roadways and other major noise sources.*

City of Carson Municipal Code

The City of Carson adopted the "Los Angeles County Noise Ordinance" as the City's Noise Control Ordinance in 1995.[115] The adopted Noise Ordinance Standards, derived from Los Angeles County Code Section 12.08.390 (Exterior Noise Standards) and Section 12.08.400 (Interior Noise Standards), establish exterior and interior noise standards to regulate operational (post-construction) intrusive noises (e.g., stationary mechanical equipment, vehicles other than those traveling on public streets) within specific land use zones. These noise standards are summarized in Table 47 on page 426. The Noise Ordinance standards also allows for higher noise levels with shorter durations as presented in Table 48 on page 426. The second column of Table 48 lists the time limits for the maximum exterior noise levels (dBA at the receptor property), which cannot be exceeded. The third column lists the equivalent noise metric in terms of "percent noise level" or L%. The percent noise level describes the noise level that is exceeded during a certain percentage of the measurement period. For example, the L_{50} noise level is the level exceeded 50 percent of the measurement period or 15 minutes in half an hour. In the event that the ambient noise level exceeds any of the noise limit categories, the cumulative period applicable to that category shall be increased to reflect the ambient noise level.

As shown in Table 47, the Carson Municipal Code (CMC) sets a maximum noise level from any noise source in a residential zone at 50 dBA, when measured at the property line. However, if the existing ambient noise level exceeds 50 dBA, the limit is adjusted to reflect the measured ambient maximum noise level (e.g., the existing ambient L_{50} becomes the exterior noise level for Standard 1).

Section 5502 (c) of the CMC provides exterior noise standards that regulate construction noise near residential uses. Noise standards for non-scheduled, intermittent, short-term operations (less than 20 days), as well as standards for repetitively scheduled and relatively long-term construction operations (periods of 21 days or more) of equipment are summarized in Table 49 on page 427. As indicated in Table 49, the Ordinance provides two sets of limits on construction noise: (1) between the hours of 7:00 A.M. and 8:00 P.M., Monday through

[115] *Section 5500 of the Carson Municipal Code adopts Chapter 12.08 of Title 12 for the Los Angeles County Code, as amended and in effect on August 1, 1995, as the Noise Control Ordinance for the City of Carson.*

Table 47

Noise Ordinance Standards

Noise Zone	Land Use (Receptor Property)	Time Interval	Noise Level (dBA) Exterior	Interior
I	Noise-Sensitive Area	Anytime	45	—
II	Residential Properties	10:00 P.M. to 7:00 A.M.	45	—
		7:00 A.M. to 10:00 P.M.	50	—
III	Commercial Properties	10:00 P.M. to 7:00 A.M.	55	—
		7:00 A.M. to 10:00 P.M.	60	—
IV	Industrial Properties	Anytime	70	—
All Zones	Multi-Family Residential	10:00 P.M. to 7:00 A.M.	—	40
		7:00 A.M. to 10:00 P.M.	—	45

Source: City of Carson General Plan, October 11, 2004. Chapter 7, Noise Element, Table N-4.

Table 48

City Limits For Exterior Noise Exposure

Referenced Standard Number in CMC [a] § 5502(b)	Maximum Time of Exposure Within Any 30-Minute Period	Noise Metric	Exterior Noise Level Not to Be Exceeded [b]
1	15.0 Minutes	L_{50}	Standard 1 [b]
2	7.5 Minutes	L_{25}	Standard 1 + 5 dB
3	2.5 Minutes	$L_{8.3}$	Standard 1 + 10 dB
4	30.0 Seconds	$L_{1.7}$	Standard 1 + 15 dB
5	Any period of time	L_{max}	Standard 1 + 20 dB

[a] *CMC: Carson Municipal Code.*

[b] *If the ambient noise level (L_{XX}) exceeds the foregoing level, then the ambient noise level (L_{XX}) becomes the existing exterior noise level for the standard.*

Source: Carson Municipal Code Section 5502(b).

Saturdays; and (2) between the hours of 8:00 P.M. and 7:00 A.M. and on Sundays and on legal holidays.

Section 5502 (d) limits the loading and unloading operations to daytime hours. It states: "Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans or similar objects between the hours of 9:00 P.M. and 7:00 A.M. in such a manner as to cause noise disturbance is prohibited."

Table 49

Maximum Construction Noise Limits

Construction Time	Maximum Allowed Noise Level (dBA)	
	Single-Family Residential	Multi-Family Residential
a. Maximum noise levels for nonscheduled, intermittent, short-term operation of 20 days or less for construction equipment.		
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	75	80
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	60	64
b. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 21 days or more) of construction equipment		
Daily, except Sundays and legal holidays, 7:00 A.M. to 8:00 P.M.	65	70
Daily, 8:00 P.M. to 7:00 A.M. and all day Sunday and legal holidays	55	60

Source: Carson Municipal Code Section 5502(c).

(b) Vibration

The City of Carson does not have adopted policies or standards for construction ground-borne vibration. The only applicable policy in the General Plan Noise Element is Policy N-8.1, which requires that the design of mixed-use structures incorporate techniques to prevent transfer of noise and vibration from the commercial uses to the residential uses. The Los Angeles County Noise Regulation (LAMC Section 12.08.350) provides a presumed perception limit of 0.01 inch per second RMS for sources of ground-borne vibrations during long-term activities.

c. Existing Local Noise Conditions

The predominant noise source within the Project site is roadway noise from the San Diego freeway (I-405), and local roadways such as Main Street which is located east and west of the Project site, respectively. Del Amo Boulevard, which separates District 3 from Districts 1 and 2 is also a predominant noise source at the Project site. Traffic on the Harbor Freeway (I-110) and Avalon Boulevard also contribute to existing noise levels at the Project site, although to a lesser degree due to the effect of distance and intervening buildings and topography. Other community noise sources include incidental noise from nearby existing commercial uses, and landscaping maintenance activities at nearby residential and commercial uses. Each of these noise sources is discussed in the following sections. As the Project site is currently vacant, no on-site noise generating activities presently occur.

(1) Noise Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others, due to the types of activities typically involved at the receptor location. Specifically, the City of Carson has identified residences, public and private school classrooms, libraries, hospitals and elderly care facilities as noise sensitive receptors. The nearest sensitive residential receptors that may be affected by the proposed Project are the one- and two-story detached residences and mobile homes that are located across the Torrance Lateral drainage channel to the south and west of the Project site. The noise sensitive land uses in the Project area are depicted in Figure 38 on page 429.

(2) Ambient Noise Levels

Ambient sound measurements were conducted at four different locations around the perimeter of the Project site to characterize the existing noise environment in the Project vicinity. Each measurement was conducted for two consecutive days between July 12 and July 20, 2005. The measurement locations are also shown in Figure 38 and the sound measurement data are summarized in Table 50 on page 430. The measurement locations were selected based on their proximity to noise sensitive receptors that may potentially be affected by proposed Project noise sources. As shown in Table 50, the measured CNEL values range between 67.5 dBA and 73.8 dBA at the measurement locations. The CNEL at the locations near the two neighboring mobile home parks are 72.2 dBA and 73.8 dBA (Locations 3 and 4 on Figure 38). These noise levels exceed the City of Carson's exterior noise standard limits for sensitive receptors (see Table 46 on page 424); and are considered "normally unacceptable" based on the City's community noise/land use compatibility criteria, as presented in Table 45 on page 422. However, these noise levels are consistent with noise levels in similar noise measurement locations conducted for the City of Carson's General Plan EIR in 2003. Although measurement Location 2 is relatively close to the I-405 Freeway, the CNEL at this location is lower than the other measurement locations due to existing features (e.g., depressed grade of the freeway segment and the presence of earth berms along the site boundary) that cause attenuation of noise from the freeway.

To further characterize the existing noise environment in the Project area, the noise level from traffic on local roadways was forecasted using the traffic data included within the Project's traffic study. The traffic noise was modeled using a version of the Federal Highway Administration Traffic Noise Prediction Model (FHWA-RD-77-108). The model determines a predicted noise level through a series of adjustments to a reference sound level. To compute the L_{eq} during the peak hour of traffic, several parameters (such as traffic volumes, roadway geometry, and vehicle speed and mix) were input into the model for each roadway segment analyzed. In accordance with FHWA-RD-77-108, to calculate CNEL the peak-hour traffic volume was assumed to be 10 percent of the average daily traffic (ADT) volume. Table 51 on page 431 summarizes the traffic noise modeling results for existing conditions.

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Figure 38
Noise Sensitive Receptors and Measurement Locations

Table 50

Summary of Ambient Noise Measurement Data (dBA) [a]

Location Number [b]	Measurement Location [b]	Long-Term (48-Hour) Monitoring Data						
		Daytime Hourly L_{eq}			Nighttime Hourly L_{eq}			
		Avg.	Min.	Max.	Avg.	Min.	Max.	CNEL
1	North of the Project site, south of Del Amo Blvd	67.5	63.6	70.1	61.8	52.5	67.7	70.0
2	Northeast, west of I-405	60.3	57.0	62.3	60.8	55.8	64.0	67.5
3	Southeast, across from Torrance Channel and the mobile homes	65.0	59.2	70.3	67.5	61.3	72.3	73.8
4	Northwest, across from Torrance Channel and mobile homes	68.3	54.4	75.4	65.1	54.5	69.9	72.2

[a] *Based on ambient sound measurements conducted from July 13 through July 20, 2005. Noise measurement data is provided in Appendix G of this EIR.*

[b] *Noise measurement locations are shown in Figure 38 on page 429.*

Source: PCR Services Corporation, 2005.

As shown in Table 51, the calculated CNEL for the analyzed roadway segments as a result of existing traffic volumes ranged from 56.7 dBA to 67.1 dBA at 50 feet from the roadway right-of-way. These levels are predicted based on surface-street traffic volumes only and are generally lower than the measured noise levels provided in Table 50. This is due to the fact that Project site is currently undeveloped and vacant, therefore, the area receives unshielded noise from I-405 Freeway traffic which increases the overall noise level experienced by the local community. Nevertheless, the roadway traffic noise levels, shown in Table 56 on page 443, indicate that all land uses located near the Project site, with the exception of residents south of Torrance Boulevard, are currently exposed to community noise levels above 65 CNEL. As such, these noise levels exceed the City of Carson's exterior noise standard limits for sensitive receptors (see Table 46 on page 424); and are considered "conditionally acceptable" based on the City's community noise/land use compatibility criteria as provided earlier in Table 45 on page 422. According to the roadway noise prediction model, CNEL of approximately 71 dBA occurs at the edge of Del Amo Boulevard along the northern boundary of the Project site and along Avalon Boulevard adjacent to the existing mobile homes. This CNEL is considered "normally unacceptable;" however, noise levels would be reduced at areas farther away from the edge of these two roadways.

Table 51

Calculated Traffic Noise Level for Existing Conditions[a]

Roadway Segment	Peak Hour L_{eq} (dBA) Adjacent to Right-of-Way	Predicted Existing CNEL (dBA) at Referenced Distances from Roadway Right-of-Way		
		Adjacent	50 feet	100 feet
Del Amo Boulevard				
South Main Street to Stamps Drive	69.4	70.7	66.7	64.7
East of Stamps Drive	69.7	70.9	67.0	64.9
South Main Street				
Del Amo Boulevard to Torrance Boulevard	67.7	68.9	65.2	63.3
Torrance Boulevard to 213th Street	68.6	69.9	66.4	64.5
Torrance Boulevard, East of South Main Street	60.9	62.2	56.7	54.4
Avalon Boulevard, I-405 SB Ramps to 213th Street	69.9	71.1	67.1	65.1
213th Street				
West of Avalon Boulevard	65.1	66.4	61.5	59.2
East of South Main Street	63.1	64.4	60.4	58.4

[a] *Noise modeling output files and assumptions, which include traffic volumes and vehicular fleet mix, are detailed in Appendix G.*

Source: PCR Services Corporation, 2005.

3. ENVIRONMENTAL IMPACTS

a. Methodology

A summary of the methodology used to evaluate noise and ground-borne vibration impacts, that may result from project construction and long-term operations is provided below.

(1) Short-Term Construction Noise

Construction noise impacts are evaluated by determining the noise levels generated by the different types of construction activity, calculating the construction-related noise level at nearby sensitive receptor locations, and comparing these construction-related noise levels to ambient noise levels (i.e., noise levels without construction noise). More specifically, the following steps were undertaken to calculate construction-period noise impacts:

1. Ambient noise levels at surrounding sensitive receptor locations were determined from field measurements (see Table 50 on page 430);

2. Noise levels for each construction phase and individual construction equipment were obtained from *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* published by the EPA and the *Transit Noise and Vibration Impact Assessment* published by the FTA, respectively.

3. Distances between construction site locations (noise source) and surrounding sensitive receptors were measured;

4. The construction noise level was then calculated for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance;

5. Noise level increases were compared to the construction noise significance thresholds identified below.

6. Where significant impacts were identified, feasible mitigation measures were prescribed.

(2) Long-Term Operational Noise

(a) Roadway Traffic Noise

Roadway noise impacts were evaluated based on the Federal Highway Administration (FHWA) roadway traffic noise prediction model (RD-77-108). The model arrives at a predicted noise level through a series of adjustments to a reference sound level. Adjustments are made by the model to account for traffic flows, varying distances from the roadway, roadway configurations, barrier type and configuration (if any). Roadway-noise attributable to project development was calculated and compared to baseline noise levels that would occur under the "no project" condition to determine significance based on the significance criteria, described below.

(b) Stationary Point-Source Noise (During Project Operations)

Stationary point-source noise impacts are evaluated by identifying the noise levels generated by outdoor stationary noise sources such as rooftop mechanical equipment and loading dock activities, calculating the hourly L_{eq} noise level from each noise source at surrounding sensitive receiver property line locations, and comparing such noise levels to ambient noise levels to determine significance based on the previously described significance criteria.

(c) Ground-Borne Vibration

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, measuring the distance between vibration sources and surrounding structure locations,

and making a significance determination based on the significance threshold levels as presented below in Section b.3.

b. Thresholds of Significance

(1) Construction Noise

Based on the City of Carson standards discussed above, the proposed Project would have a significant impact on noise levels during Project construction if:

- Construction activities lasting 20 days or less would exceed a maximum noise level of:
  - 75 dBA at single-family residential uses and 80 dBA at multi-family residential uses, between the hours of 7:00 A.M. and 8:00 P.M. Monday through Saturday;
  - 60 dBA at single-family residential uses and 64 dBA at multi-family residential uses, between the hours of 8:00 P.M. and 7:00 A.M. on Sunday or a national holiday.
- Construction activities lasting more than 20 days would exceed a maximum noise level of:
  - 65 dBA at single-family residential uses and 70 dBA at multi-family residential uses, between the hours of 7:00 A.M. and 8:00 P.M. Monday through Saturday;
  - 55 dBA at single-family residential uses and 60 dBA at multi-family residential uses, between the hours of 8:00 P.M. and 7:00 A.M. Monday through Saturday or any time on Sunday or a national holiday.

(2) Operational Noise

Based on the City of Carson General Plan and Municipal Code standards discussed above, the proposed Project would have a significant impact on noise levels during Project operations if:

- The Project causes the ambient noise level measured at the property line of affected uses to increase by 5 dBA in CNEL within the "normally acceptable" or "conditionally acceptable" category, or by 3 dBA in CNEL to or within the "normally unacceptable" or "clearly unacceptable" category (see Table 45 on page 422).
- On-site noise sources, other than roadway noise, increase ambient noise by 5 dBA, thus causing a violation of the City Noise Ordinance.

(3) Ground-Borne Vibration

The City of Carson does not have adopted policies or standards for construction or operational ground-borne vibration. However, the Federal Transit Authority (FTA) provides a construction equipment vibration damage threshold criterion of 0.20 inches per second PPV for fragile buildings (U.S.DOT, 1995) and 2.0 inch per second PPV for well engineered structures (Caltrans, 1992). Thus, an exceedance of the FTA standard for fragile buildings was used to determine construction related ground-borne vibration impacts, and the County of Los Angeles standard for human perception described earlier is used to evaluate potential impacts related to Project operations. Therefore, impacts relative to ground-borne vibration would be considered significant if the following were to occur:

- Project construction activities generate ground-borne vibration levels above 0.2 in/s PPV for mobile home residences and 2.0 in/s PPV for well-engineered structures (e.g., the single-family residential structures located south and west of the Project site).[116]

- Project operational activities generate a ground-borne vibration level of 0.01 RMS or higher at any off-site structure.

c. Analysis of Project Impacts

(1) Construction Impacts

(a) Construction Noise

(i) On-Site Construction Noise

The proposed Project would include construction of up to 1,550 residential units and the development of 1,995,125 square feet of commercial floor area. In addition to the proposed urban development program, the proposed Project includes the remediation of a former landfill on the 157-acre portion of the Project site that is located south of Del Amo Boulevard (i.e., Districts 1 and 2). Therefore, Project construction activities include site preparation, on-site remediation, and site construction. As part of the proposed Project involves the redevelopment of a former landfill, site preparation activities would include deep dynamic compaction (DDC) within the portion of the property that was used for landfill operations.[117] As such, site

[116] *As discussed previously, three mobile home parks are located to the southwest of the Project site. Mobile home building code requirements are different than standard wood-frame construction. Thus, the more conservative vibration significance threshold for fragile buildings was selected for use in this analysis.*

[117] *Deep dynamic compaction is a site preparation method used for compacting and strengthening loose or soft soils to support buildings, roadways, and other heavy construction. The method involves the systematic and*
(Footnote continued on next page)

preparation would involve mass grading, DDC, fill and cap installation, grading and the construction of building pads. Site preparation activities within Districts 1 and 2 would be integrated with remediation and subsurface construction in order to facilitate simultaneous construction activities of the landfill cap and the landfill gas collection system.

Construction of the on-site remediation program is designed to integrate the foundation supports cap construction to preserve the integrity of the cap during construction. The Remedial Action Plan (RAP) for the Upper OU, which was approved by the Department of Toxic Substances Control (DTSC) in 1995, includes: (1) containment of the contaminated soil and buried waste through the use of a clay cap; (2) extraction and treatment of the groundwater; (3) collection and treatment of landfill gases; and (4) long-term monitoring of the groundwater and landfill gases. However, the Applicant proposes to use a synthetic membrane cap rather than a clay cap for the waste prism. In addition, refinements may be used to enhance or supplement the landfill gas system and perform in-situ groundwater treatment. Changes in the design of the remediation would only be allowed if DTSC determines that the proposed design accomplishes the same performance objectives as the previously approved design and is protective of human health and the environment. Specific details on the remedial activities that would be implemented on the landfill site are provided in Section IV.D, Hazards.

Site construction, including the installation of foundation piles, the establishment of structural slab, utilities installation, building construction, parking lot surfacing, and the installation of landscaping, is anticipated to take approximately three years to complete. In addition, improvement of the Avalon Boulevard/I-405 interchange would occur concurrent with on-site Project construction. The Construction of this off-site improvement would take between fifteen months to two years to complete.

As with most construction projects, construction would require the use of a number of pieces of heavy equipment such as impact soil compactors (for DDC operations), pile drivers, bulldozers, backhoes, cranes, loaders, and concrete mixers. In addition, both heavy- and light-duty trucks would be required to deliver construction materials to and export construction debris from each construction site. The maximum noise level generated by typical, individual pieces of construction equipment is provided in Table 52 on page 436. As indicated in Table 52, construction equipment would produce maximum noise levels of 74 dBA to 101 dBA at a reference distance of 50 feet from the noise source. These maximum noise levels would occur when equipment is operating under full power conditions or at the "impact" moment such as during pile driving and DDC activities. Using the industry standard sound attenuation rate of 6 dB per doubling of distance for point sources (e.g., construction equipment), a noise level of 101

repetitive dropping of heavy weights in a pattern designed to remedy poor soil conditions at a proposed building site. Because the energy imparted is considerable, compaction can be achieved at substantial depths below the ground surface.

Table 52

Construction Equipment Maximum Noise Levels

Equipment	Noise Level (dBA) at 50 feet
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Jack Hammer	88
Loader	85
Paver	89
Pile Driver (Impact)	107
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 1995.

dBA at a distance of 50 feet would be about 95 dBA at 100 feet, and 89 dBA at 200 feet. Furthermore, equipment used on construction sites often operates under less than full power conditions (i.e., partial power). Actual measurements performed while equipment is performing work, indicate that active noise levels are typically 2 to 15 dBA less than maximum noise levels. In addition, the impact noise associated with pile driving would substantially be reduced due to the lower density of material on site (i.e., trash with soil cover versus compact soils with rock).

In 1995, a DDC feasibility study was conducted for the Project site. Noise and vibration monitoring performed during the study indicates that the noise generated by the DDC operation could reach 65 dBA at a distance of approximately 500 feet from the operating DDC equipment.[118] However, the high noise level generated by the DDC mass impacting the ground

[118] *Woodward-Clyde, "Deep Dynamic Compaction Test Data Report for LA Metro Mall—Carson, California" December 1995.*

occurs for a very short time period, lasting less than one second per drop. On an average basis, a 65-dBA hourly L_{eq} would be reached at a distance of 200 to 370 feet from the DDC equipment depending on the intervening terrain and ground cover.[119]

The nearest sensitive receptors with potential to be disturbed by construction activities include the residential areas, consisting of the one-story and two-story detached residences and mobile homes, located to the south and west of the Project site. For example, the DDC activities, performed along the western and southern boundaries of the Project site, would be located as close as approximately 150 to 175 feet of the existing residences along the site boundary across the Torrance Lateral Flood Control Channel (a concrete-lined drainage channel, approximately 15 feet deep and 50 feet wide). During the time period that heavy-duty equipment operates near the boundary line, the maximum noise level (L_{max}) at a given moment would likely exceed 91 dBA for brief durations. Noise disturbances in those areas located adjacent to construction activities can be anticipated during construction. These disturbances would occur during site preparation activities and the subsequent construction of on-site structures. However, as construction activity moves toward the center of the Project site, the L_{max} noise level along portions of the nearest residential units would diminish considerably into dBA levels in the 60s and 70s.

With the exception of pile driving and DDC, composite construction noise (i.e., the noise generated from multiple pieces of construction equipment working concurrently) is best characterized in a study conducted by Bolt, Beranek, and Newman for the USEPA (USEPA December 31, 1971). The study concluded that noise during the heavier initial periods of construction is generally about 86 dBA L_{eq} when measured at a reference distance of 50 feet from the construction activity. This value takes into account both the number of pieces and spacing of the heavy equipment used in the construction effort, as well as the fraction of time the equipment works at full power. In later phases during building construction, noise levels are typically reduced from this value and the physical structures that are constructed often break up the line-of-sight noise transmission. The composite noise level for typical construction stages is shown in Table 53 on page 438.

In order to present a conservative analysis for construction noise, the 86 dBA noise level, the highest composite noise level, at a reference distance of 50 feet, was used to evaluate the proposed Project's construction noise impacts related to each of the construction stages except pile driving and DDC activities. The estimated aggregate construction noise levels during the heaviest periods of activity at residential uses on the west and south of the Project site are also provided in Table 53.

[119] *Ibid, p. 26–27.*

Table 53

Composite Average L_{eq} Noise Levels Per Construction Stage

Construction Stage	Composite Sound Level in dBA (L_{eq}) at Indicated Distance from Center of Construction Activity [a]				
	50 feet	100 feet	150 feet	200 feet	500 feet
Ground Clearing	82	76	72.5	70	62
Excavation, Grading	86	80	76.5	74	66
Foundation	77	71	67.5	65	57
Structural	83	77	73.5	71	63
Finishing	86	80	76.5	74	66
Deep Compaction [b]	83	77	73	71	63
Pile Driving [b]	99	93	89	87	79

[a] *A hard surface(e.g., areas that are not heavily vegetated) propagation path drop-off rate of 6 dB per doubling of distance is used.*

[b] *Assumed a combination of one truck and the impact equipment operating at an average of 60 percent of full power during one hour. Detailed calculations are provided in Appendix G.*

Source: EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971; and PCR Services Corporation, 2005.

As shown in Table 54 on page 439, the residences located to the west and south of the Project site immediately across the Torrance Lateral Channel, would occasionally experience construction noise levels of 76.5 dBA and 75.2 dBA (hourly L_{eq}), respectively, during the heaviest periods of construction. This is equivalent to an increase of 6.9 dBA and 11.5 dBA, respectively over the baseline ambient noise level (L_{eq}). As the worst-case hourly L_{eq} exceeds the ambient noise levels by more than the 5 dBA incremental significance threshold, construction of the proposed Project would result in a significant impact to off-site sensitive receptors without the incorporation of mitigation measures.

When pile driving occurs in the southern and western section of the Project site, nearby residences could experience short-duration, high impulse noise level (L_{max}) of 97.5 dBA and 96.5 dBA respectively. As the data from noise measurements (Table 6) indicate, the maximum ambient noise level (L_{eq}) at the residences located to the west and south of the Project site immediately across the Torrance Lateral, is 72.3 and 75.4 dBA. As such the maximum noise generated during pile driving and DDC would exceed the 20 dBA limit of the City's Municipal Code (as presented in Table 47 on page 426) without the incorporation of mitigation measures. Furthermore, due to the large number of driven piles that are required to construct the Project, the frequency of the noise impact results in the impact being concluded to be significant, even though the noise level of any individual driven pile would be less than significant.

Construction noise levels would be experienced intermittently as only portions of the Project site would be under construction at any one time. The majority of the time construction

Table 54

Highest Estimated L_{eq} Construction Noise Levels at Receptor Locations (During Heaviest Periods of Construction Activity for One-Hour Period)

Receptor Number and Land Use [a]	Measured Baseline Ambient Noise (dBA) [b]	Closest Distance to Construction Site (feet)	Predicted Aggregate Construction Noise (dBA) [c]	Increase Over Baseline (dBA)	Predicted Pile Driving Noise L_{max} (dBA)
1. Residential Uses to the South	68.3	175	75.2	6.9	96.1
2. Residential Uses to the West	65.0	150	76.5	11.5	97.5

[a] *Receptors are shown in Figure 38 on page 429.*
[b] *Based on the measured data shown in Table 50 on page 430 .*
[c] *Based on heaviest period of construction activity over a one-hour period.*

Source: PCR Services Corporation, 2005.

noise levels at sensitive locations would be much lower due to reduced construction activity and the phasing of construction (i.e., construction noise levels at a given location would be reduced as construction activities conclude or move to another more distant location of the site).

(ii) Off-Site Construction Noise

In addition to on-site construction noise, haul trucks, delivery trucks, and construction workers would require access to the site throughout the construction duration. While construction workers would arrive from many parts of the region, and thus different directions, haul trucks and delivery trucks would generally travel to the Project site via the I-405 freeway ramps at Avalon Boulevard (northbound travel) and Main Street (southbound travel), thus avoiding local streets with sensitive receptors. Furthermore, construction traffic would not be present during the noise-sensitive late evening and nighttime hours. As such, potential impacts would be less than significant, and no mitigation measures are necessary.

(iii) Impacts Due to Implementation of Proposed RAP Design Refinements

Construction activities required to implement the approved RAP would involve rough grading of the Project site and the installation of a clay cap over the waste prism within Districts 1 and 2. Constructing the clay cap consists of establishing a foundation layer that would be overlain by a 2-foot thick clay cover, and a 1.5-foot protective drainage layer. The proposed RAP design refinements include a geomembrane landfill cap constructed of prepared soil foundation, LLDPE (Linear Low Density Polyethylene) geomembrane, geotextile, composite drainage materials, and select cover soils. Thus, the proposed RAP design refinements would not require clay to be imported to the site, while the approved RAP construction would require

approximately 2,000 cubic yards of clay per day to be hauled to the site. This would require approximately 150 truck trips per 10-hour day, and 1.5 years to import the required amount of clay. This reduction in truck activity would eliminate potential off-site noise impacts attributable to this hauling activity, thereby reducing off-site noise impacts for those receptors that would be located along the haul route. While this reduction in off-site noise levels would occur under the proposed RAP design refinements, within the Project site itself, there would be only a limited change in the daily on-site equipment mix and the overall on-site construction noise levels would be similar under both the approved RAP and the proposed RAP design refinements.

(b) Construction Vibration

Construction can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receptor building(s). The results from vibration can range from no perceptible effects at the lowest vibration, to low rumbling sounds and perceptible vibrations at moderate levels, to damage at the highest levels. Notwithstanding, ground vibrations from construction activities rarely reach the levels that can damage structures. Typically, pile driving generates the highest vibration, although for the proposed Project, DDC activities would also result in potential vibration impacts. The FTA has published standard vibration velocities for construction equipment operations. The root mean square velocity level and peak particle velocities are shown in Table 55 on page 441. As shown in this data, vibration velocities from typical heavy construction equipment operations range from 0.003 to 0.644 inch/sec at 25 feet from the source of activity. At 75 feet from the source of activity, vibration velocities from typical heavy construction equipment operations range from 0.001 to 0.124 inch/sec. Within the Project site, the highest vibration from typical construction equipment (i.e., exclusive of DDC activities) would be generated during pile driving operations, while more consistent, but lower ground vibration would be generated during the clearing, excavation, and grading processes when heavy materials are moved. Residential sensitive land uses would be located at a sufficient distance (greater than 75 feet) from any potential pile driving activity so that vibration from such activities would be below the peak particle velocity threshold of 0.2 inch/sec. In addition, the vibration associated with pile driving would be substantially reduced due to the lower density of material on site (i.e., trash with soil cover versus compact soils with rock) and the intervening Torrance Lateral (i.e., impeding transmission of surface waves and higher-amplitude motion from pile driving).

Construction of the proposed Project also includes DDC of the portions of the property that were formerly used as a landfill site (i.e., Districts 1 and 2). DDC would be limited to approximately 60 acres of non-building space on the Project site. The DDC activities, performed along the western and southern boundaries of the Project site, would be located within

Table 55

Vibration Velocities for Construction Equipment

Equipment	Approximate Velocity Level at 25 ft, VdB	Approximate Peak particle Velocity at 25 ft, inch/second	Approximate Peak Particle Velocity at 75 ft, inch/second
Pile Driver (impact) [a]	104	0.644	0.124
Pile Driver (sonic) [a]	93	0.170	0.033
Hydromill (slurry wall in soil)	66	0.008	0.002
Hydromill (slurry wall in rock)	75	0.017	0.003
Large bulldozer	87	0.089	0.017
Caisson drilling	87	0.089	0.017
Loaded trucks	86	0.076	0.015
Jackhammer	79	0.035	0.007
Small bulldozer	58	0.003	0.001

[a] *Data reflects typical vibration levels.*

Source: USDOT Federal Transit Administration, 1995.

approximately 150 to 175 feet of the existing residences across the Torrance Lateral. As the Project site elevation is about 20 feet higher than these residences, a slope tapers down on the property edge and a drainage channel approximately 15 feet deep is located near the slope between the closest on-site areas wherein DDC would occur and the off-site residences.

The Applicant is proposing that the first step with regard to DDC operations is to conduct a testing or pilot program. The purpose of the pilot program is to assure that less than significant vibration impacts to off-site uses and/or facilities would occur once DDC operations are initiated on a site-wide basis. Under the pilot program the Applicant would install vibration monitors at the following locations: (1) along the Project's fenceline opposite the off-site residential uses located to the south and southwest of the Project site (i.e., within the Project site), and (2) along the far side of the Torrance Lateral Channel in line with the monitors placed within the Project site itself. Once the monitors are in place, DDC testing would commence. The testing procedures would consist of dropping increasing weights at increasing heights with concurrent checking of monitored levels so as to assure that off-site vibration levels do not exceed the 0.2 inches per second PPV significance threshold. Based on this testing program, an optimal set of DDC parameters would be established. Once the pilot program is completed, the off-site vibration monitors would remain in place throughout the DDC process, thereby providing ongoing protections for off-site uses and/or facilities throughout this phase of the Project's construction process. The pilot program, due to its importance with regard to precluding vibration impacts to off-site uses and/or facilities, has been incorporated as a mitigation measure which assures its implementation via the Project's Mitigation Monitoring and Reporting Program. Therefore, DDC activities near the western and southern boundaries of the Project site would not exceed the 0.2-inch-per-second PPV significance threshold for fragile structures, such

as the off-site mobile houses, and a less than significant short-term vibration impact to the existing mobile home residences along the Project site boundary would occur.

(2) Operational Impacts

(a) Operational Noise (Post-Construction)

The following analyses address potential noise impacts to neighboring noise-sensitive receiver locations, as well as the proposed on-site residential uses within the Project site, related to the long-term operations of the proposed Project, following completion of construction. Specific noise sources addressed in this analysis include roadway noise, mechanical equipment/point sources (i.e., loading dock and trash pick-up areas), and parking facilities.

(i) Off-Site Roadway Noise

According to the Project's traffic study, included as Appendix D to this Draft EIR, and summarized in Section IV.C, Traffic, Circulation and Parking, above, the proposed Project is forecasted to generate a maximum of 67,441 additional daily trips. The traffic volumes associated with these Project trips would have the potential to increase roadway noise levels on local roadways in and around the Project site. Table 56 on page 443 provides the calculated CNEL for analyzed roadway segments for the following: (1) existing conditions; (2) future without development of the proposed Project; and (3) future with development of the proposed Project. In addition, the increase attributed to Project-generated traffic volumes as well as cumulative increases (i.e., increase attributable to ambient growth, related projects, and proposed Project traffic volumes) above existing noise levels is also presented.

As shown in Table 56, the largest Project-related traffic noise impact is anticipated to occur along the segments of Del Amo Boulevard, between Stamps Drive and Figueroa Street (2.4 to 2.8 dBA increase in CNEL). However, no sensitive uses are located along these segments and impacts would be less than the 5 dBA significance threshold. Furthermore, impacts from Project-related traffic noise along all other local roadway segments, within proximity of the identified sensitive receptors, would be lower than the significance threshold of 3 dBA CNEL for sensitive receptors exposed to or within the "normally unacceptable" or "clearly unacceptable" categories. Thus, the Project's roadway noise impacts would be less than significant.

Noise/Land Use Compatibility Impacts

As mentioned above, and described in detail in the Project Description, the proposed Project includes approximately 1,550 residential units, consisting of condominiums and apartments. These residential uses would be located to the south and north of Del Amo Boulevard, within Development Districts 1 and 3, respectively. As the measured noise levels

Table 56

Roadway Traffic Noise Impacts at Representative Noise Sensitive Locations [a]

Roadway Segment	CNEL at 50 feet from Roadway Right-of-Way (dBA) Existing	Future (2010) No Project	Future (2010) With Project	Project Increment [b]	Cumulative Increment [c]
Del Amo Boulevard					
East of Stamps Drive	67.0	68.4	68.9	0.5	1.9
Stamps Drive to South Main Street	66.7	68.2	70.6	2.4	3.9
South Main Street to Figueroa Street	66.0	67.7	70.5	2.8	4.5
South Main Street					
North of Del Amo Boulevard	64.8	65.3	66.1	0.8	1.3
Del Amo Boulevard to Lenardo Drive	65.1	65.5	66.2	0.7	1.1
Leonardo Drive to Torrance Boulevard	67.9	68.3	69.8	1.5	1.9
Torrance Boulevard to 213th Street	65.1	65.5	66.4	0.9	1.3
213th Street to Carson Street	65.3	65.7	66.5	0.8	1.2
Leonardo Drive					
East of South Main Street	[d]	[d]	61.3	[d]	[d]
Torrance Boulevard					
East of South Main Street	56.7	56.9	56.9	0.0	0.2
West of South main Street	65.1	65.3	66.6	1.3	1.5
213th Street					
East of South Main Street	60.4	60.7	60.7	0.0	0.3
West of Avalon Boulevard	61.5	61.7	61.7	0.0	0.2
Carson Street					
East of South Main Street	66.9	67.4	67.8	0.4	0.9
West of Avalon Boulevard	66.3	66.7	67.1	0.4	0.8
East of Avalon Boulevard	66.4	66.7	67.1	0.4	0.7
Avalon Boulevard					
I-405 SB Ramps to 213th Street	67.1	67.7	68.5	0.8	1.4
213th Street to Carson Street	67.0	67.6	68.3	0.7	1.3

[a] *Exterior 24-hour CNEL noise levels.*
[b] *Increase relative to traffic noise levels comparing future (2010) Pre-Project conditions to future (2010) with development of the proposed Project.*
[c] *Increase relative to traffic noise levels comparing existing conditions to future (2010) with development of the proposed Project.*
[d] *Future intersection due to proposed Project development.*

Source: PCR Services Corporation, 2005.

within the Project site indicates, the proximity of the site to the I-405 freeway, results in noise levels of up to approximately 74 dBA CNEL (refer to Figure 38 on page 429 and Table 50 on page 430).

In addition, Table 57 on page 445 provides predicted CNEL contour distances for the Project in 2010 (i.e., Project buildout). As shown in this table, the 65 CNEL noise contour would be located approximately 123 to 182 feet from the edge of Del Amo Boulevard right-of-way; and 70 CNEL would occur at 57 feet from the edge of Del Amo Boulevard. As such, the roadway traffic would result in adverse impacts to the proposed residential uses located within 57 feet from the Del Amo Boulevard right-of-way. Impacts within this area would be potentially significant without the incorporation of mitigation measures. The dwelling units farther from the roadway would benefit from noise distance attenuation, as well as the shielding effect of the residences facing the roadway.

(ii) Stationary Point-Source Noise

This section considers potential noise impacts to neighboring noise-sensitive properties related to specific noise sources associated with the operation of the proposed Project. Such potential noise sources include:

- Mechanical equipment rooms (e.g., boiler, chiller, and emergency generator);
- Miscellaneous rooftop mechanical equipment;
- Loading dock and trash/recycling areas;
- Parking facility; and
- Certain of the on-site uses permitted under the proposed Carson Marketplace Specific Plan (e.g., outdoor theater).

A discussion of each of these noise sources is provided below, followed by a discussion of the potential composite noise level increase (due to multiple noise sources) at each sensitive receptor location.

Mechanical Equipment

Project development would include mechanical equipment, which could generate noise levels that are audible at both on- and off-site noise sensitive locations. Such equipment could include, but not be limited to, air conditioners, fans, blowers, compressors, and pumps that would be used to support the basic functioning of various structures and/or facilities that would be developed. However, most of this mechanical equipment would include noise control measures such as intake/exhaust silencers, acoustical linings, equipment enclosures, and parapet screens to ensure that the noise generated by mechanical equipment operations would meet City of Carson Municipal Code noise standards. As such, noise from stationary mechanical equipment

Table 57

Predicted CNEL Contour Distance—Buildout Year With Project

Roadway Segment	CNEL at 50 feet [a] (dBA)	Distance to 65 dBA CNEL Noise Contour (Feet)
Del Amo Boulevard		
East of Stamps Drive	68.9	123
Stamps Drive to South Main Street	70.6	182 [b]
South Main Street to Figueroa Street	70.5	177 [c]
South Main Street		
North of Del Amo Boulevard	66.1	64
Del Amo Boulevard to Lenardo Drive	66.2	66
Leonardo Drive to Torrance Boulevard	69.8	151
Torrance Boulevard to 213th Street	66.4	69
213th Street to Carson Street	66.5	71
Leonardo Drive		
East of South Main Street	61.3	[d]
Torrance Boulevard		
East of South Main Street	56.9	[d]
West of South main Street	66.6	72
213th Street		
East of South Main Street	60.7	[d]
West of Avalon Boulevard	61.7	[d]
Carson Street		
East of South Main Street	67.8	95
West of Avalon Boulevard	67.1	81
East of Avalon Boulevard	67.1	81
Avalon Boulevard		
I-405 SB Ramps to 213th Street	68.5	112
213th Street to Carson Street	68.3	107

[a] *Predicted CNEL for the buildout year (2010) with Project.*
[b] *Distance to 70 dBA CNEL contour is 62 feet.*
[c] *Distance to 70 dBA CNEL contour is 59 feet*
[d] *Noise level occurs within the roadway right-of-way.*

Source: PCR Services Corporation, 2005.

associated with the proposed Project would not exceed 50 dBA during daytime hours and 45 dBA during nighttime hours at the nearest sensitive receptors. Furthermore, as the existing ambient noise in the project area is above the typical noise level generated by these pieces of equipment, it is anticipated that the noise level increase, if any, would remain well below the 5 dBA L_{eq} (1-hour) significance threshold, or the 5-dBA CNEL significance threshold for conditionally acceptable noise environments. Therefore, impacts are anticipated to be less than significant and no mitigation measures are required.

Loading Dock and Refuse Collection/Recycling Areas

The various operations-related activities within the commercial center (e.g., loading, refuse collection, cardboard compaction, etc.) would occur at several different locations within the Project site. Based on standard design practices, these activities would occur mainly at the rear of the proposed on-site structures. All outdoor loading dock and trash/recycling areas would be fully or partially enclosed, or screened with portions of the building, architectural wing walls, and freestanding walls such that the line-of-sight between these noise sources and the noise sensitive land uses would be obstructed. By blocking the sound transmission path between the loading dock-area noise sources and nearby residential uses, noise levels would not exceed the 5-dBA hourly L_{eq} at 50 feet, or the 5-dBA CNEL significance threshold for conditionally acceptable noise environments at any off-site or on-site noise sensitive residential location. Therefore, Project impacts would be less than significant and no mitigation measures would be required.

Parking Facility Noise Levels

Various noise events would also occur within the on-site surface parking lots as well as any parking structures that may be constructed within the Project site. Within these parking facilities, the activation of car alarms, sounding of car horns, slamming of car doors, engine revs, and tire squeals would occur periodically. A summary of maximum noise levels related to typical parking facility noise events is provided in Table 58 on page 447. Automobile movements would comprise the most continuous noise source and would generate a noise level of approximately 65 dBA at a distance of 25 feet. Car alarm and horn noise events, which generate maximum noise levels as high as 69 dBA at a reference distance of 50 feet, would occur less frequently. As summarized in Table 13, a composite noise level of 60 dBA L_{eq} (1-hour) at a reference distance of 50 feet would be typical to a parking facility. The composite parking lot noise would be reduced to 54 dBA at the nearest sensitive receptors, including the on-site residential units and the residential uses across the Torrance Lateral Channel at the south and west side of the Project site. This would be well below the existing daytime average ambient noise level of 65.0 dBA and 68.3 dBA at these locations (see Table 50 on page 430). However, as proposed uses could include commercial uses with nighttime uses (e.g., nightclubs operating after midnight) and existing nighttime ambient noise levels are as low as 61.3 dBA and 54.5 dBA at these locations, parking facility noise levels could increase ambient nighttime noise levels by a maximum of 3 dBA. As this noise level increase would be less than the 5 dBA significance threshold, impacts from parking activities upon the noise-sensitive receptors near the Project site would be less than significant. Thus, no mitigation would be required.

Noise Intensive Land Uses

Some of the land uses that are permitted by the Carson Marketplace Specific Plan have noise characteristics that are potentially problematic (i.e., outdoor theater, passenger station (bus

Table 58

Typical Maximum Noise Level from Individual Surface Parking Lot Noise Events

Source	Reference Sound Level at 25 feet [a] (dBA)	Maximum Sound Level at 50 Feet [b] (dBA)	Frequency of Occurrence (%)	1-Hour L_{eq} Noise Level at 50 Feet (dBA)
Automobile at 14 mph	65	59	50.0	56
Car Alarm	75	69	1.0	49
Car Horn	75	69	0.5	46
Door Slam	70	64	5.0	51
Tire Squeal	76	70	10.0	56
Composite L_{eq} (1-hour)				**60**

[a] *Reference noise levels are based on actual measurement data.*
[b] *Since parking structure-related noise is more akin to a point-source, rather than a line-source, the 6-dBA per doubling of distance attenuation factor was used to distance-adjust all reference noise levels.*

Source: PCR Services Corporation, 2005.

station, rail station, taxi stand), or small recycling facility). If these land uses are developed as part of the proposed Project, while these uses would be required to meet the City's Noise Ordinance standards, there is a potential that they may result in a significant noise impact if the uses were to be located in proximity of the proposed residences or off-site residences to the south and west.

(iii) Composite Noise Level Impacts from Proposed Project Operations

An evaluation of noise from all proposed Project sources (i.e., composite noise level) was conducted to conservatively ascertain the potential maximum Project-related noise level increase that may occur at the noise-sensitive receptor locations included in this analysis. Based on a review of the noise-sensitive receptors and the Project's noise sources, noise sources considered in the analysis of composite noise include roadway traffic volumes, parking-related noise events, mechanical equipment, and loading dock/refuse collection area noise events.

The potential composite noise level impact at each sensitive receptor location was evaluated by conservatively assuming that the Project site operations would generate a steady-state equivalent noise level of 70 dBA at a 50-foot reference distance. This 70-dBA composite noise level (based on 1-hour L_{eq}), would account for each of the individual noise sources (i.e., mechanical equipment, loading dock/refuse collection areas, parking facility, etc.) present on the Project site.

Table 59 on page 448 provides a summary of potential impacts that may occur at each of the sensitive receptor locations. As shown in Table 59, maximum L_{eq} daytime noise level

Table 59

Operations Noise Impact Summary

Receptor Number and Land Use [a]	Measured Baseline Ambient Noise (dBA) [b] Day/Night [d]	Closest Distance to Construction Site (feet)	Composite Operational Noise at Receptor (dBA) [c]	With Project Noise Level (dBA) Day/Night [d]	Increase Over Baseline (dBA) Day/Night [d]
1. Residential Uses to the South	68.3/61.3	175	59.1	68.7/63.3	0.4/2.0
2. Residential Uses to the West	65.0/54.4	150	60.5	66.3/61.5	1.2/7.0

[a] *Receptors are shown in Figure 38 on page 429.*
[b] *Based on the measures data shown in Table 50 on page 430 .*
[c] *Based on 70 dBA Project site operational noise level over a one-hour period.*
[d] *Daytime hours are from 7:00 A.M. to 10 P.M. and nighttime hours are from 10 P.M. to 7 A.M.*

Source: PCR Services Corporation, 2005.

increases with proposed Project operations are forecasted to range from 59.1 dBA to 60.5 dBA L_{eq} (1-hour). These noise level estimates take into account distance attenuation only. As shown in Table 59, operations-period composite noise level impacts would not exceed the 5-dBA significance criterion during daytime hours at any sensitive receptor locations However, noise levels could exceed the nighttime ambient noise level by as much as 7 dBA, and as such, combined nighttime noise levels would be significant without incorporation of mitigation measures.

(b) Ground-Borne Vibration

Future ground-borne vibration in the Project vicinity of the Project site would continue to be generated by vehicular travel on the local roadways. As Project operations would not result in any additional long-term ground-borne vibration sources, operation of the proposed Project upon completion of its construction would not exceed the 0.01 RMS significance threshold for ground-borne vibration at the neighboring sensitive receptors. As such, impacts would be less than significant and no mitigation measures are required.

4. MITIGATION MEASURES

a. Construction

(1) Noise

As noise associated with on-site construction activity would have the potential to result in a significant impact, the following measure is prescribed to minimize construction-related noise impacts:

Mitigation Measure H-1: Prior to the issuance of any grading, excavation, haul route, foundation, or building permits, the Applicant shall provide proof satisfactory to the Building and Safety and Planning Divisions of the Development Services Department that all construction documents require contractors to comply with City of Carson Municipal Code Sections 4101 (i) and (j), which requires all construction and demolition activities including pile driving, to occur between 7:00 A.M. and 8:00 P.M. Monday through Saturday and that a noise management plan for compliance and verification has been prepared by a monitor retained by the Applicant. At a minimum, the plan shall include the following requirements:

1. Noise-generating equipment operated at the Project site shall be equipped with effective noise control devices (i.e., mufflers, intake silencers, lagging, and/or engine enclosures). All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

2. Pile drivers used within 1,500 feet of sensitive receptors shall be equipped with noise control techniques (e.g., use of noise attenuation shields or shrouds) having a minimum quieting factor of 10 dBA.

3. Effective temporary sound barriers shall be used and relocated, as needed, whenever construction activities occur within 150 feet of residential property, to block line-of-site between the construction equipment and the noise-sensitive receptors (i.e., residential uses located on the west and south of the Project site).

4. Loading and staging areas must be located on site and away from the most noise-sensitive uses surrounding the site as determined by the Building and Safety Division of the Development Services Department.

5. An approved haul route authorization that avoids noise-sensitive land uses to the maximum extent feasible.

6. A construction relations officer shall be designated to serve as a liaison with residents, and a contact telephone number shall be provided to residents.

(2) Vibration

To mitigate the potential significant impact of construction vibration during the site compaction (DDC) activities:

Mitigation Measure H-2: The Applicant, prior to initiating DDC activities on a site-wide basis, shall conduct a DDC Pilot Program (Pilot Program). The Pilot Program shall be implemented via the following guidelines:

- Prior to the initiation of the Pilot Program, the Applicant shall locate vibration monitors at the following locations: (1) along the Project's fenceline opposite the off-site residential uses located to the south and southwest of the Project site (i.e., within the Project site), and (2) along the far side of the Torrance Lateral Channel in line with the monitors placed within the Project site itself.

- Continuous monitoring shall be conducted on an ongoing basis during the Pilot Program. All vibration levels measured by the monitors shall be logged with documentation of the measurements provided to the City.

- Initial DDC drops shall be limited in weight, height and/or location dictated by calculations which demonstrate that the potential vibration levels are below the 0.02 inches per second PPV threshold limit.

- Increases in DDC weight, height and/or location shall incur in small increments, with continuous monitoring to assure compliance with the 0.02 inches per second PPV threshold limit.

- If vibration levels at any time during the Pilot Program exceed the 0.02 inches per second PPV threshold level, DDC activity shall immediately stop, until new drop parameters are established that would reduce the vibration levels to less than the 0.02 inches per second PPV threshold level.

Mitigation Measure H-3: The monitors located on the far side of the Torrance Lateral Channel as part of the Pilot Program shall remain in place throughout the DDC phase of Project construction. Continuous monitoring shall be conducted on an ongoing basis. All vibration levels measured by the monitors shall be logged with documentation of the measurements provided to the City. If DDC vibration levels at any time exceed the 0.02 inches per second PPV threshold level, DDC activity shall immediately stop, until new drop

parameters are established that would reduce the vibration levels to less than the 0.02 inches per second PPV threshold level.

(3) Construction Management

Mitigation Measure H-4: A construction and construction-related monitor satisfactory to the Development Services General Manager shall be retained by the Applicant to document compliance with the mitigation measures. Said Monitor's qualifications, identification, address and telephone number shall be listed in the contracts and shall be placed in the pertinent files of the Development Services Department. The Monitor will be required to monitor all construction and construction-related activities on the site on a periodic basis; keep all written records which shall be open for public inspection; and to file monthly reports with City and appropriate permit granting authorities. In addition:

1. Information shall be provided on a regular basis regarding construction activities and their duration. A Construction Relations Officer shall be established and funded by the Applicant, and approved by the Development Services General Manager, to act as a liaison with neighbors and residents concerning on-site construction activity. As part of this mitigation measure, the Applicant shall establish a 24-hour telephone construction hotline which will be staffed between the hours of 8:00 A.M. and 5:00 P.M. on a daily basis throughout the Project's entire construction period for the purposes of answering questions and resolving disputes with adjacent property owners. The hotline number shall be posted on site.

2. The Applicant shall require in all construction and construction-related contracts and subcontracts, provisions requiring compliance with special environmental conditions included in all relevant entitlement approval actions of the City of Carson. Such provisions shall also include retention of the power to effect prompt corrective action by the applicant, its representative or prime contractor, subcontractor or operator to correct noticed noncompliance.

3. During construction loading and staging areas must be located on-site and away from the most noise-sensitive uses surrounding the site as determined by the Planning Manager.

b. Operation

(1) Noise

Mitigation Measure H-5: All parking lots near residential areas shall be located a minimum of 150 feet from an off-site residential use unless a minimum eight foot wall is provided along the property boundary to limit noise levels associated with parking lot activities.

Mitigation Measure H-6: All parking structures near residential areas shall be located a minimum of 150 feet from an off-site residential use unless the exterior wall of the parking structure that faces the off-site residential use is a solid wall or provides acoustical louvers (or equivalent noise reduction measures).

Mitigation Measure H-7: During operation of a building (following construction), truck delivery should be limited to non-peak traffic periods between 7:00 A.M. and 8:00 P.M., if feasible.

Mitigation Measure H-8: For the residential uses immediately south and north of Del Amo Boulevard, within Development Districts 1 and 3, all exterior walls and floor-ceiling assemblies (unless within a unit) shall be constructed with double-paned glass or an equivalent and in a manner to provide an airborne sound insulation system achieving a Sound Transmission Class of 50 (45 if field tested) as defined in the UBC Standard No. 35-1, 1982 edition. Sign-off by the Development Services General Manager, or his/her designee, is required prior to the issuance of the first building permit. The Applicant, as an alternative, may retain an engineer registered in the State of California with expertise in acoustical engineering, who would submit a signed report for an alternative means of sound insulation satisfactory to the City of Carson which achieves a maximum interior noise of CNEL 45 (residential standard). In addition:

Mitigation Measure H-9: The balconies of the first row of residential units facing Del Amo Boulevard or I-405 Freeway, should any such balconies be constructed, shall have a solid fence/wall with an appropriate height to reduce the noise received from traffic traveled on the adjacent Boulevard.

Mitigation Measure H-10: If any noise intensive uses (i.e., outdoor theater, passenger station (bus station, rail station, taxi stand), small recycling facility, or commercial uses (outdoor activities, amplified music, outdoor patios, etc)) are proposed within 300 feet of an on-site or off-site residential use, then as part of the site plan review process, a community noise study shall be completed and the study shall demonstrate that the use would not exceed the City of Carson Municipal Code noise standards and/or the standards established in this EIR.

5. CUMULATIVE IMPACTS

All of the identified related projects have been considered for the purposes of assessing cumulative noise impacts. The potential for noise impacts to occur are specific to the location of each related project as well as the cumulative traffic on the surrounding roadway network.

a. Construction Noise

Of the 36 related projects that have been identified within the proposed Project study area, there are a number of projects that have not already been built or are currently under construction. Since the Applicant has no control over the timing or sequencing of the related projects, and as such, any quantitative analysis that assumes multiple, concurrent construction projects would be entirely speculative. Noise impact of construction activities for the proposed Project and each related project (that has not already been built) would be short-term, limited to the duration of construction and would be localized. In addition, it is anticipated that each of the related projects would have to comply with the local noise ordinance, as well as mitigation measures that may be prescribed pursuant to CEQA provisions that require significant impacts to be reduced to the extent feasible. However, since noise impacts due to construction of the proposed Project would be significant on its own, noise impacts due to construction of the proposed Project in combination with any of the related projects would also be significant without mitigation.

b. Long-Term Operations

Each of the 36 related projects that have been identified within the general Project vicinity would generate stationary-source and mobile-source noise due to ongoing day-to-day operations. The related projects are of a residential, retail, commercial, office buildings, or institutional nature and these uses are not typically associated with excessive exterior noise generation. However, each project would produce traffic volumes that are capable of generating a roadway noise impact. As discussed previously, traffic volumes from the proposed Project and the 36 related projects, combined with ambient traffic growth, were analyzed and shown in Table 56 on page 443. Cumulative traffic volumes would result in a maximum increase of 4.5 dBA CNEL along Del Amo Boulevard, between South Main Street and Figueroa Street. As this noise level increase would be below the 5 dBA CNEL significance threshold for "normally acceptable" land uses, roadway noise impacts due to cumulative traffic volumes would be less than significant along segments of Del Amo Boulevard. Furthermore, impacts from Project-related traffic noise along all other local roadway segments with sensitive receptors would be lower than the significance threshold of 3 dBA CNEL for sensitive receptors exposed to or within "normally unacceptable" or "clearly unacceptable" categories and, thus, less than significant.

Due to Carson Municipal Code provisions that limit noise from stationary sources such as roof-top mechanical equipment and emergency generators, noise levels would be less than significant at the property line for each related project. For this reason on-site noise produced by any related project would not be additive to Project-related noise levels. As such, stationary-source noise impacts attributable to cumulative development would be less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Construction

The mitigation measures recommended in this section would reduce the noise levels associated with construction activities to some extent. However, these activities would continue to increase the daytime noise levels at nearby noise-sensitive uses by more than the 5-dBA significance threshold. As such, noise impacts during construction would be considered significant and unavoidable. Furthermore, noise impacts during pile driving are concluded to be significant due to the frequency with which this impact is going to occur and the circumstance in which this impact cannot be mitigated given the construction techniques that are required for the Project site. Vibration impacts associated with DDC operations during Project construction are concluded to be less than significant with the implementation of Mitigation Measures H-2 and H-3.

b. Operations

With implementation of Mitigation Measures H-7 through H-10 described above, operational noise impacts to the off-site existing residential uses located to the south and west of the Project site, as well as on-site residential developments, would be reduced to less than significant levels. In addition, the Project site would provide some noise-attenuation/shielding characteristics from I-405 traffic noise to the area, particularly for residential uses located south and west of the Project site.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
1. FIRE PROTECTION

1. INTRODUCTION

This section analyzes the proposed Project's impacts relative to the fire services and emergency medical services provided by the Consolidated Fire Protection District of Los Angeles County (LACoFD). The Project area is located within the jurisdiction of the County Fire Department, and information contained herein is based on direct consultation with the agency as well as review of the City of Carson General Plan and Municipal Code. The analysis evaluates the impact of the Project relative to existing and projected LACoFD fire protection services and facilities. Also described in this section are the applicable requirements for fire flow, fire and life safety, and emergency access.

2. EXISTING CONDITIONS

a. Regulatory Framework

(1) California Building Code (CBC)

The California Code of Regulations (CCR) Title 24 (California Building Code [CBC]) is a compilation of building standards, including fire safety standards for structures. CBC standards are based on building standards that have been adopted by state agencies with changes to address particular California conditions. Typical fire safety requirements of the CBC include the establishment of fire resistance standards for fire doors, building materials, and particular types of construction, and the clearance of debris and vegetation within a prescribed distance from occupied structures. The CBC applies to all occupancies in California, except where stricter standards have been adopted by local agencies.

(2) Standardized Emergency Management System (SEMS)

After the 1991 Oakland fire, the State of California passed Senate Bill 1841 to establish the Standardized Emergency Management System (SEMS), CCR Title 19, which sets forth procedures for managing response to multi-agency and multi-jurisdictional emergencies in California. The legislation mandated that by December 1, 1996, each local jurisdiction, in order to be eligible for any funding of response-related costs under disaster assistance programs, shall

implement the Standardized Emergency Management System and prepare an up-to-date emergency management plan (which includes an emergency evacuation plan).

The County has prepared the Multi-Hazard Functional Plan, which serves as the emergency management plan for the entire County. The plan, revised on February 17, 1998, sets forth procedures and measures for coordination with County agencies in the event of a disaster.

The City of Carson has also prepared a Multi-Hazard Functional Plan for emergency response within the City which complies with State law and the Los Angeles County Emergency Management Plan. As discussed in the Safety Element of the General Plan, the Carson Multi-Hazard Functional Plan identifies areas of potential danger in the City as well as areas for meeting and staging in an emergency event, communications, and emergency evacuation. Emergency shelters, meeting, and staging locations include the City's parks and other large open areas. An Emergency Operation Center (EOC), fully equipped with emergency communication equipment and cooking, showering and sleeping facilities is located within Carson City Hall in the event of a major seismic event or other similar hazard. Additionally, an amateur radio operating system has been implemented Citywide to maintain communications should other systems fail.

The Plan has also identified State Route 91, and Interstates 405, 110, and 710 as potential emergency evacuation routes. Additional routes include arterial streets with right-of-way widths from 80 to 100 feet that form a grid pattern throughout the City at one-half mile intervals. Potential east-west arterial street evacuation routes in the Project area include Lomita Boulevard, Sepulveda Boulevard, 223rd Street, Carson Street, Del Amo Boulevard, Victoria Street, Artesia Boulevard, and Alondra Boulevard. North-south arterial streets in the Project area that could be utilized as evacuation routes include Santa Fe Avenue, Alameda Street, Wilmington Avenue, Avalon Boulevard, Main Street, Figueroa Street and Broadway.

(3) City of Carson General Plan Safety Element

The Safety Element of the City's General Plan specifically addresses the issue of urban fires and establishes policies to minimize the public hazard from fire emergencies. To support this goal, the following policies have been set forth:

- Coordinate with the Fire Department to provide fire and paramedic service at standard levels of service;

- Continue to involve the Fire Department in reviewing and making recommendations on projects during the environmental, site planning and building plan review processes;

- Continue to work with the Fire Department to ensure their capability to address fires and other emergencies at refineries, tank farms, and other heavy industrial facilities within the City;

- Work with the City's Public Information Office and LACoFD to promote and expand public education programs and seminars on safety and emergency response for those areas surrounding refineries, tank farms, and other heavy industrial facilities;

- Continue to enforce current regulations which relate to safety from fire, particularly in critical and high occupancy facilities; and

- Work with the City's Public Information Office and the Fire Department to continue to promote and enhance public outreach programs which educate the community about the importance of fire resistant building materials, promote the use of smoke alarms/detectors, and highlight other ways to reduce the public hazard from fire emergencies.

(4) City of Carson Municipal Code

The City of Carson has adopted the Los Angeles County Fire Code (Title 32) as the Fire Prevention Code for the City of Carson. The City has also adopted the Los Angeles County Building Code (Title 26) as the Building Code for the City of Carson. The Los Angeles County Fire Code and the County Building Code establish requirements and regulations for the design, construction, and provision of fire protection facilities and equipment related to new development within the LACoFD's jurisdiction.

b. Existing Conditions

The LACoFD provides fire protection services to over 3.9 million residents throughout the unincorporated areas of the County and 57 District cities. The LACoFD is divided into three Regional Operations Bureaus: North, Central, and East. The Operations Bureaus are subdivided into 9 geographical divisions consisting of 20 battalions, 159 fire stations, and 163 engine companies. Currently, the LACoFD has a staff of approximately 4,355 persons, including 567 firefighters and 603 firefighter paramedics.[120] The LACoFD service area covers 2,297 square miles and approximately 1,163,467 households. In addition to fire protection services, the LACoFD also provides special operations services including fire prevention, hazardous materials, emergency medical services, lifeguards, forestry, urban search and rescue, and terrorism response.

[120] *2004 Statistical Summary, Los Angeles County Fire Department.*

The Project site is located within Division I of the Central Region in the Battalion 7 service area. There are six primary fire stations that provide both fire and emergency medical service to the City of Carson, with four of the stations located within City boundaries. In addition to these fire stations, there is a Fire Prevention Office located at Carson City Hall. Each of the primary fire stations has established an expanded response matrix for its individual jurisdiction, which increases the resources available to help a fire station respond to an emergency. These include additional engine companies, truck companies, paramedic units and hospitals. As 9-1-1 emergency calls are processed, a computer dispatching system selects from this matrix to provide the closest available unit that can meet the emergency need.[121] Two paramedic units are located within the City and provide service to Carson. Auxiliary paramedic definitive care is provided by units located nearby in Lomita, Lawndale, Hawthorne, Lakewood, Paramount and Rolling Hills. In addition, the LACoFD has three helicopters which have the ability to provide air ambulance and paramedic service to the area. American Medical Response, with units based at East 223rd Street and Lucerne Avenue, provides ambulance service for the City of Carson.

The General Plan Safety Element identifies the average emergency response times in the City of Carson. As shown in Table 60 on page 459, during the period in which the EIR for the City of Carson General Plan was prepared, approximately 1,047 medical emergency responses occurred throughout the city, with an average response time of 4.7 minutes. Approximately 81 fire incidents occurred throughout the City, with an average response time of 5.0 minutes. As shown in Table 61 on page 459, the average response time for Fire Station No. 36 is less than the Citywide average response time, while the average response time for Fire Station No. 116 is greater than the Citywide average.

The nearest response unit to the Project Site is Fire Station No. 36, located at 127 West 223rd Street, approximately 1.5 miles south of Project site's nearest ingress point at Lenardo Drive and Main Street. Other response units in the Project area include Station No. 10 at 1860 East Del Amo Boulevard and Station No. 116 at 755 Victoria Street. The latter two stations are located approximately 2.4 miles from the Project site. In addition to existing stations, the LACoFD "Five-year Fire Station Plan" identifies a proposed station near the I-405/110 Freeway interchange. A future LACoFD fire station in the proximity of the I-405/110 Freeway would be located north of the Project site and particularly accessible to the Project's site primary entrances. Table 61 contains a list of the equipment, distance, response times, and staffing for the above-listed response units. However, since staffing at any single fire station remains constant, a major incident, such as a structure fire, would require auxiliary service from multiple response units not identified in this section.

[121] *Safety Element of the City of Carson General Plan (October 11, 2004).*

Table 60

LACoFD Average Response Times, City of Carson

Emergency	Incidents	Average Response Time
Emergency Medical Services	1,047	4.7 minutes
Fire	81	5.0 minutes
Hazardous Materials	78	5.0 minutes
Other	377	5.4 minutes
Total	1,583	4.9 minutes

Source: City of Carson General Plan Safety Element, October 11, 2004.

Table 61

LACoFD Fire Equipment and Response Times

Equipment	Distance [a]	Time [a]	Staffing
Engines 36 and 236	2.1 miles	4.3 minutes	8
Squad 36	2.1 miles	4.3 minutes	2
Engine 10	2.4 miles	4.8 minutes	4
Engine 116	2.4 miles	5.8 minutes	3
Squad 116	2.4 miles	5.8 minutes	2
Truck 116	2.4 miles	5.8 minutes	4

[a] *To the middle of the Project site via interior driveways.*

Source: Letter sent to Ron Winkler, Economic Development Department General Manager, City of Carson from Chief Leininger, Forestry Division, Los Angeles County Fire Department, dated August 2, 2005

3. PROJECT IMPACTS

a. Methodology

The impact of a project on fire services is partially determined by a project's compliance with the access and fire flow requirements of the Fire Code. In order to determine the impact of a project relative to the access, fire flow, and hydrant requirements of the Fire Code, the compliance of the project with these requirements is evaluated. The distance of the Project to the nearest fire station and the capability of existing facilities to serve the Project site is also evaluated. Finally, any physical constraints that preclude the attainment of the access and fire flow requirements of the Fire Code are also evaluated.

b. Significance Thresholds

For the purpose of this analysis, impacts with regard to fire services are considered significant if the Project would:

- Generate a demand for additional fire protection service that exceeds the staff and equipment capabilities of the station (s) to serve the Project site;
- Require the addition of new fire facilities or the expansion, consolidation, or relocation of an existing station to maintain service; or
- Not comply with all applicable code and ordinance requirements for construction, fire safety facilities, fire flow, fire hydrants, and access.

c. Project Impacts

(1) Project Design Features

The Project would be developed with a combination of commercial and residential buildings. Residential buildings would be limited to 75 feet in height. The largest portion of the commercial buildings would be limited to 32 feet in height, with incremental increases in height to 52 feet at limited locations. The theater and hotel could have base heights up to 60 feet and 75 feet, respectively. The Project site would be accessible to fire services along its Main Street and Del Amo Boulevard frontages. The Project would feature 10-foot setbacks from Main Street and Del Amo Boulevard, north of Del Amo Boulevard, and 20-foot setbacks along Main Street and Del Amo Boulevard, south of Del Amo Boulevard.

South of Del Amo Boulevard within Districts 1 and 2, Stamps Drive and Lenardo Drive would form the Project's interior street network. Primary access to the interior street network would be via the intersections of Stamps Drive and Del Amo Boulevard and the intersection of Lenardo Drive and Main Street, which are located in the northern portion of the Project site. The Project site would also be accessible from the I-405 Freeway/Avalon Boulevard interchange and Avalon Boulevard, via Lenardo Drive at the south end of the Project site. Due to the intervening Torrance Channel, no access from Main Street at the south end of the Project site would be available.

Primary access into the Project site north of Del Amo Boulevard would be via a driveway on Del Amo Boulevard and via the Del Amo Boulevard and Stamps Drive intersection. No access to Main Street would be provided

The proposed Project would comply with all applicable standards and regulations with regard to fire prevention and protection including access, fire flow, and location of fire hydrants. General development requirements would include adequate ingress and egress points; compliance with ordinances pertaining to fire safety during the Project's construction phase; compliance with LACoFD requirements pertinent to street widths, roadway surfacing, and accessibility of fire apparatus to proposed structures. Access, fire flows requirements, and hydrant placement would meet fire code standards and would be addressed during the Project's tract map approval. Site-specific fire and life safety requirements for multiple family dwellings and commercial uses, including the installation of fire suppression equipment including an automatic fire suppression system, fire alarm system, and evacuation life safety system; the use of specified building materials, and the design of structures according to fire safety standards, would be incorporated into the Project and addressed during LACoFD review of detailed building plans.

The proposed Project would fund its fair share for new fire service facilities. In addition, with the occupancy of the proposed development, the Project would generate annually recurring revenue to the Los Angeles County General Fund in the form of taxes and other miscellaneous charges (e.g., sales tax, property tax, etc.) and, to a lesser extent, via revenues generated by a direct property tax assessment. A portion of General Fund revenue may be used at the County's discretion to address costs associated with demand for LACoFD operations and staffing. The allocation of such revenue to a specific municipal service is determined through the County's budgeting process by the County Board of Supervisors.

(2) Project Impacts

(a) Construction

During the Project's construction phase, construction activities would temporarily increase the demand on fire services. Traffic associated with construction activities would potentially affect fire access on the Project site and adjacent streets. The effect of construction activities and traffic relative to emergency access is evaluated in Section IV.C, Traffic and Circulation. As described therein, the Project would provide a Worksite Traffic Control Plan (WTCP) to the City and appropriate police and fire service prior to the start of any construction work phase. The WTCP would include the scheduling and location of any roadway closures, traffic detours, haul routes, protective devices, and warning signs, for the purpose of minimizing impediments or interference with emergency vehicles.

Construction activities would also increase demand for LACoFD services. Construction activities may cause the occasional exposure of combustible materials, such as wood, plastics, sawdust, coverings and coatings, to heat sources. Heat or fire sources may include machinery and equipment sparking, exposed electrical lines, welding activities, chemical reactions in

combustible materials and coatings, and lighted cigarettes. The Project would comply with OSHA and Fire and Building Codes regarding site safety. In addition, the existing chain-link fence on the perimeter of the Project site would remain in place throughout construction reducing the potential for hazards associated with trespassing and vandalism. With the implementation of code-required safety features during Project construction, any additional demand on fire services would not exceed the current capabilities of the LACoFD, and impacts during Project construction would be less than significant.

(b) Operation

The occupancy of the Project would increase the demand for LACoFD staffing, equipment, and facilities. The residential component of the proposed Project would include 1,550 residential units that would conservatively generate approximately 6,969 new residents. In addition the Project's commercial component would include restaurants, theaters, and a hotel, which would increase demand for fire services, including occupancy inspections and emergency calls.

Fire Station No. 36 is the current closest station to the Project site and therefore, is likely to provide first response for emergency incidents. Emergency access to the Project's residential uses would be provided primarily via Main Street and Del Amo Boulevard, since these uses are located in the Project's northerly sector. From Fire Station No. 36, the Project's internal streets south of Del Amo Boulevard, would be accessed via Main Street. North of Del Amo Boulevard, internal streets would be accessed via the Del Amo Boulevard and Stamps Drive intersection and a secondary driveway on the north side of Del Amo Boulevard. All project roadways would be constructed to meet all Fire and Building Code requirements (i.e., minimum street width, turning radii, slope, etc.) of the LACoFD.

Emergency access to the Project's commercial components would be via all of the Project's access points, including, but not limited to, Lenardo Drive, via Avalon Boulevard. Although commercial uses are located throughout the Project site, including north of Del Amo Boulevard, commercial uses dominate the southerly sector of the Project site. Since these uses do not have direct access to Main Street, they must be accessed by Fire Station No. 36 near the northerly portion of the Project site. The south and westerly boundaries of much of the commercial zone are bounded by the Torrance Lateral channel and are not immediately accessible to Main Street, the primary access route for Station No. 36. As such, the Station 36 response times, shown in Table 61, are not necessarily indicative of Project-specific response times since these times would be dependent on the location of the emergency incident within the Project site and fire apparatus accessibility to that location. According to the LACoFD, the

Project's access plan would not facilitate optimum response to all areas of the Project site, since Fire Station 36 is located to the south of the Project Site.[122]

As stated by the LACoFD, "additional manpower, equipment, and facilities will be needed to serve the development." According to the LACoFD letter, limited tax revenues have restricted the Fire Department's ability to meet new growth needs. The LACoFD states: "Although general plans for upgrading fire protection in this area have been developed, the Fire Department will not be able to implement these plans without specific provisions for the necessary man power, equipment, and facilities." The LACoFD also requests mitigation of "this problem" (the upgrading of facilities) prior to Project approval.[123] Since the Project would generate additional demand that exceeds the staff and equipment capabilities of the LACoFD, the impact of the Project relative to fire services is concluded to be significant.

The Project would pay a fair share contribution for new fire facilities and, with the occupancy of the proposed development, the Project would generate annually recurring revenue to the Los Angeles County General Fund in the form of taxes and other miscellaneous charges (e.g., sales tax, property tax, etc.). A portion of such revenue, including direct assessments that are received by the LACoFD, would be used to address costs associated with demand for LACoFD operations and staffing.

The Project would also comply with the applicable requirements of the County Fire and Building Codes regarding site access, fire hydrant spacing, water-storage, building materials, construction standards, and fire flow. It is forecasted that the Project's proposed water system would deliver a fire flow of up to 5,000 gpm at 20 pounds per square inch (psi) for the required duration, in compliance with LACoFD requirements. The Project would also be equipped with design features and fire suppression equipment including an automatic sprinkler system, fire alarm system, and evacuation life safety system. These systems would slow the spread of fire and would reduce demand for LACoFD services. In addition, development plans would be reviewed by the LACoFD prior to the issuance of building permits to ensure that the Project would be in compliance with all applicable fire codes and regulations. With the implementation of the Project's design features, including provision of fire alarm, suppression, and response systems; the payment of fair share fees; and the ongoing payment of property tax direct assessments for fire services during operation, Project impacts relative to LACoFD system capacity are concluded to be less than significant.

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[122] *Letter sent to Ron Winkler, Economic Development Department General Manager, City of Carson from Chief Leininger, Forestry Division, Prevention Services Bureau, County Fire Department , dated August 2, 2005*

[123] *Ibid.*

4. MITIGATION MEASURES

The Project's potentially significant demand on existing fire service facilities would be reduced to a less than significant level through the implementation of all applicable fire code regulations and mandatory fee payments. To ensure that all applicable fire code regulations, mandatory fee payments and recommended fire safety measures are incorporated into the Project, the following mitigation measures are recommended:

Mitigation Measure I.1-1: Prior to construction, the Applicant shall submit buildings plans to the Los Angeles County Fire Department (LACoFD) for review. Based on such plan check, any additional fire safety recommendations shall be implemented to the satisfaction of the LACoFD.

Mitigation Measure I.1-2: The Applicant shall provide adequate ingress/egress access points for emergency response to the satisfaction of the LACoFD.

Mitigation Measure I.1-3: The Applicant shall comply with all applicable fire code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants as required by the LACoFD.

Mitigation Measure I.1-4: Every building shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than the width prescribed by the LACoFD. The roadway shall extend to within 150 feet of all portions of exterior building walls when measured by an unobstructed route around the exterior of the building.

Mitigation Measure I.1-5: Requirements for access, fire flows, and hydrants, shall be addressed during the City's subdivision tentative map stage.

Mitigation Measure I.1-6: Fire sprinkler systems shall be installed in all residential and commercial occupancies to the satisfaction of the LACoFD.

Mitigation Measure I.1-7: The Applicant shall assure that adequate water pressure is available to meet Code-required fire flow. Based on the size of the buildings, proximity of other structures, and construction type, a maximum fire flow up to 5,000 gallons per minute (gpm) at 20 pounds per square inch (psi) residual pressure for up to a four-hour duration may be required.

Mitigation Measure I.1-8: Fire hydrant spacing shall be 300 feet and shall meet the following requirements:

- No portion of a lot's frontage shall be more than 200 feet via vehicular access from a properly spaced fire hydrant;
- No portion of a building shall exceed 400 feet via vehicular access from a properly spaced fire hydrant;
- Additional hydrants shall be required if spacing exceeds specified distances;
- When a cul-de-sac depth exceeds 200 feet on a commercial street, hydrants shall be required at the corner and mid-block;
- A cul-de-sac shall not be more than 500 feet in length, when serving land zoned for commercial use; and
- Turning radii in a commercial zone shall not be less than 32 feet. The measurement shall be determined at the centerline of the road. A turning area shall be provided for all driveways exceeding 150 feet in length at the end of all cul-ce-sacs, to the satisfaction of the LACoFD.

Mitigation Measure I.1-9: All onsite driveways and roadways shall provide a minimum unobstructed (clear-to-sky) width of 28 feet. The onsite driveways shall be within 150 feet of all portions of the exterior walls of the first story of any building. The centerline of the access driveway shall be located parallel to, and within 30 feet of an exterior wall on one side of the proposed structure.

Mitigation Measure I.1-10: All onsite driveways shall provide a minimum unobstructed, clear-to-sky width of 28 feet. Driveway width shall be increased under the following conditions:

- If parallel parking is allowed on one side of the access roadway/driveway, the roadway width shall be 34 feet; and
- If parallel parking is allowed on both sides of the access roadway/driveway, the roadway width shall be 36 feet in a residential area or 42 feet in a commercial area.

Mitigation Measure I.1-11: The entrance to any street or driveway with parking restrictions shall be posted with LACoFD approved signs stating "NO PARKING – FIRE LANE" in 3-inch-high letters, at intermittent distances of 150 feet. Any access way that is less than 34 feet in width shall be labeled "Fire Lane" on the final tract map and final building plans.

Mitigation Measure I.1-12: The following standards apply to the Project's residential component only;

- A cul-de-sac shall be a minimum of 34 feet in width and shall not be more than 700 feet in length;

- The length of the cul-de-sac may be increased to 1,000 feet if a minimum 36-foot-wide roadway is provided; and
- A LACoFD approved turning radius shall be provided at the terminus of all residential cul-de-sacs.

Mitigation Measure I.1-13: The Applicant shall pay a fair share contribution for the improvement of fire service facilities that are required to off-set impacts of the Project, subject to approval of the County of Los Angles Fire Department.

5. CUMULATIVE PROJECT IMPACTS

Development associated with growth within the service boundaries of the LACoFD, including the Project and the related projects described in Section III of this Draft EIR, would combine to generate a demand for additional fire protection services. As with the Project, most of the related projects would be subject to discretionary review, including an evaluation of the adequacy of fire services and the need for mitigation measures. Should those projects cause substantial increases in the need for new facilities, mitigation measures could be required as was the case for the proposed Project.

In addition, the Project and the related Projects would generate annually recurring revenue to Los Angeles County in the form of taxes and other miscellaneous charges. A portion of such revenue may be used at the County's discretion to address costs associated with the increased demand for LACoFD operations and staffing.

As the proposed Project would mitigate its impacts, it would not contribute to a cumulative impact. However, since all related projects may not be required to support the development of new facilities, it is conservatively concluded that the impacts at the identified related projects on fire services would be significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Project's potentially significant demand on existing fire service facilities would be reduced to a less than significant level through the implementation of all applicable fire code regulations and fair share fee payments, as reiterated in Mitigation Measures I.1-1 through I.1-13. Thus, no significant, unavoidable, impacts relative to fire services would occur.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
2. POLICE

1. INTRODUCTION

This section addresses impacts on police services that would arise with implementation of the proposed Project. The Project site is located within the jurisdiction of the Los Angeles County Sheriff's Department (Sheriff's Department). The analysis of police services is based on the Sheriff's Department ability to provide police services and facilities that would serve the Project site. Addressed in this section are impacts related to Project construction and operation. Operational impacts are analyzed in terms of levels of service, security and Project design, as well as, emergency access.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) Standardized Emergency Management System (SEMS)

After the 1991 Oakland fire, the State of California passed Senate Bill 1841 to establish the Standardized Emergency Management System (SEMS), which sets forth procedures for managing response to multi-agency and multi-jurisdictional emergencies in California. The legislation mandated that by December 1, 1996, each local jurisdiction, in order to be eligible for any funding of response-related costs under disaster assistance programs, shall implement the Standardized Emergency Management System and prepare an up-to-date emergency management plan (which includes an emergency evacuation plan).

The County has prepared the Multi-Hazard Functional Plan, which serves as the emergency management plan for the entire County. The Plan, revised on February 17, 1998, sets forth procedures and measures for coordination with County agencies in the event of a disaster. In compliance with SEMS requirements the City has also prepared a Multi-Hazard Functional Plan (1996) which addresses the following functions: management, operations, logistics, planning/intelligence, and finance/administration.

(2) City of Carson General Plan

The City of Carson General Plan's Safety Element contains goals and policies that address the provision of police services in the City. Goal SAF-6 deals with ensuring the safety of residents and visitors of the City. Policies under this goal involve continued coordination between the City and the Sheriff's Department to maintain standard levels of service, to promote public outreach programs and to develop defensible space through site and building design guidelines. Other policies pertaining to this goal include the continued enforcement of established codes, such as speed limits, policing programs, and Community Watch Programs. Appropriate signage, street markings and proper landscape maintenance are also included in these policies. Goal SAF-7 is to reduce the occurrence of violent crimes, especially as committed by youth. Safety Element policies include a "zero tolerance" approach to gang related activities, to promote awareness of criminal behavior and youth related crimes, and to support programs for youth which provide jobs, education, intervention, restitution and/or enforcement strategies. Implementation measures for these goals are also identified in the Safety Element.

b. Existing Conditions

(1) Service Ratios

The service area of the Sheriff's Department totals approximately 3,157 square miles and covers the unincorporated areas of the County as well as 40 contracted cities. Currently, there are approximately 8,553 sworn officers in the Sheriff's Department serving a population of 2.8 million. Department-wide the Sheriff's Department operates a Patrol Division, a Homeland Security department, as well as Court, Correctional, and Administrative Services. The Patrol Division is divided into the following three regions: Field Operations Region I, II, and III. The Project site is located within the Field Operations Region II service area.

The City of Carson, including the Project site, is served by the Carson Sheriff Station located at 21356 South Avalon. This station also provides police services for West Compton, Gardena, Torrance, and Rancho Dominguez. Although budgeted for 181 sworn and 37 non-sworn personnel, the station is currently staffed by 151 sworn officers and 30 non-sworn full-time civilian personnel. The service ratio is 1.3 sworn officers per 1,000 residents. According to the Safety Element of the General Plan, a standard of 1.7 sworn officers per 1,000 residents is considered excellent. Thus the level of service provided by the Sheriff's Department in the City of Carson falls short of the General Plan's standard of excellence by 0.40 sworn officers per 1,000 residents. Within a 24-hour time period, approximately 30 deputies are on duty over three work shifts throughout the City. The number of patrol cars available for routine patrol is considered adequate by the Sheriff's Department. In addition, auxiliary support units are readily deployable through the Sheriff's Department response resources.

(2) Response Times

The Carson Station is a local County emergency operations center. Utilizing the Department's Sheriff's Communication Center, the nature of calls for service are assessed and dispatched from the Carson Station directly. Response Times are divided into three call types: emergent response (a call which requires an emergency response), immediate response (a call which requires a prompt, but not an emergency response), and routine response (a call of a non-emergent nature). The current year average response times for the Project area are as follows: Emergent – 4.60 minutes, Immediate – 8.09 minutes, and Routine – 35.63 minutes.

3. PROJECT IMPACTS

a. Methodology

The Los Angeles County Sheriff's Department was consulted in order to ascertain impacts that may arise with implementation of the proposed Project and to identify mitigation measures that would reduce potential impacts to a less than significant level.

b. Significance Thresholds

The Project would result in a significant impact to police protection services if:

- The Project generates a demand for additional police protection services that exceeds the existing capability of the Sheriff's Department;
- Project design fails to incorporate measures to facilitate on-site security; and
- The Project would cause an impediment to emergency access.

c. Analysis of Project Impacts

(1) Construction Impacts

The Traffic and Circulation analysis in Section IV.C of this document demonstrates that Project development would result in a less than significant impact with regard to emergency vehicle access. However, short-term construction activities, such as lane closures, sidewalk closures, and utility line construction, could have implications with regard to response times for emergency vehicles. Other implications of construction include reduced travel time due to flagging or stopping of traffic to accommodate trucks entering and exiting the Project site. Since

blockage or a substantial slowing of emergency vehicles is not anticipated, the Project's construction activities would constitute a less than significant impact with regard to emergency access. Furthermore, traffic management personnel (flag persons) would be trained to assist in emergency response by restricting or controlling the movement of traffic that could interfere with emergency vehicle access. With implementation of a Construction Management Plan and coordination between the Project's construction managers and the Sheriff's Department, the potential impact of construction on emergency access would be reduced to a less than significant level. Refer to Section IV.C Traffic and Circulation for further discussion.

During construction, the on-site storage of construction equipment and building materials could result in theft or vandalism which would potentially necessitate police involvement. However, it is anticipated that the existing chain-link fence that currently secures the perimeter of the Project site would be maintained throughout construction and that an on-site security force would be on duty at the Project site throughout the Project's construction period. Thus impacts on sheriff services during construction would be less than significant.

(2) Operational Impacts

(a) Levels of Service

The addition of 6,969 new residents and nearly two million square feet of commercial development would increase the demand for police services provided by the Sheriff's Department. The residential component of the proposed Project would generate a demand for police services due to the Project's permanent on-site residential population. The commercial component of the proposed Project would generate demand for police protection services due to increased traffic, employees, and patrons. In addition, crimes such as shoplifting and burglaries to vehicles that are generally associated with shopping and entertainment areas are anticipated to occur on-site with development of the commercial component of the Project.

Currently, the Carson Sheriff Station is staffed by 151 sworn officers and the service ratio is 1.3 sworn officers per 1,000 residents. According to the Safety Element of the General Plan, police service provided at a ratio of 1.7 sworn officers per 1,000 residents is considered excellent. Thus, the level of protective services provided by the Sheriff's Department in the City of Carson does not meet established standards of excellence. However, according to the Sheriff's Department an adequate number of patrol cars are available for patrol. Introduction of the Project's approximately 6,969 residents into the Sheriff Station's service area would incrementally reduce the ratio of sworn officers to residents. Thus, with Project implementation the level of service would fall short of the standard of excellence identified in the General Plan and impacts would be potentially significant.

Based upon the existing ratio of 1.3 sworn officers per 1000 persons, the Project's residents would create an additional demand for 9.1 officers. Under current conditions the Department is operating with 30 fewer sworn officers than they are currently budgeted for. As a result, the Project's incremental demand for sworn officers could be met through their current authorized sworn personnel level. Notwithstanding, based upon currently deployed personnel, Project impacts are concluded to be significant.

As the Project would increase the demand for police services such that significant impacts to existing service ratios would occur, after reviewing the proposed Project, the Sheriff's Department has made recommendations that would mitigate any potential public safety impacts associated with the Project. These recommendations are reflected in the mitigation measures identified in this section.

(b) Security and Project Design

The proposed Project is anticipated to provide on-site security personnel relative to the commercial uses in Districts 1, 2, and 3. Examples of typical duties and services that could be provided by security personnel include: controlling and monitoring activities at public spaces, private outdoor areas, loading docks, and parking areas, managing and monitoring fire/life/safety systems, and patrolling a property's perimeter.

The design of a project has also been shown to enhance security by incorporating features that facilitate on-site security. Design features that are typically implemented in developments with uses similar to those of the proposed Project include: lighted building entries and pedestrian walkways that provide for pedestrian orientation and clearly identify secure routes between parking areas and points of entry into buildings; public spaces that are designed to be easily patrolled and accessed by safety personnel; entrances to, and exits from buildings, open spaces around buildings, and pedestrian walkways that are designed to be open and in view of surrounding sites.

Though the proposed Project would be designed with the intent of facilitating on-site safety and security, as detailed design drawings of the Project are not currently available, impacts due to the Project's design are conservatively concluded to be significant. However, implementation of the recommended mitigation measures would reduce Project impacts to a less than significant level.

(2) Emergency Access

Access to the Project site would be provided via several new intersections and/or existing intersections. Intersection access points serving the Project site include Del Amo and Stamps

Drive, Lenardo Drive and Main Street, and Lenardo Drive and the I-405 interchange. Intersection service levels were evaluated in Section IV.C Traffic and Circulation to determine whether the Project would have significant impacts at nearby intersections. It is concluded that with the implementation of the identified traffic mitigation measures, Project traffic impacts would be reduced to less than significant levels at all of the analyzed location, except for the intersection of Figueroa Street and I-110 Northbound Ramps. However, due to the location of the Carson Sheriff's Station relative to the location of Project (i.e., the Station being southeast of the Project site and Figueroa Street and I-110 being to the west) it is not anticipated that emergency vehicles would pass through this intersection to gain access to the Project site. Thus, emergency access during Project operations would not be impeded and no significant impacts would occur.

4. MITIGATION MEASURES

The following mitigation measures are based on the recommendations provided by Sheriff's Department regarding the proposed Project as well as a requirement regarding the provision of private security service within Districts 1 and 2:[124]

Mitigation Measure I.2-1: The Applicant shall provide private security services within the areas of Districts 1, 2, and 3 that are occupied by commercial development. On-site security services shall maintain an ongoing dialogue with the Sheriff's Department so as to maximize the value of the security service that are provided.

Mitigation Measure I.2-2: The Applicant shall incorporate into the Project design a Community Safety Center for use by the Project's private security force and the Los Angeles County Sheriff's Department. It shall include the following features at a minimum: a front desk/reception area, a community meeting room, work space for law enforcement and public safety personnel, a video monitoring console, and restrooms. The Center shall be staffed either by a Sheriff's Department Community Services officer or personnel approved by the Sheriff's Department.

Mitigation Measure I.2-3: The Applicant shall install video cameras throughout the commercial development within Districts 1, 2, and 3 with a digitally recorded feed to the Community Safety Center that is also accessible via the internet at the Carson Sheriff's Station.

[124] *Los Angeles County Sheriff Department letter to Ron Winkler, June 29, 2005.*

Mitigation Measure I.2-4: The Applicant shall provide the Project's fair share of a budget for the deployment of a one person patrol unit which is dedicated to providing preventative patrol on the commercial portions of the Project site.

Mitigation Measure I.2-5: The Applicant shall fund Deputy Sheriffs on an overtime basis to augment security during peak periods, as jointly determined by the Applicant or its successor, and the Sheriff's Department.

Mitigation Measure I.2-6: The management of the entertainment venues located within the Project site shall notify the Sheriff's Station in advance of planned activities (i.e. movie schedules).

Mitigation Measure I.2-7: The Sheriff's Department Crime Prevention Unit shall be contacted for advice on crime prevention programs that could be incorporated into the proposed Project, including Neighborhood Watch.

5. CUMULATIVE IMPACTS

(a) Construction Impacts

As discussed in Section IV.C Traffic and Circulation, with regard to construction activities, no significant cumulative impacts associated with emergency access in and around the Project site would occur. As with the Project, related projects that would be large enough to cause lane closures or detours may be required to provide construction management plans to the City of Carson and, possibly, to police and fire services. However, since no related projects are sufficiently close to the Project site to create a cumulative impact on conjoining street segments, the cumulative effects of construction activities on emergency access would be less than significant.

In addition, the related projects are also anticipated to maintain secure sites during the respective construction periods, so that cumulative construction activities would not result in a demand on police services greater than the existing capability of the Sheriff's Department.

(b) Operational Impacts

Growth associated with development in the service boundaries of the Sheriff's Department, including the Project and the related projects, would combine to generate a demand for additional police services. As with the Project, most of the related projects would be subject to discretionary review, including an evaluation of the adequacy of police services and the need for mitigation measures. As the Project's impacts would be addressed via the identified

mitigation measures, the Project would not contribute to a significant cumulative impact on police services. Furthermore, the Sheriff's Department would have input regarding mitigation for each of the related projects. Thus, cumulative growth impacts are concluded to be less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the implementation of the recommended mitigation measures, impacts to police services and facilities provided by the Sheriff's Department would be less than significant.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
3. SCHOOLS

1. INTRODUCTION

This section evaluates potential Project impacts on school facilities operated by the Los Angeles Unified School District (LAUSD). The analysis is based on the estimated number of students that would be generated by the proposed Project, using LAUSD student generation rates, and focuses on whether LAUSD school facilities that would serve the Project have sufficient available capacity to accommodate these students. The analysis addresses elementary, middle, and high school facilities operated by the LAUSD.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

Senate Bill 50 (SB 50), enacted in 1998, is a program for funding school facilities largely based on matching funds. The approval of Proposition 1A authorized funds for SB 50 in the amount of $9.2 billion, including grants for new school construction and modernization of existing schools. The new construction grant provides funding on a 50/50 State and local match basis. The modernization grant provides funding on a 60/40 basis. Districts that are unable to provide some, or all, of the local match requirement and are able to meet the financial hardship provisions may be eligible for additional State funding.[125]

SB 50 allows the LAUSD to levy a fee, charge, dedication, or other requirement against any development project within its boundaries, for the purpose of funding the construction or reconstruction of school facilities. The LAUSD collects the maximum new school construction facility fee at a rate of $3.69 per square foot of new residential construction, $0.34 per square foot of commercial construction, and $0.09 per square foot for parking structures. Pursuant to Government Code Section 65995, the payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to less than significant levels.

[125] *State of California, Office of Public School Construction, School Facility Program Handbook, February 2005.*

Other major statewide funding sources for school facilities are Proposition 47, a $13.2 billion bond approved in November 2002, containing $11.4 billion for kindergarten through high school (K–12) public school facilities and Proposition 55, a $12.3 billion bond approved in March 2004, containing $10 billion to address overcrowding and accommodate future growth in K-12 schools. Local measures provide additional funding for existing and new school construction projects.

Utilizing the funding sources described above, the LAUSD has implemented the New School Construction Program: a multi-year capital improvement program valued at over $9.2 billion. The New School Construction Program is the major component of the LAUSD's plan to relieve overcrowding in its schools by returning students to a two-semester (single track) calendar. By the end of 2005, 62 new schools and more than 61,000 new seats will be built. A total of 170,000 new seats will be added to the LAUSD by the end of 2012.[126]

b. Existing Conditions

The LAUSD encompasses roughly 700 square miles and serves the City of Los Angeles and all or portions of 28 other cities. The LAUSD is one of the largest public school districts in the nation. The LAUSD provides kindergarten through high school (K–12) education to a total of 746,610 students, enrolled throughout 806 schools: 434 elementary schools, 78 middle schools, 56 senior high schools, and 14 multilevel schools.[127] The LAUSD is currently divided in eight Local Districts. Formerly, the LAUSD was divided into 11 Local Districts, referred to as Regions A-K. A decision by the LAUSD to redistrict resulted in the current Local District (1–8) configuration.

In July 2004, David Taussig & Associates (DTA) conducted a study that established student generation rates ("SGR Study"), as well as a Residential Development Market Report ("Market Report"), for the LAUSD. The Market Report anticipates that over the next five years, an additional 13,217 students will reside within the District's boundaries. The SGR Study calculated student-generation rates by housing type (e.g., single family detached, single family attached, and multifamily) for each school level.[128] The student generation rates for single family attached units, which includes condominiums, are as follows: (1) 0.0867 elementary school student per dwelling unit, (2) 0.0434 middle school student per dwelling unit and (3) 0.0438 high school student per dwelling unit. The student generation rates for multifamily units are as follows: (1) 0.2396 elementary school student per dwelling unit; (2) 0.1070 middle school

[126] *Los Angeles Unified School District, Strategic Execution Plan, January 2005*

[127] *Enrollment and facilities information was obtained from the LAUSD Office of Communications website, www. lausd.k12.ca.us/lausd/offices/Office_of_Communications/Fingertip_Facts_2004_2005.pdf.*

[128] *LAUSD School Facilities Needs Analysis, Table 3, September 9, 2004*

student per dwelling unit; and (3) 0.0933 senior high student per dwelling unit. The LAUSD has experienced an increase in enrollment over the last decade, from 636,000 students in the 1994–1995 school year to over 746,000 students in the 2003–2004 school year. Further, the LAUSD has recently implemented a class size reduction program. As part of an effort to create the needed additional space, the LAUSD has implemented multi-track, year-round school calendars at many school sites. At least 30 percent of LAUSD schools are on multi-track year-round schedules to accommodate the heavy enrollment.[129] Other options available to the LAUSD include open enrollment and providing portable classrooms and new permanent facilities. Transportation of students from overcrowded schools to less crowded schools is also a possible method of addressing overcrowding, though it is not a favored solution.

The following is a list of schools that would serve the Project including location, distance from the Project site,[130] and enrollment for the 2004–2005 school year.[131]

1. Carson Elementary School is located at 161 East Carson Street approximately 1.3 miles from the Project site. Carson Elementary provides educational services for kindergarten through fifth grades and has a 2004-2005 school year enrollment of 766 students.

2. Steven M. White Middle School, located approximately 2 miles from the Project site at 22102 South Figueroa Street, serves grades 6 through 8 and has a 2004–2005 school year enrollment of 1,994 students.

3. Carson Senior High School, located roughly 1.6 miles from the Project site at 22328 South Main Street, provides educational services for 9th- through 12th-grade students and has a 2004–2005 school year enrollment of 3,662 students.

White Middle School and Carson High School are currently operating on a single-track schedule whereby instruction generally begins in early September and continues through late June. The Carson Elementary School calendar consists of four tracks.

School Capacities

As discussed above, overcrowding is a general concern for the LAUSD. The LAUSD's School Facilities Needs Analysis[132] determined that the District was 81,117 students over

[129] *David Taussig and Associates, Inc., Residential Development Market Report for Los Angeles School District.*

[130] *Approximate distances are from Development District Five of the Project site, where the residential units would be constructed.*

[131] *LAUSD School Information Branch, Planning, Assessment and Research Division, School Profiles, website, www.lausd.k12.ca.us/lausd/offices/icb/, accessed June 2, 2005.*

capacity for the 2003-2004 school year. To address this shortage in capacity and accommodate future growth, the LAUSD has implemented the New School Construction Program, as discussed above, which will construct 170,000 new seats by the end of the year 2012.

As shown in Table 62 on page 479, all three schools that serve the Project area are operating at enrollment levels which are below capacity, though Carson High School is currently operating near its capacity. As part of LAUSD's New School Construction Program, a new high school is planned for student occupancy in 2010. The school will consist of 1,870 two-semester seat (70 classrooms) and will create additional capacity within the area currently served by Carson, Banning, and Narbonne Senior High Schools. The new high school is proposed to be located on the eastern edge of Carson on Santa Fe and Carson Street in Long Beach.

School capacities can generally be increased by the use of portable or modular classrooms and/or the implementation of a year round or multi-track school calendar. Portable classrooms are generally utilized as a low-cost alternative to permanent construction to assist in the relief of school overcrowding. These facilities are designed to accommodate 25 students per portable unit for elementary schools and 30 students per portable unit for middle and high schools. Utilization of portable classrooms is subject to the maintenance of minimum open space requirements at each school. Implementation of year-round and multi-track calendars can also serve to increase school capacity by roughly one-third.

3. PROJECT IMPACTS

a. Methodology

The analysis of potential Project impacts is based on the number of students generated by the Project and the estimated operating capacity of the school facilities that would serve the Project. The student generation rates used in this analysis and current school capacity data were obtained directly from the LAUSD. The methodology used in this analysis assumes that the number of new students generated from the residential component of the Project is directly related to the dwelling unit type and amount of proposed construction.

The methodology used to estimate the number of students that would be generated by the Project's commercial component takes into account the location of the employee's residence as the number of students attending schools in proximity to the parent's workplace is relatively limited. Based on this approach, the attendance boundaries for each of the three schools that would serve the Project site were mapped and the distances from the Project site were calculated.

[132] *LAUSD School Facilities Needs Analysis, Table 7, September 9, 2004*

Table 62

School Capacity

School	Current Enrollment	Estimated Capacity [a]	Available Existing Capacity
Carson Elementary School	766	999	233
White Middle School	1,994	2,400	406
Carson Senior High School	3,662	3,675	13

[a] *Estimated operating capacity including magnet authorization as per LAUSD Information Request for an EIR Report, July 27, 2005.*

Source: Letter sent to PCR Services Corporation. from Mary Prichard, LAUSD, July 29, 2005.

These distances were then converted to travel time so as to correlate this information with data published as part of Census 2000. Using Census 2000 data, the number of Project employees that would reside within the attendance boundaries of each of the three schools was calculated. The number of students generated by these employees was then calculated using LAUSD student generation factors.

The LAUSD limits its enrollment forecasts to five-year projections with the latest forecast being for the 2009 school year. Though Project buildout is anticipated to occur in 2010, future school capacity determinations are made based on LAUSD's five-year projections as this constitutes the best available information. Thus, the 2009 forecast is used for analyzing impacts at Project buildout as it represents the LAUSD's forecast closest to the Project's buildout year.

The number of students generated from the proposed Project was added to the projected 2009 enrollments and compared to the estimated operating capacities of the schools that would potentially serve the Project site. The extent to which Project-generated students could be accommodated within existing and/or expanded facilities was evaluated. The following methodology was used to determine potential Project impacts:

1. The number of students generated by the Project is calculated using LAUSD student generation rates.

2. The number of Project-generated students is compared to the estimated operating capacity at each school that serves the Project site.

3. A determination of the adequacy of LAUSD facilities to accommodate the students generated by the proposed Project is made.

4. If the analysis concludes that existing school facilities would be inadequate to accommodate the Project-generated students, the potential to increase the school's capacity is evaluated.

b. Thresholds of Significance

The proposed Project would have a significant impact on LAUSD schools if:

- The Project's demand for school services exceeds the capacities of the schools that would serve the Project site such that the Project's increased demand would require the construction of new facilities, a major reorganization of students or classrooms, major revisions to the school calendar (such as year-round sessions), or other actions that would create a temporary or permanent impact on the school(s).

c. Impact Analysis

The LAUSD has developed student generation rates for a variety of housing types. For this analysis, student generation rates applicable to condominium units (i.e., single family attached) and multi-family residential units were utilized, as they are reflective of the type of development proposed to occur at the Project site. The proposed Project would introduce an additional 1,550 residential units (1,150 for sale units and 400 rental units) and approximately 6,969 new residents into the City of Carson. As shown in Table 63 on page 481, based on LAUSD student generation rates, the residential component of the Project would generate a total of 376 students.

Additional students would also be generated by the Project's commercial component. These students would most likely attend schools within the LAUSD's service boundaries, some of which would attend the schools identified to serve the Project site. Based on the attendance boundaries of these schools, it is anticipated that the elementary students generated by the commercial component of the Project would reside within an approximately five-minute drive of their homes, middle school students would reside within an approximately 10-minute drive of their homes, and high school students would reside within an approximately 15-minute drive of their homes. Thus, Project employees who travel less than five minutes to work would generate students within the attendance boundaries of Carson Elementary School, Project employees who travel less than 10 minutes to work would generate students within the attendance boundaries of White Middle School, and Project employees who travel less than 15 minutes to work would generate students within the attendance boundaries of Carson Senior High School.

According to Census 2000 data, approximately three percent of all workers in the City of Carson travel less than five minutes to work, 10 percent travel less than 10 minutes to work, and 22 percent travel less than 15 minutes to work.[133] It is anticipated that travel time to work for the

[133] *Census 2000, Table P31. Travel Time to Work for Workers 16 Years and Over.*

Table 63

Estimated Student Generation for the Project

A. Residential Component

	Condominium Units (For Sale)			Multi-Family (Rental)			
School Level	Number of Units	Student Generation Rate [a]	Total	Number of Units	Student Generation Rate [a]	Total	Forecasted Student Generation
Elementary	1,150	0.0867	100	400	0.2396	96	196
Middle	1,150	0.0434	50	400	0.1070	43	93
High	1,150	0.0438	50	400	0.0933	37	87
Total	**1,150**	**0.1739**	**200**	**400**	**0.4399**	**176**	**376**

B. Commercial Component

School Level	Student Generation Rates [c]	Number of Employees within Attendance Boundaries	Forecasted Student Generation[b]
Elementary	0.106	160	17
Middle	0.049	532	26
High	0.060	1,170	70
Total			**113**

C. Combined Total from Residential and Commercial

	Elementary	Middle	High	Total
Students Generated	213	119	157	**489**

[a] *LAUSD Student Generation Rates, School Facilities Needs Analysis, Table 3, September 9, 2004*
[b] *Number of Students rounded to the nearest whole number.*
[c] *Based on rates generated by LAUSD.*

Source: PCR Services Corporation.

employees generated by the Project would be similar to that of other workers living in the City of Carson. The Project would generate approximately 5,320 employees; 160 employees would constitute three percent, 532 would constitute 10 percent, and 1,170 would constitute 22 percent of the total.

Based on the number of employees living within the attendance boundaries of the schools that would potentially serve the Project site and the LAUSD student generation rates, employees of the commercial component of the Project would generate 113 students: 17 students within the attendance boundaries of Carson Elementary School, 26 students within the attendance boundaries of White Middle School, and 70 students within the attendance boundaries of Carson

High School.[134] Therefore the Project's residential and commercial components collectively would generate a total of 489 students that would attend the schools identified to serve the Project, consisting of 213 elementary school students, 119 middle school students, and 157 high school students.

The actual number of students who would attend the LAUSD schools identified above may be less than the number calculated by the LAUSD Student Generation Factor as the analysis does not take into account the following options that could allow students generated by the proposed Project to enroll in LAUSD schools away from their home attendance area based on the availability of classroom seats at the desired school:

- Open enrollment enables students anywhere within the district to apply to any regular, grade-appropriate LAUSD school with designated "open enrollment" seats;
- Magnet schools and magnet centers are open to all students in the LAUSD. Transportation is provided to students who participate in magnet programs who live outside a two-mile radius or outside the magnet school attendance boundary;
- Permits With Transportation (PWT) program allows students to continue to go to the schools within the same feeder pattern[135] of the school they were enrolled in from elementary through high school. The LAUSD provides transportation to all students enrolled in the PWT program regardless of where they live within the District;
- Intra-district and inter-district parent employment-related transfer permits allow students to enroll in a school that serves the attendance area where the student's parent is regularly employed;
- Sibling permits enable students to enroll in a school where a sibling is already enrolled; and
- Child care permits enable students to enroll in a school that serves the attendance area where a younger sibling is cared for every day after school hours by a known child care agency or private organization or a verifiable child care provider.

[134] *The Project's commercial component would generate a total of 1,144 students (i.e., 935 elementary school, 427 middle school, and 464 high school) that would attend schools throughout LAUSD's jurisdiction. As these students would be spread across a number of LAUSD schools, Project impacts on the capacity of any one school are anticipated to be less than significant.*

[135] *A feeder pattern is the linkage from an elementary school to a middle school and a middle school to a high school.*

Enrollment levels at the above-identified schools are currently below capacity. However, based upon the estimated number of Project-generated students, the increased enrollment attributable to the proposed Project would exceed existing school capacities at Carson Elementary School and Carson Senior High School and, thus, would result in a potentially significant impact on these schools. Though, as previously discussed, a new high school consisting of 1,870 two-semester seats is planned for student occupancy in 2010 and would relieve overcrowding at Carson Senior High School. The LAUSD would decide on whether to address the need to accommodate these students via the construction of new facilities, the use of portable classrooms, reorganization of students or classrooms, or changes to single-track school calendars. Furthermore, the City has identified potential changes in school attendance boundaries as a method of addressing impacts at Carson Elementary School, with students attending Towne Avenue Elementary School.

Construction Impacts

On-site construction activities, as well as construction traffic (e.g., worker travel, hauling activities, and the delivery of construction materials), would not affect existing school traffic, pedestrian routes, and transportation safety in the Project vicinity. Haul routes to and from the Project site during construction would be primarily by way of the I-405 freeway with southbound traffic utilizing Main Street and northbound traffic utilizing Avalon Boulevard. As such, haul routes would not pass in front of any schools in the area. Further, as site access would be via I-405 on- and off-ramps, haul routes would not utilize the local roadway network in a very limited manner due to the proximity of the Project site to these ramps. Therefore, it is concluded that Project construction traffic would not interfere with school bus or school pedestrian routes. Construction staging and construction-related vehicle parking would not occur on or near school property as there are no schools adjacent to the Project site. Furthermore, as the Project site is essentially undeveloped, there is sufficient area to accommodate construction activities on-site. Safety and security would be maintained throughout construction of the Project as construction activities would adhere to all applicable standard construction standards including those set forth in the California Vehicle Code. The perimeter of the Project site is currently secured with a chain link fence and would remain secured as such throughout Project construction. Therefore, impacts associated with Project construction would be less than significant**.**

4. MITIGATION MEASURES

The students generated by the proposed Project, based on the preceding analysis could not be accommodated within the existing facilities at Carson Elementary School and Carson Senior High School. Pursuant to California Government Code Section 65995, payment of the developer fees required by State law provides full and complete mitigation of the Project's impacts on school facilities. Therefore, no other mitigation measures are required.

5. CUMULATIVE IMPACTS

Section III.B of this Draft EIR provides a list of related projects which have the potential to occur concurrent with the development of the proposed Project. Cumulative impacts related to schools were considered only for projects within the same attendance boundaries as the schools identified to serve the Project: Carson Elementary School, White Middle School, and Carson Senior High School. Cumulative impacts were assessed utilizing LAUSD student generation rates. As shown in Table 64 on page 485, related projects would generate approximately 197 students: 15 Elementary, 76 Middle, and 106 High School. The generation of students from related projects in combination with students generated by the proposed Project would result in a potentially significant impact to Carson Elementary School and Carson Senior High School as existing school capacities would be exceeded. As previously discussed, school capacity can be increased by the use of portable or modular classrooms and the implementation of year round or a multi-track school calendar. Portable classrooms are generally used to relieve overcrowded schools and are designed to accommodate 25 students per portable unit for elementary schools and 30 students per portable unit for middle and high schools. Implementing year round and multi-track calendars also serve to increase school capacity by roughly one-third. As noted above, the City has identified potential changes in school attendance boundaries as a method of addressing impacts of Project generated students at local schools. Changes in school boundaries may be further considered by LAUSD in light of the larger impacts occurring with the related projects. The school facility development fees that would be paid by all new development, under the provisions of SB 50 would constitute full mitigation for the impacts of these new developments, thereby reducing individual and cumulative Project impacts to a level that is less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential impacts to LAUSD schools associated with the proposed Project, based on available forecasted capacity within existing facilities, would be potentially significant. Pursuant to the provisions of Government Code Section 65995, a project's impact on school facilities are fully mitigated through the payment of the requisite school facility fees current at the time building permits are issued. As the Project applicant is required to pay school facility development fees, potential Project impacts to schools are concluded to be less than significant.

Table 64

Impacts of Related Projects on Schools

A. Residential Development

Dwelling Unit Type	Units	SGR	Elementary	Units	SGR	Middle	Units	SGR	High
Single Family Detached	18	0.2184	4	59	0.0981	6	160	0.112	18
Single Family Attached	98	0.0867	9	6	0.0434	0	383	0.0438	17
Multifamily	0	0.2396	0	0	0.107	0	0	0.0933	0
Total			**13**			**6**			**35**

B. Commercial Development

	Amount of Proposed Development			
Land Use	Within Elementary School District	Within Middle School Districts	Within High School District	Employee Density Factor [a]
Office (sq.ft.)	0	0	195,000	250
Retail (sq.ft.)	5,620	525,491	15,870	375
Recreation (sq.ft.)	0	0	80,000	500
Church (sq.ft.)	0	5,200	5,200	500
Movie Theater (seats)	0	2,000	0	5,000
Childcare (children)	0	0	150	12:1
Hotel (Rooms)	0	0	200	0.9
	Forecasted Employment			
Office (sq.ft.)	0	0	780	
Retail (sq.ft.)	15	1,400	42	
Recreation (sq.ft.)	0	0	160	
Church (sq.ft.)	0	10	10	
Movie Theater (seats)	0	15	0	
Childcare (children)	0	0	13	
Hotel (Rooms)	0	0	180	
Total	15	1,425	1,185	

School Level	Employees	Student Generation Factor	Student Generation
Elementary	15	0.106	2
Middle	1,425	0.049	70
High	1,185	0.060	71
Total			**143**

C. Combined Residential and Commercial Development

School Level	Residential	Commercial	Total
Elementary	13	2	15
Middle	6	70	76
High	35	71	106
Grand Total			**197**

[a] *Factors generated by LAUSD and PCR Services Corporation from the Institute of Transportation Engineers, Trip Generation Manual, 6th Edition, 1997.*

Note: Student generation rates (SGR) obtained from David Taussig and Associates, Inc., SGR Study, Los Angeles Unified School District, July 2004.

Source: PCR Services Corporation, 2005.

ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
4. PARKS AND RECREATION

1. INTRODUCTION

This section analyzes the potential impacts of the proposed Project with regard to the parks and recreational facilities that would serve the Project's future residents. The analysis evaluates the Project's provisions for park area and open space compared to established City goals and regulatory requirements. The City of Carson Parks and Recreation Department would be the principal provider of recreational facilities to the proposed Project's residents. Additional recreational facilities in the Project vicinity are provided by the County of Los Angeles Parks and Recreation Department. In addition, other recreational facilities are available in the Project area that are either privately owned or related to school facilities.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

(1) Quimby Act

The California Government Code, Section 66477 (Quimby Act) was enacted in an effort to promote the availability of park and open space areas in response to the need for such facilities by residential development. The Quimby Act authorizes cities and counties to enact ordinances requiring the dedication of land and/or the payment of fees for park and/or recreational facilities for projects involving residential subdivisions. The Quimby Act provides that the dedication of land, or the payment of fees, or both, shall not exceed the proportionate amount necessary to provide three acres of park area per 1,000 persons residing within a subdivision, unless the amount of existing neighborhood and community park area exceeds that limit, in which case the legislative body may adopt a higher standard not to exceed five acres per 1,000 persons.

(2) City of Carson General Plan

The City of Carson General Plan Update ("General Plan") was approved by the City Council on October 11, 2004. The General Plan addresses the need for the provision of land for parks and recreational use in both the Parks and Recreation and Open Space and Conservation

Elements. The following discussion identifies the City's existing park area and open space resources, and describes the goals and standards set forth to preserve and expand these resources.

(a) Parks and Recreation Element

The Parks and Recreation Element indicates that community recreation planning should address the following seven issues: (1) the need for additional recreational facilities in the City; (2) the need for enhanced safety and maintenance of the City's parks; (3) the need to promote a variety of recreational and educational facilities for the development of the community's youth; (4) the need to provide affordable recreational and cultural programs; (5) the need for leisure services for seniors in the community, as the number of persons over the age of 50 continues to increase; (6) the need for locally based cultural arts programs (i.e., theater, music, art, dance, etc.) to enrich community life; and (7) the need to address the recreation and social needs of the community's emotionally and physically challenged residents. Though not included as part of the Parks and Recreation Element's goals, policies, or implementation measures, the City's target ratio of public park area to population is four acres of park area per 1,000 persons.

The City classifies parks according to three types: regional, neighborhood and mini. Regional parks are intended to serve the community and surrounding area and are located on or near arterial roadways to facilitate accessibility via automobile, foot, or bicycle. Neighborhood parks are located within walking or biking distance of the neighborhood or neighborhoods they serve. Facilities at neighborhood parks typically include ball fields, basketball courts, children's play areas, and picnic areas. Mini parks serve areas where limited land availability constrains the provision of a larger facility. These parks generally include children's play areas and picnic areas.

(b) Open Space and Conservation Element

The intent of the Open Space and Conservation Element of the General Plan is to recognize and conserve open space resources within the City. Government Code Section 65302(e) defines open space for the purpose of outdoor recreation as "areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes…and areas which serve as links between major recreation and open space reservations, including utility easements…trails, and scenic highway corridors." Open space in the City is comprised of Recreational Open Space and General Open Space. Park area and the Victoria Public Golf Course are considered Recreational Open Space areas. Utility transmission corridors, drainage and flood control facilities, and the Goodyear Blimp Port comprise the City's General Open Space. The Open Space and Conservation Element does not specify a standard for the provision of open space separate from that set forth in the Parks and Recreation Element.

The City's General Plan establishes goals and policies related to parks, recreation facilities, and open space areas in the City. In addition to these standards, park area requirements are also set forth in Section 9207.19 of the Carson Municipal Code (Municipal Code). The following provides information regarding applicable Municipal Code standards and requirements.

(3) City of Carson Municipal Code

(a) Parks and Recreational Facilities

Section 9207.19 of the Carson Municipal Code, as authorized under the State Quimby Act, applies to new residential subdivisions and requires that every subdivider dedicate a portion of land for recreational use, or pay a fee in lieu of land dedication, or a combination of both. Park area acreage requirements for subdivisions are determined by the type of dwelling unit to be constructed and the population density per unit. As stated above, the amount of land required to be dedicated shall equal the proportionate amount necessary to provide three acres of park area per 1,000 residents unless the amount of existing neighborhood and community park area exceeds that limit.

This Municipal Code Section permits private recreational space and improvements to be credited against a project's land dedication requirement. "Private recreational space" is defined as land which is reasonably adaptable for park and recreation use. The crediting of private recreational space against a project's land dedication requirement is subject to specific criteria set forth in the Municipal Code. Open areas, such as yards and setbacks, required by the zoning and building regulations are not eligible to be credited against a project's land dedication requirement. Credit for private recreational space shall not exceed 30 percent of the land which would otherwise be required to be dedicated pursuant to this Section of the Municipal Code. Recreational improvements may also be credited, provided that the value of the improvements does not exceed the value of the private recreational space upon which these improvements are located.

(b) Open Space

Section 9126.28 of the Municipal Code requires that, for multiple-family dwelling projects of one acre or less, at least 30 percent of the net project area consist of usable open space, and for projects greater than one acre, usable open space comprise at least 40 percent of the net project area. Subject to the approval by the City, open space may include one or more of the following, designated for the use and enjoyment of all the occupants of the planned residential development:

- Common open space developed for recreation purposes.
- Areas of scenic or natural beauty forming a portion of the proposed development.
- Present or future recreational areas of a noncommercial nature including parks and playgrounds. Where specifically approved by the approving authority, green fees or similar charges related to use of a golf course or similar open recreational use may be permitted, provided such charges are incidental to the operation of said facilities, are not primarily commercial in nature, and do not alter the character of the recreational facility.
- Present or future hiking, riding or bicycle trails.
- Landscaped areas adjacent to streets or highways which are in excess of minimum required rights-of-way.
- Other similar areas determined appropriate by the approving authority.

Sections 9128.54 and 9128.15 of the Municipal Code pertain to private open space standards for multiple-family dwelling units, and condominiums, respectively. According to these Municipal Code Sections, private open space, notwithstanding the minimum total amount of usable open space required for a multiple-family dwelling project, should include an appurtenant private patio, deck, balcony, atrium or solarium with a minimum area of 150 square feet, except that one bedroom and zero bedroom units shall have a minimum of 130 square feet for each unit. In addition, private open space should be designed for the sole enjoyment of the unit tenant(s) and guests, and shall have at least one weatherproofed, duplex electrical convenience outlet. Additionally, such space shall be at the same level as, and immediately accessible from, either a kitchen, dining room, family room or living room within the unit.

According to the Municipal Code's definition of private recreational space, common (usable) open space provisions pursuant to this Section would potentially qualify to be credited against a project's land dedication requirements, whereas, private open space provisions would not.

(c) City of Carson's Five-Year Capital Improvement Plan

The City of Carson's Five-Year Capital Improvement Plan (CIP) identifies several projects which include either the expansion and/or improvement of existing recreational facilities in the Project area. The CIP is a financial plan of the City's proposed capital improvement projects including the means of financing them. The following is a list and summary of nearby planned recreational projects.

- Anderson Park Improvement Project. This project includes the addition of a meeting room to an existing remote restroom.

- Carson Park Improvement Project. This project consists of two phases. Phase 1 is currently in the planning process and will address many long-standing issues with regard to the turf and irrigation system at Carson Park. Phase 2 of the Carson Park Improvement Project will address guidelines set forth in the Code of Federal Regulations (CFR) under the Americans with Disabilities Act (ADA) at the pool. Improvements will include pool and locker room refurbishments, and office and storage room upgrades to meet ADA requirements. Improvements to the park will include security lighting upgrades, sports lighting, remote restroom refurbishment, perimeter fencing, and a ball wall.

- Del Amo Park Improvement Project. This project includes the repair of the baseball diamond, the addition of fencing to baseball diamond number one, and the upgrade of sports lighting for energy efficiency. It also includes the installation of raised planters with trees around the playground and the addition of shade cover to the picnic area.

- Mills Park Improvement Project. This project includes the addition of a meeting room with restrooms and the upgrade of facilities to meet ADA requirements.

b. Existing Conditions

(1) Parks and Recreational Facilities

There are 16 public parks, one county park and two public golf courses totaling 354 acres in the City of Carson. The City does not include Dominguez Golf Course in calculating its ratio of park area per resident, therefore, a total of 315 acres is used for this purpose. The City's 2000 Census population is 89,730. Thus, park area is currently provided at a rate of 3.5 acres per 1,000 residents. Park and recreational space owned and operated by the City is provided at a rate of 1.72 acre per 1,000 residents.[136] These ratios do not meet the City's stated target ratio for the provision of four acres of park area per 1,000 persons. However, these ratios do not take account public school facilities or commercial recreational facilities, the inclusion of which would greatly increase the ratio of park area per 1,000 residents. Public schools with onsite recreational facilities total 546.1 acres, 349.2 of which are within the California State University Dominguez Hills campus. California State University Dominguez Hills has 40 acres developed with recreational facilities including a large multi-purpose soccer field, 12 tennis courts, track and field facilities, baseball and softball fields, a gymnasium, and an inline roller rink. In addition, the City has a Joint Use Agreement with the Los Angeles Unified School District (LAUSD) for

[136] *Assumes City of Carson population of 89,730 based on 2000 Census data.*

the use of playfields, tennis courts, and other recreational facilities during off-school hours at Carson High School and Caroldale Elementary School.

The City of Carson has identified twelve parks that are located in proximity to the Project site and, thus, would potentially be used by Project residents. The twelve parks, as shown in Figure 39 on page 492, include the following: (1) Anderson Park; (2) Calas Park; (3) Carson Community Center; (4) Carson Park and Pool; (5) Del Amo Park; (6) Dominguez Golf Course (7) Hemingway Park (8) Mills Park; (9) Scott Park; (10) Veterans Park and Sports Complex; (11) Victoria Golf Course; and (12) Victoria Park. The following is a brief description of the facilities present at each of these park and recreational facilities.

1. Anderson Park – An 8.5-acre park including basketball courts, a children's play area, a Frisbee golf course, a meeting/craft room, picnic areas, four tennis courts, and a wading pool.

2. Calas Park — Encompasses 8.7 acres and includes the following recreational features: ball field, basketball courts, children's play area, meeting/craft rooms, picnic areas, snack bar, tennis courts, and wading pools.

3. Carson Community Center – The Community Center property encompasses 12 acres with 78,400 square feet consisting of 26 meeting/craft rooms, a new senior hall, and two early childhood education rooms.

4. Carson Park and Pool — Encompasses 10.9 acres and includes the following recreational features: ball fields, basketball courts, children's play area, football field, horse-shoes, meeting/craft rooms, picnic areas, snack bar, soccer field, volleyball courts, and swimming pool.

5. Del Amo Park — Encompasses 9.5 acres and contains: ball fields, basketball courts, children's play area, football field, meeting/craft rooms, picnic areas, and snack bar.

6. Dominguez Golf Course — Encompasses 39.2 acres and is an 18-hole, par 3 golf course with a two tier driving range. The City classifies this golf course as a non-City recreational facility.

7. Hemingway Park - Encompasses 13 acres and includes two ball fields, two basketball courts, children's play area, meeting/craft rooms, picnic areas, snack bar, tennis courts and a proposed 25-yard swimming pool.

8. Mills Memorial Park – A 5-acre park including a children's play area, meeting/craft rooms, picnic areas, and a wading pool.

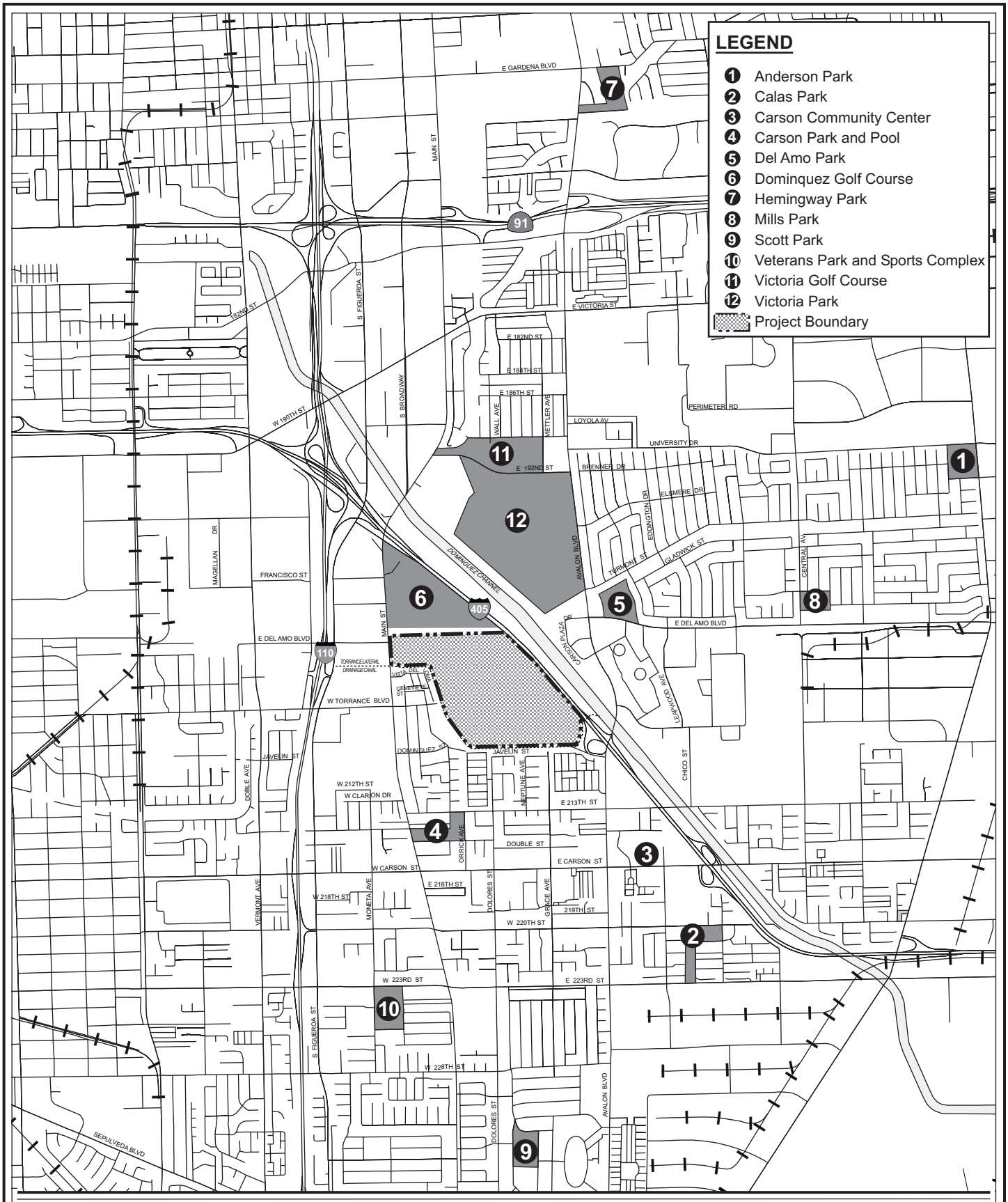

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Figure 39
Parks and Recreational Facilities in Proximity of the Project Site

Source: Thomas Guide 2004 and PCR Services Corporation

9. Scott Park – An 11.2-acre park including two basketball courts, two ball fields, a children's play area, meeting/craft rooms, picnic areas, a snack bar, and tennis courts. A 25-yard swimming pool is proposed.

10. Veterans Park and Sports Complex — Encompasses 12.6 acres and includes the following recreational facilities: ball fields, basketball courts, children's play area, horse-shoes, meeting/craft rooms, snack bar, tennis courts, wading pools, 25,000 sq. ft. building with basketball courts, gymnasium, volleyball courts, fitness center, and racquetball courts. A skate park is also planned.

11. Victoria Golf Course - The golf course encompasses roughly 162 acres and is a public recreation course. This is a Los Angeles County recreational facility.

12. Victoria Park— The park area consists of 36 acres and includes: ball fields, basketball courts, a swimming pool, gymnasium, tennis courts, a play area, a recreation building, and a picnic area. This is a Los Angeles County recreational facility.

(2) Open Space

Open space areas in the City of Carson totals 599 acres. This acreage includes 153 acres of parks, the 162-acre Victoria Public Golf Course, 30 acres for the Goodyear Blimp Port, and 254 acres of drainage courses and utility transmission corridors. This open space calculation does not include the City's street medians and parkways, nor does it include open space associated with public schools which is estimated to be 118 acres.[137] California State University Dominguez Hills also has 125 acres of planned and existing recreational open space. The City considers closed landfills, such as the Project site, which have not been fully remediated to be temporary open space areas.

3. ENVIRONMENTAL IMPACTS

a. Methodology

The impact analysis focuses on the proposed Project's potential impacts related to the provision of parks and recreation areas, as well as the provision of open space. To assess these impacts, the Project's provision of both park space and open space is compared to the requirements set forth in the respective sections of the Carson Municipal Code. The conclusions in this analysis are based on whether the proposed Project would be consistent with adopted

[137] *City of Carson General Plan Update approved by the City Council on October 11, 2004*

General Plan goals, policies, and implementation measures as well as the requirements of the Carson Municipal Code.

b. Thresholds of Significance

In recognition of the importance of parks and open space to its residents, the City of Carson provides for park and recreation facilities through means of planning and regulations. Therefore, the City has concluded that the park area and open space needs of its residents are met through compliance with these provisions. Accordingly, the proposed Project would be considered to have a significant impact on parks and recreation if:

- The Project would not include park and recreation space consistent with adopted General Plan goals, policies and implementation measures as well as the requirements of the Carson Municipal Code.

c. Impact Analysis

(1) Project Design Features

Common and private open space would be provided throughout the residential areas of the Project site. Per the requirements of the Specific Plan, private open space would be provided at a 60 square-foot minimum per dwelling unit with a minimum dimension of five feet in any direction. Common open space would be provided at the rate of 300 square-foot minimum per unit in District 3; 200 square-foot minimum per ownership unit in District 1; and 150 square-foot minimum per rental unit in District 1. Common open space for each unit would have a minimum dimension of 10 feet in any direction. The Project would also use the existing berm along the southern and southwestern edges of the Project site, adjacent to the Torrance Lateral as common open space. This approximately 9-acre area would be landscaped with a combination of trees, shrubs and groundcovers, and would provide a buffer between Project development and off-site residential development to the south. Further, the Project would be required to meet park and open space requirements through a combination of land dedication, improvements, private recreation, and in-lieu fees per Section 9207.19 of the Municipal Code. Recreational amenities for use by the Project's residents would also contribute to the Project's common open space provisions. Specifically, to meet the recreational needs of Project residents, a health club is proposed on the ground floor of the multi-family apartment buildings.

The proposed Project would contain a shopping and entertainment component which would make up a large portion of the central area of Districts 1 and 2. This area is conceptually proposed to include a plaza with water features, outdoor dining and other pedestrian-oriented amenities, which would be available to the general public and serve as gathering spaces in the

central area of the Project. Further, commercial structures area also conceptually proposed to be clustered in such a way as to create plazas and pedestrian malls.

The Project's proposes pedestrian and bicycle routes to provide maximum connectivity for pedestrians and bicyclists between the diverse uses within the Project site. External bicycle access to the Project site would primarily occur via Class II (separate lanes) and Class III routes, along Main Street and Del Amo Boulevard. Pedestrian access to the Project site would also occur via sidewalks on these same streets. Multipurpose paths (with side-by-side paths for pedestrians and bicycles) are proposed both at the Project's Del Amo entrance and from Avalon Boulevard into the Project's southeastern entrance. Internally, bicycle circulation would be provided along the Loop Road via Class II bicycle lanes and along the Corridor Road via a Class III bicycle route. Pedestrian circulation would be provided throughout the Carson Marketplace via sidewalks and pathways. The routing of pedestrian and bicycle circulation is conceptually shown in Section II., Project Description, on Figure 6 on page 87.

(2) Project Impacts

(a) Park and Recreational Facilities

As the Project is located at the site of a former landfill, landscaped areas would be limited onsite, and the recreational activities of the Project's residents are anticipated to occur predominantly off-site. Park and recreational facilities in the City of Carson include 16 public parks, one county park and two public golf courses. Of these parks and recreational facilities, 12 have been identified by the City as being those that could be used by Project residents, due to their proximity. Due to the varying amenities available and the geographical distribution of the identified parks and recreational facilities, Project demand would likely be met via several facilities. Therefore, as usage would be distributed throughout a number of different parks and recreational facilities, a significant impact is not anticipated to occur at any one facility.

According to the City's General Plan, park area is currently provided at a ratio of 3.5 acres per 1,000 residents Citywide. This ratio does not meet the City's target ratio of four acres of park area per 1,000 persons. The additional population generated by the proposed Project would cause the existing ratio to decline incrementally, thereby, further contributing to the City's shortfall in the provision of park area relative to the four acre standard. However, as the Project's residents would constitute a small percentage of the City's population, implementation of the Project would not cause a decline in the park area to resident ratio such that significant impacts would result. Further, the City's target ratio of four acres of park area per 1,000 persons has been identified as a target, but at this time has not been codified or set forth in the goals, policies, or implementation measures identified in the Parks and Recreation Element; thus, the Project would not conflict with the provisions specified in the City's General Plan.

Section 9207.19 of the Municipal Code, as authorized under the State Quimby Act, applies to new residential subdivisions and requires that every subdivider dedicate a portion of land, or pay a fee, or a combination of both. Currently, the amount of land required to be dedicated equals the proportionate amount necessary to provide three acres of park area per 1,000 residents. However, as previously discussed, the City's new target ratio is four acres per 1,000 residents. If a proposed revision of Ordinance No. 94-1048, fees and/or dedication requirements is adopted, the requirements would be recalculated to reflect that.

Park acreage requirements are determined by the type of dwelling unit to be constructed and the population density per unit. For the proposed Project, the amount of land required to be dedicated is based on the multiple-family dwelling type consisting of five or more units which assumes a population density of 2.75 persons per unit and presently requires 0.003 acres per person or 0.00825 acres per dwelling unit. In the case of the proposed Project this would equate to a land dedication of approximately 12.80 acres.[138]

As previously discussed, the Municipal Code permits private recreational areas and improvements within a project site to be credited against a project's land dedication requirement. The Specific Plan proposes to meet the currently adopted requirements of Section 9207.19, equivalent to three acres per 1,000 population, through the provision of park space, on-site improvements, and/or, the payment of in-lieu fees. Therefore, the Project would be consistent with Municipal Code requirements and, thus, would have a less than significant impact with regard to the provision of park space.

(b) Open Space

Private open space, as described in the Specific Plan, would be provided at a 60 square-foot minimum per dwelling unit with a minimum dimension of five feet in any direction. Common open space would be provided at the rate of 300 square-foot minimum per unit in District 3; 200 square-foot minimum per ownership unit in District 1; and 150 square-foot minimum per rental unit in District 1. Common open space for each unit would have a minimum dimension of 10 feet in any direction. The provision of open space within a development complements the provision of park area as private open space accommodates the needs of Project residents, while common open space meets a variety of purposes including space for recreational activity, and space for scenic and landscaping treatments. Some or all of such space may be provided in a manner that would contribute to park and recreation space pursuant to Section 9207.19 of the Municipal Code, as described above.

[138] *1,550 Project dwelling units multiplied by 0.00825 acres per unit as required by the Municipal Code.*

The Project's proposed provision of 60 sq.ft. of private open space per unit is less than the square footage minimums required by Sections 9128.54 and 9128.15 of the Municipal Code; i.e., 150 square feet per multiple bedroom unit and 130 square feet per one bedroom or zero bedroom unit. While the Project provides less private open space than that required by the Municipal Code, the Project conceptually proposes to include other amenities that would serve residents, e.g. health clubs on the ground floor of the multi-family apartment buildings. To assure that the intent of the Municipal Code is met with regard to the provision of private open space, a mitigation measure is proposed to address this potentially significant impact.

As previously discussed, Common open space would be provided at the rate of 300 square-foot minimum per unit in District 3; 200 square-foot minimum per ownership unit in District 1; and 150 square-foot minimum per rental unit in District 1. Common open space for each unit would have a minimum dimension of 10 feet in any direction. With 1,550 dwelling units, this would equate to 315,000 sq.ft., or 7.23 acres at Project buildout. The Project would also use the existing berm along the southern and southwestern edges of the Project site, adjacent to the Torrance Lateral as common open space. This approximately 9-acre area would be landscaped with a combination of trees, shrubs and groundcovers, and would provide a buffer between Project development and off-site residential development to the south.

Pursuant to Section 9126.28 of the Municipal Code, as the residential component of the proposed Project would be greater than one acre in size, at least 40 percent of the net land area would be required to be devoted to usable open space. In addition, pursuant to Section 9191.422 of the Municipal Code, any grade steeper than 5% can not be classified as useable open space. The Project as proposed would develop approximately 26.1 acres with residential uses. This would equate to a 10.44-acre requirement for the Project.[139] The Specific Plan requires that at least 40 percent of common and private open space must be usable for recreation, which is defined as open space with an average gradient of not more than five percent and excludes sidewalks within the public right-of-way and landscaped areas other than turf. Usable open space may include, but is not limited to, balconies, terraces, roof gardens, children's playgrounds, pools, clubhouses, and landscaped setbacks.

In order to meet the 10.44-acre requirement, an additional 3.21 acres would be required over the 7.23 acres that would occur per the square-footage per unit requirements described above. While the Applicant has proposed various features to contribute to meeting the 10.44-acre requirement, the amount of such space has not been determined at this time. Therefore, it is concluded that a significant impact may occur regarding the provision of common open space, and a mitigation measure is recommend below, to require that the common open-space standard be met.

[139] *26.1 acres x 40 percent = 10.44 acres*

4. MITIGATION MEASURES

Two mitigation measures are proposed to address potential impacts on parks and recreation services. The first measure addresses impacts on public recreation facilities. Even though a significant impact on such facilities is not anticipated, the related measure ensures that the Project's contribution to parks and recreation facilities meets the City's Quimby requirements. The second measure addresses a potentially significant impact that could occur regarding the provision of private open space.

Mitigation Measure I.4-1: The Project shall provide park and recreation facilities pursuant to Section 9207.19, equivalent to three acres per 1,000 population, that would be met through the provision of park space, on-site improvements, and/or, the payment of in-lieu fees.

Mitigation Measure I.4-2: The Project shall meet the intent of Municipal Code Sections 9128.54 and 9128.15 through the provision of private open space as defined therein and/or the provision of additional amenities that meet the recreational needs of Project residents, e.g., health clubs.

Mitigation Measure I.4-3: The Project shall meet the requirements of Municipal Code Section 9126.28 by demonstrating that the Project's common open space area meets the 40% standard established therein.

5. CUMULATIVE IMPACTS

Section III.B of this Draft EIR provides a list of the related projects that have the potential to occur concurrent with the development of the proposed Project. Of the 36 related projects, 17 are residential in nature or contain a residential component (i.e., Related Project Nos. 2, 3, 8, 12-20, 23, 30, 33, and 35). A total of 609 dwelling units are anticipated to be constructed with implementation of the above-listed related projects; 163 single-family and 446 multiple-family units. Land dedication requirements for the related projects were calculated based on the land dedication factors set forth in the Carson Municipal Code for each dwelling unit type. To meet the current requirements set forth in Section 9207.19 of the Carson Municipal Code, roughly 5.6 acres of land would be required for dedication or in-lieu payments as applicable. In addition, the related projects would be subject to Carson Municipal Code Section 9126.28 with regard to the provision of open space. The application of the Municipal Code would avoid inconsistency with the adopted General Plan goals, policies and implementation measures, As each related project would comply with the requirements established in the Carson Municipal Code, the potential park and open space impacts of the related projects would be reduced to levels that are less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Potential significant impacts to park and recreational facilities associated with the proposed Project, based on the maximum requirements established via the Carson Municipal Code, would be reduced to a less than significant level via compliance with Mitigation Measure I.4-1. A potentially significant impact with regard to the provision of private open space would be met through mitigation measure I.4-2. The potentially significant impact with regard to the provision of common open space would be reduced to a less than significant level via Mitigation Measure I.4-3. No identified significant impacts were identified regarding inconsistency with the adopted General Plan goals, policies and implementation measures, nor open space requirements established in the Municipal Code. Thus, the Project would meet the demand for services as addressed through those provisions. Therefore, potential impacts to park and recreational facilities attributable to the proposed Project would be less than significant.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
5. LIBRARIES

1. INTRODUCTION

This section addresses potential Project impacts on the facilities and services administered by the County of Los Angeles Public Library system. The analysis focuses on whether available library capacity is sufficient to accommodate the population growth generated by the proposed Project.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

The City of Carson is served by the County of Los Angeles Public Library (County Library) system. The County Library is a special fund department under the jurisdiction of the County Board of Supervisors. The County Library system is financed primarily by a dedicated share of property tax from its service area, with other revenues including a general fund contribution, a parcel tax, grants, and fees. Budgeted expenditures are $24.48 per capita for fiscal year 2003/04. Supplemental funds are raised by the Los Angeles County Public Library Foundation. The County Library serves 51 of 88 cities and most unincorporated areas in the County of Los Angeles.[140] The County Public Library belongs to the South State Cooperative Library System, and is an affiliate member of the Metropolitan Cooperative Library System (MCLS), an association of public libraries in the greater Los Angeles area that shares resources to improve library service to the residents of all participating jurisdictions.

b. Existing Conditions

The proposed Project is within the service area of the Carson Regional Library (Carson Library), a 33,112 square foot facility, located approximately 1.5 miles south of the Project site at 151 East Carson Street. The Carson Library service area includes the southern half of the City and nearby unincorporated areas of the County. Based on 2000 Census data, the current service population for the Library is 98,661. As shown in Table 65 on page 501, the Library is 33,112 square feet in size and employs 12 full-time staff and 24 part-time staff. The Carson Library has

[140] *Los Angeles County Public Library website, http://www.colapublib.org/about/info.html, accessed June 1, 2005.*

Table 65

Carson Regional Library Facilities

Staffing	Collection Size	Facility Size	Service Population	Hours of Operation
12 full time 24 part time	255,389	33,112 sq. ft.	98,661	10: 00 A.M. to 8:00 P.M. Mon. - Thurs, 10: 00 A.M. to 6:00 P.M. Fri, 10: 00 A.M. to 5:00 P.M. Sat, and 10: 00 A.M. to 1:00 P.M. Sun

[a] *County of Los Angeles Public Library*
Source: PCR Services Corporation.

a collection size of 255,389, consisting of items such as books, audio and video materials, DVD's, pamphlets, periodicals and government documents. Amenities offered at the Library include public access to the internet and online catalogs, CD-ROM workstations, a Government Services computer, a public meeting room, a Consumer Health Program and Services, a Homework Center, an Adult Literacy Center, pre-school storyhours, and a reader's advisory service.[141]

Other Los Angeles County libraries within five miles of the site that could potentially serve Project residents include the Victoria Park Library, the Lomita Library and the Gardena Mayme Dear Library. The Victoria Park Library is located approximately two miles northeast of the Project site at 17906 South Avalon Boulevard. The library is 4,580 square feet in size and presently has a collection of 42,215 library materials consisting of 37,834 books, 31 periodicals, 2,450 videos, CDs and 1,900 audio cassettes.[142] The Lomita Library is located to the southwest of the Project site at 24200 Narbonne Avenue in the City of Lomita and the Gardena Mayme Dear Library is located northwest of the Project site at 1731 W. Gardena Boulevard in the City of Gardena. The Lomita Library is 7,500 square feet in size, while the Gardena Mayme Dear Library has 16,439 square feet of floor area.

3. PROJECT IMPACTS

a. Methodology

The demand for library services is typically determined based on the size of the resident population a library serves. As increases in population result in the need for additional facility space and library materials, the impact of the Project on library services is based on the ability of

[141] *County of Los Angeles Public Library, Fax to PCR July 19, 2005.*

[142] *County of Los Angeles Public Library website, http://www.colapublib.org/libs/victoria/, accessed July 20, 2005.*

the existing or planned library facilities to serve the estimated residential population generated by the Project. The assessment of potential Project impacts on library facilities is determined based on the following steps: (1) identify the primary service library that would serve the Project site; (2) forecast the number of residents generated by the Project and; (3) estimate the Project's demand for library services and facilities. The analysis is limited to the Project's potential impacts on the Carson Library as the Project site has been identified by the County Library as being within its service boundaries.

b. Significance Thresholds

The proposed Project would have a significant impact on library services if the Project would generate a demand for library facilities or services that would exceed available resources.

c. Analysis of Project Impacts

(1) Project Impacts

The analysis of potential Project impacts on library services is based on the following planning guidelines established by the Los Angeles County Library system: 2.75 - 3.0 library items per capita; 2.5 reader seats, 2.0 meeting room seats (minimum of 75 seats), and 1.0 computer per 1,000 residents; 0.5 gross square feet per capita for facility space; and 1.0 standard size parking space for each 250 gross square feet of facility space.[143] These guidelines are applied to the projected increase in population attributable to the Project.

Based on County Library guidelines, the Carson Regional Library users are currently under served in terms of facility size and library material items, with approximately 0.34 square feet of facility space and 2.6 library items per capita, thereby, not meeting the County Library minimum guidelines of 0.5 square feet of facility space and 2.75 library items per capita. Therefore, any additional increase in the Library's service population would create a significant impact on its services and facilities. Currently, there are no immediate plans to improve or expand the Library.[144] The proposed Project is conservatively forecasted to generate a residential population of 6,969 persons. As shown in Table 66 on page 503, according to the County Library guidelines, the proposed Project would generate the need for 3,485 square feet of library facility space, 19,165 library collection items, 17 reader seats, 75 meeting room seats,[145] 7 public access computers, and 14 standard size parking spaces. Thus, without the incorporation of mitigation measures, the Project may have a potentially significant impact on library services as

[143] *County of Los Angeles Public Library, Fax to PCR August 25, 2005.*

[144] *County of Los Angeles Public Library, Fax to PCR July 19, 2005.*

[145] *Although the Project would only generate the need for 14 seats, a minimum of 75 seats are required as per County Library guidelines.*

Table 66

Library Facilities Required by the Proposed Project

Library Facilities	Guidelines	Project Resident Population	Resources Required
Facility Size	0.5 gross square foot per capita	6,969	3,485 square feet
Collection Size	2.75 items per capita	6,969	19,165 items
Reader Seating	2.5 seats per 1,000 persons	6.969	17 seats
Meeting Room Seating	2.0 seats per 1,000 persons	6.969	14 seats
Public Access Computers	1.0 per 1,000 persons	6.969	7 computers
Parking	1 space per 250 gross square feet	3,485 square feet	14 spaces

Source: PCR Services Corporation based on County of Los Angeles Public Library Guidelines, September 2005.

the use of the Library by the Project's residents would contribute further to the current over-utilization of the Library's services and facilities. The Project Applicant has proposed to pay a fair share contribution for library improvements to off-set its impacts on the Library.

4. MITIGATION MEASURES

Though the Project is not statutorily required to pay library developer fees, as the Project would have significant impacts on the County Library system, which utilizes developer fees to mitigate impacts within the unincorporated areas of Los Angeles County, the following mitigation measure will apply:

Mitigation Measure I.5-1: The Applicant shall pay a fair share contribution for the improvement of library facilities that are required to off-set impacts of the Project, subject to approval of the County of Los Angles Public Library.

5. CUMULATIVE IMPACTS

The related projects identified in Section III.B of this Draft EIR, would construct a total of 609 dwelling units within the City of Carson. As the service area for the Carson Regional Library is limited to the southern half of Carson and nearby unincorporated areas of the County, about half of these units are located both within the City of Carson and in the Carson Library service area. Based on the City's average household size of 3.59, these residential units would generate a total of roughly 1,077 residents.[146] As shown in Table 67 on page 504, the development of the related projects would create additional demand on the Carson Library's

[146] *2000 Census data*

Table 67

Library Facilities Required by Related Projects

Library Facilities	Guidelines	Related Projects Resident Population	Resources Required
Facility Size	0.5 gross square foot per capita	1,077	539 square feet
Collection Size	2.75 items per capita	1,077	2,962 items
Reader Seating	2.5 seats per 1,000 persons	1,077	3 seats
Meeting Room Seating	2.0 seats per 1,000 persons	1,077	2 seats
Public Access Computers	1.0 per 1,000 persons	1,077	1 computer
Parking	1 space per 250 gross square feet	539 square feet	2 spaces

Source: PCR Services Corporation based on County of Los Angeles Public Library Guidelines, September 2005.

facilities and services. With the addition of the proposed Project's estimated population of 6,969, there would be approximately 8,046 new residents in the City of Carson and within the Carson Library service area. As the Carson Library currently under serves its existing population, population growth attributable to the related projects in addition to population growth associated with the proposed Project would cause the Carson Regional Library to further exceed the County guidelines for the provision of library facilities. In sum, the combined residential population would create the need for an additional 4,023 square feet of facility space, 22,127 library material items, 20 reader seats, 16 meeting room seats, 8 computers, and 16 parking spaces. Thus, the development of the identified related projects would result in a significant impact on library services due to lack of available capacity to meet the demand for library services. As the Project would off-set its impacts through the fair share payment of fees, the Project would not contribute to a significant cumulative impact on library services. Notwithstanding, since the extent to which other projects would off-set their impacts is unknown, it is conservatively concluded that the impacts of the identified related projects on library services would be significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Through the voluntary payment of fees, Project impacts would be reduced to a less than significant level.

IV. ENVIRONMENTAL IMPACT ANALYSIS
J. UTILITIES
1. WATER SUPPLY

1. INTRODUCTION

This section addresses the potential impacts of the Project on the water supply and water distribution infrastructure systems. This analysis estimates domestic water demands of the Project and compares this demand to existing and planned water supply sources and conveyance facilities.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

(1) State Level

Title 20 of the California Administrative Code, (CAC) Section 1604, establishes efficiency standards (i.e., maximum flow rates) for all new showerheads, lavatory faucets, and sink faucets, and prohibits the sale of fixtures that do not comply with the regulations.

Other applicable State water conservation laws include:

- Health and Safety Code Section 17921.3 requires all new buildings, as of January 1, 1983, to install water conservation water closets, as defined by American National Standards Institute (ANSI) Standard A112.19.2, and urinals and associated flushometer valves that use less than an average of 1.5 gallons per flush.

- Title 20, CAC, Section 1604(f) establishes efficiency standards that give the maximum flow rate of all new showerheads, lavatory and sink faucets, as specified in ANSI A112.18.1M-1979.

- Title 20, CAC, Section 1606(b) prohibits the sale of fixtures that do not comply with regulations.

- Title 24, CAC, Section 2-5307(b) prohibits the installation of fixtures unless the manufacturer has certified compliance with the flow rate standards.

- Title 24, CAC, Section 2-5352(i) and (j) address pipe insulation requirements that can reduce water used before hot water reaches fixtures.

The California Urban Water Management Planning Act requires every municipal water supplier who serves more than 3,000 customers or provides more than 3,000 acre-feet per year (AF/yr) of water to prepare and adopt an Urban Water Management Plan (UWMP). UWMPs are required to include estimates of past, current, and projected potable and recycled water use, identify conservation and reclamation measures currently in practice, describe alternative conservation measures, and provide an urban water shortage contingency plan. UWMPs must be developed every five years to identify short-term and long-term water demand management so as to meet growing water demands during normal, dry, and multi-dry years. The California Water Services Company (CWS), the water supplier serving the proposed Project site and its vicinity, has met its obligation to prepare a UMWP with the most recent version being published in January 2003.

Additional State legislation, Senate Bill 221 (Kuehl) and Senate Bill 610 (Costa), expands upon the requirements of the California Urban Water Management Planning Act. Senate Bill 610 recognizes the need to link water supply and land use planning as currently required by Section 10910 of the Water Code. Under certain circumstances, a city or county is required to request in conjunction with a development project a water supply assessment containing specific information from the water service provider.

Under SB 610, it is the responsibility of the water service provider to prepare a water supply assessment requested by a city or county for any "project" defined by Section 10912 of the Water Code that is subject to CEQA. The bill prescribes a timeframe within which a public water system is required to submit the assessment to the city or county and authorizes the city or county to seek a writ of mandamus to compel the public water system to comply with the requirements relating to the submission of the assessment. If the provider determines that water supplies are, or will be, insufficient, plans must be submitted for acquiring additional water supplies. Additionally, the bill requires a city or county to include the water supply assessment and other pertinent information in any environmental document prepared (e.g., EIR) for the project pursuant to the act. CWS, as a water service supplier, has incorporated the provisions of SB 610 into its water supply planning process. Under Senate Bill 610, a water supply assessment must be evaluated and approved for larger projects (i.e., residential projects with more than 500 dwelling units, shopping centers employing more than 1,000 persons or having more than 500,000 square feet of floor space, or commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space). The approved water supply assessment, which evaluates the quality and reliability of existing and projected water supplies, as well as alternative sources of water supply and how they would be secured if needed, must be incorporated into the EIR for individual projects. Based on the quantity of development proposed, a water supply assessment for the Project was prepared and certified by the CWS.

Senate Bill 221 requires "written verification" of water availability for large subdivision projects. It is distinct from Senate Bill 610, but requires a similar demonstration of water availability.

(2) Local Level

The City of Carson General Plan Open Space and Conservation Element and the Land Use Element have also identified measures to conserve water, promote use of reclaimed water, and protect water quality, including the following policies:[147]

Policy OSC-2.2 Continue to monitor land uses discharging into water sources and water recharge areas to prevent potential contamination from hazardous or toxic substances.

Policy OSC-2.2 [*sic*] Minimize soil erosion and siltation from construction activities through monitoring and regulation.

Policy OSC-2.3 Conserve the water supply available to the City and promote water conservation in the management of public properties.

Policy OSC-2.4 Educate citizens about water conservation, encourage its practice, and monitor its effectiveness.

Policy OSC-2.5 Facilitate the completion of the infrastructure of the reclaimed water facility in the City of Carson.

Policy OSC-2.6 Encourage the use of reclaimed water in applications for which potable water is not necessary.

Policy LU-15.7 Provide for efficient use of water through the use of natural drainage, drought tolerant landscaping and use of reclaimed water, efficient appliances and water conserving plumbing fixtures.

Furthermore, the City of Carson adopted the "Water Efficient Landscape Ordinance," which outlines water conservation measures, goals and objectives (Carson Municipal Code, Section 9168.1). The Ordinance includes measures such as preparation of a landscape plan (for projects that contain landscaped areas over 2,500 square feet) that incorporates water-efficient

[147] *City of Carson General Plan, Chapter 8 Open Space and Conservation Element, Section 4.0 Planning Issues, Goals, Policies and Implementation and Chapter 2 Land Use, Section 5.0 Planning Factors, Goals, Policies, and Implementation.*

irrigation designs and drought tolerant plantings, as well as regular water-consumption audits and water-waste prevention techniques.

b. Existing Conditions

(1) Water Service Capacity

Water service in the City of Carson is provided by the California Water Service Company (formerly Dominguez Water Corporation) and the Southern California Water Company (SCWC). The Project site is served by California Water Service Company (CWS), which serves a 35-square-mile area including most of the City of Carson. This investor-owned public water utility obtains its water supplies from two principal sources: (1) local groundwater; and (2) purchased imported water.

There are two groundwater basins which underlie the City Carson: the Central Water Basin and the West Coast Basin. Groundwater in the Central Basin is dependent upon local storm runoff, imported and recycled water for groundwater recharge, and the injection of imported water from the inland side of the Alamitos Seawater Intrusion Barrier. The Central Basin is also replenished through subsurface flows from the San Gabriel Valley into the Basin and precipitation that falls directly on the Montebello Forebay and percolates into the Basin.[148]

Groundwater for the West Coast basin originates from subsurface flow from the Central basin and injection along the sea water barrier system. Virtually all of the major drainage courses flowing through the Central and West Coast Basins have been developed into a comprehensive system of dams, flood control channels, and percolation ponds for artificially recharging the basins.

Imported water is purchased from the Metropolitan Water District of Southern California (MWD) through a member agency, the West Basin Municipal Water District (WBMWD).[149] CWS has eight direct MWD service connections and one indirect MWD service connection. CWS also participates in the MWD-sponsored "In-Lieu" Water Programs, whereby water suppliers purchase imported water from MWD at a reduced rate instead of pumping groundwater. The non-pumped groundwater then stays in the basins for use in the future when imported water may not be as plentiful.

[148] *City of Carson General Plan, Chapter 8 Open Space and Conservation Element Section 3.21 Water Resources.*

[149] *City of Carson General Plan, Chapter 4 Transportation and Infrastructure Element.*

The total number of CWS customers is projected to grow approximately 6.2 percent from 1995 to 2015.[150] Future shifts in water demand most likely would result from either the expansion/downsizing of major industrial customers, new industrial customer growth and the introduction of recycled water. To meet water demands for the next decade, the company will rely on a mix of ground, imported, desalinated and recycled water sources. Approximately 80 percent of the water supply distributed by CWS is comprised of imported water, 18 percent is groundwater, and 2 percent desalinated water.[151] CWS projections indicate that, under normal precipitation conditions, it will have sufficient water supplies to meet annual customer water demand through 2015.[152] This is based on the continuation of conservation programs, on desalinated and recycled water becoming available, and on planned efforts to emphasize groundwater supplies and to reduce reliance on imported water sources.

(2) Existing Infrastructure

The CWS water infrastructure is a combined domestic and fire water supply system that is an integrated network of pipelines located in City streets. The larger mains range in size from 12 to 42 inches in diameter. Several residential areas have mains less than 6 inches in diameter. However, these mains provide sufficient flow for both normal use and Fire Department fire flow requirements. A 6-inch diameter main is the minimum size presently installed per California Public Utilities Commission Regulation. Currently there are no additional facilities planned.[153] New customers are either connected to existing mains or are required to pay for installation of facilities required to provide service.

The exiting water distribution system within the vicinity of the Project site is shown in Figure 40 on page 510. As indicated, the Project site is served by a 16 inch concrete lined and coated main along Del Amo Boulevard and by a 12 inch main on Main Street. There are also secondary feeds from the two main lines that provide service into the interior of the Project site and that could be used to serve the current Project if determined to be appropriate for the uses and requirements of the currently proposed development program. Within the Project site, the water system consists of 12-inch PVC water mains buried under Stamps and Lenardo Drives, the existing on-site access roads within Districts 1 and 2. This backbone distribution of mains and

[150] *Ibid.*

[151] *City of Carson General Plan, Chapter 8 Open Space and Conservation Element, Section 3.21 Water Resources.*

[152] *City of Carson General Plan, Chapter 4 Transportation and Infrastructure Element.*

[153] *Carson General Plan Environmental Impact Report October 30, 2002.*

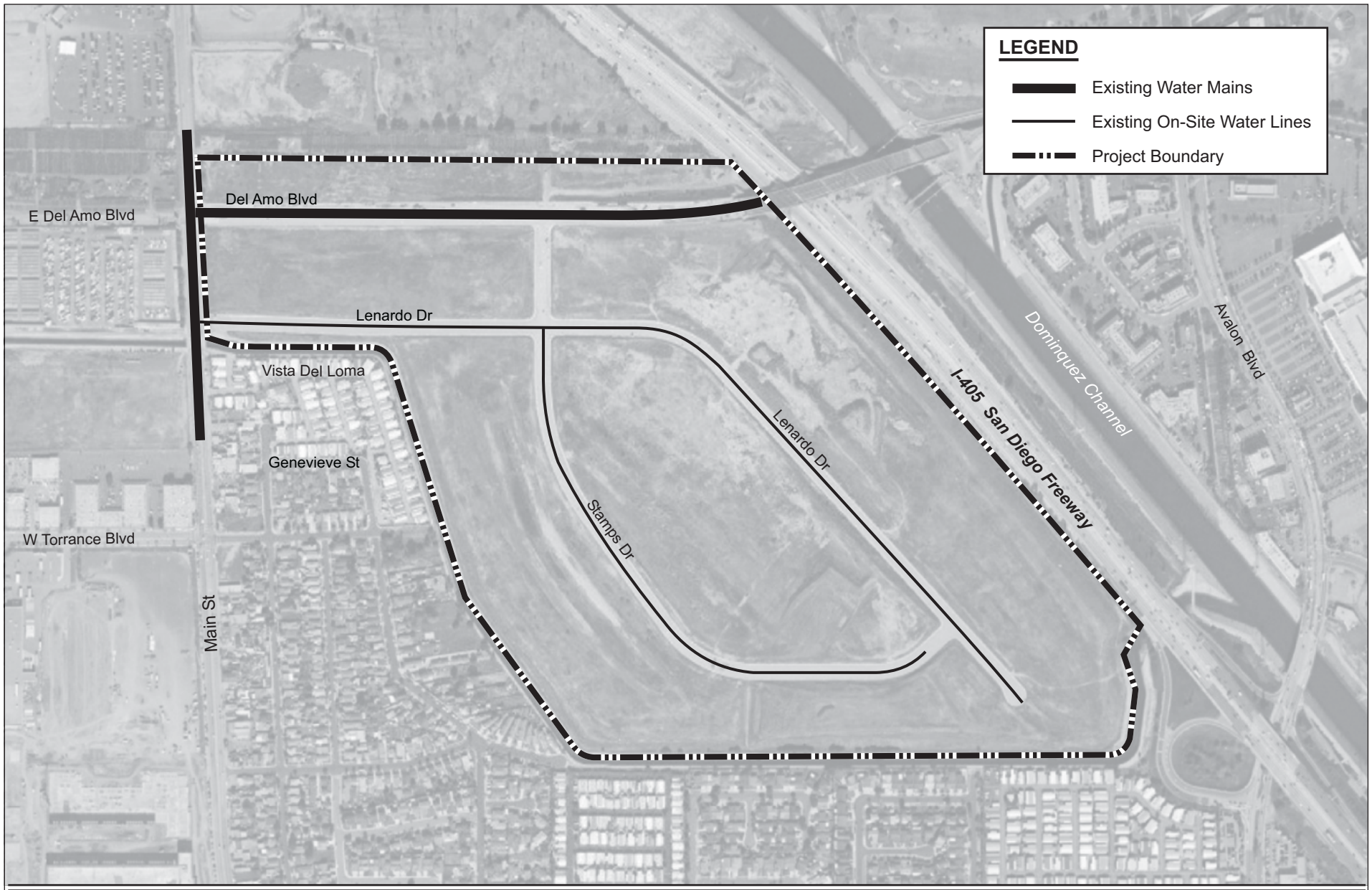

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Figure 40
Existing Water Mains

fire hydrants was engineered for future commercial/industrial uses and was approved by the Los Angeles County Department of Public Works.[154]

There is a backbone reclaimed water system in place on the northern side of the I-405 Freeway and Dominguez Channel, which is operated by the West Basin Municipal Water District (WBMWD). The WBMWD currently implements a program for water recycling in the South Bay area. Recycled water can be used for landscape irrigation, cooling towers, and refineries, as well as street sweeping and toilet flushing. The WBMWD's Harbor/South Bay Water Recycling Project, slated for completion in 2010, aims to further the program's development of local water resources and diversification of the "portfolio" of water supply, in order to reduce the region's dependence on imported water.[155]

3. PROJECT IMPACTS

a. Methodology

The analysis of potential impacts to water resources was based on the increase in demand resulting from the proposed Project relative to the capacity of the existing water distribution and water supply systems as well as the ability to provide the required domestic water for the Project. The water supply required to serve the Project was determined by applying water-generation factors to the types and amounts of development that would be included in the proposed Project. The ability of the infrastructure to serve the Project site was evaluated by comparing the service capabilities of the water supply infrastructure to the requirements of the proposed site uses and populations.

b. Thresholds of Significance

The proposed Project would have a significant impact if:

- The total estimated water demand for the Project at buildout would exceed available supplies or distribution infrastructure capabilities (i.e., water infrastructure); or
- The Project would exceed the projected employment, housing, or population growth projections assumed in the planning for future water infrastructure needs.

[154] *Information based on the Dominguez District's Plat Sheet, as confirmed by the California Water Service Company: Phone call with Terry S. Tamble, District Manager, August 8, 2005.*

[155] *The West Basin Municipal Water District Website at http://www.westbasin.org/recycle_project.php.*

c. Project Design Features

The proposed Project would provide an on-site water supply system that would connect with the existing water mains in Del Amo Boulevard and Main Street. The on-site system may include use of the existing lines in Lenardo Drive and Stamps Drive, or may replace these lines with lines better suited to the currently proposed development. New water lines would be sized to meet the fire flow requirements, as well as Building Code standards of the County of Los Angeles. The Carson Marketplace Specific Plan states that a reclaimed water infrastructure system will be provided, if feasible. The proposed development would implement water conservation methods such as ultra low-flow toilets, low-flow showerheads, low-flow fixtures and water saving appliances, as required by existing regulations.

d. Project Impacts

(a) Construction

During construction, water would be used for dust suppression, the mixing and pouring of concrete, and other construction-related activities. The majority of water use during construction would be associated with dust suppression during excavation. This is generally performed by water trucks which derive non-potable water from offsite sources. As such, the impact on treated water from the CWS would be incrementally small and the impact on adjacent water conveyance systems would not occur. As such, no significant impact is anticipated to occur due to Project construction activities because the water demands associated with construction activities would not exceed available supplies or the distribution infrastructure.

The Project's on-site water system would be developed during the construction of the Project, subsequent to implementation of the remediation cap and site grading, and prior to the construction of new buildings. The system may require new tie-ins to the existing water mains in Main Street and Del Amo Boulevard; particularly if existing on-site lines in Stamps Drive and Lenardo Drive are not used. If such new connections are required, Project construction would require construction activity within the Del Amo Boulevard and Main Street rights of way. This would result in secondary, short-term construction impacts, Interruptions to water service can often be avoided, however, on occasion very short term interruptions, e.g. a few hours, may occur. Traffic disruption may also occur for trenching, backfilling, and repaving of the affected roadway. The analysis of Project impacts on traffic includes a discussion of construction impacts, and recommends a Traffic Management Plan as a mitigation measure. With implementation of these measures, short-term impacts on traffic would be less than significant.

(b) Operation

(1) Water Use and Supply

The proposed Project includes a mix of development uses that would require the use of domestic water supplies for daily operations. The estimated water demand for the Project at buildout is presented in Table 68 on page 514.

As indicated, the average daily consumption is estimated to be 795,470 gallons per day or 552 gallons per minute. Assuming the average daily demand for water is extended over 365 days per year, the projected annual consumption would be 290.5 million gallons, or 892 acre-ft/year. This is 42.3% of the forecasted growth in demand for the Dominguez District, 1,880,000 gallons per day, that is expected to occur between 2005 and 2010. The estimated maximum daily water demand would 1,193,000 gallons/day or 829 gallons per minute.[156]

The Project would also require the availability of water service to support a system of hydrants for fire fighting capabilities. The delivery of water to the Project site would occur via the mains located in Main Street and Del Amo Boulevard, and through the Project's on-site infrastructure. The ability of the infrastructure to meet fire flow requirements, the critical factor in the delivery of water to the Project site, is discussed further below.

The Project falls within Senate Bill 610 size criteria in which a water supply assessment (WSA) must be evaluated and approved by the CWS. Accordingly, a WSA has been prepared relative to the water consumption identified in Table 68. (See Appendix H of this Draft EIR)[157] The assessment provides a detailed analysis of the availability and conveyance of the water required to serve the Project site. The CWS, based on the results of the WSA, has concluded that the needed quantities of water, and its conveyance to the Project site are sufficient to meet Project needs. As stated in the WSA, "Cal Water believes it will have adequate water supplies to meet the projected demands of the Carson Marketplace in addition to those of its existing customers and other anticipated future water users in the Dominguez District for the 20-year period from 2005 and 2025 under normal, single dry year and multiple dry; year conditions." Therefore impacts on water supply would not exceed the significance threshold identified above, and Project impacts on water supply would be less than significant.

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[156] *Water Supply Assessment Report for the Carson Market Place [sic] Project, California Water Service Company, August 11, 2005, page 5; based on conversion of the average demand to a maximum demand, using a factor of 1.5, a typical factor experienced in various Cal Water Districts.*

[157] *Water Supply Assessment Report for the Carson Market Place [sic] Project, California Water Service Company, August 11, 2005.*

Table 68

Projected Water Demand

Use	Units/Size	Average Daily Flow[a] (gal/day)	Annual Generation (million gal/year)[b]
Proposed Project			
Residential	1,550 units	315,000	115.0
Neighborhood Commercial	130,000 sq.ft.	42,680	40.7
Restaurant	81,125 sq.ft.	89,240	32.6
Hotel (300 rooms)	200,000 sq.ft.	41,400	15.1
Commercial Recreation/Entertainment	214,000 sq.ft.	28,600	10.4
Regional Commercial	1,370,000 sq.ft.	278,550	76.5
Total	**1,995,125 sq.ft.**	**795,470**	**290.3**

[a] *Generation factors and calculations of the Project's water consumption are presented in the Water Supply Assessment, Appendix H of the Draft EIR.*

[b] *Annual water consumption assumes 365 days of operation a year.*

Source: PCR Services Corporation, June 2005.

The actual consumption of domestic water supply may be reduced from that considered in this analysis if a recycled water system is used for irrigation and/or on-site water features. The Specific Plan states that a reclaimed water infrastructure system will be provided, if feasible. At this time the WBMWD's Harbor/South Bay Water Recycling Project is not providing recycled water to the Project site. Implementation of such a system would support City policies for reducing water consumption. However, Project impacts on water supply would be less than significant without the implementation of such a system. The CWS Urban Water Management Plan is based on very conservative assumptions regarding the amount of recycled water that would be used, system-wide, in the future.

(2) Fire Flow

The water conveyance system at the Project site would be required to meet LACFD fire flow standards. The required flows would be determined at the time site plans are provided, subject to review of buildings, their relationship to other structures, property lines, and types of construction used. The development of commercial/high-density residential development may require fire flows up to 5,000 gallons per minute at 20 pounds per square inch residual pressure for up to a five-hour duration.

The existing water mains are anticipated to be sufficient to meet fire flow requirements, as they are large oversized lines that were originally sized to meet future development needs in the Project area. In any case, such determination would be confirmed through an analysis

performed by CWS at the time a development application has been filed with the City. Further, all new lines included within the development would be sized to meet fire flow requirements.

In summary, the Project's total estimated water demand at buildout would not exceed available supplies or distribution infrastructure capabilities, the Project would not create a significant impact relative to the existing conveyance system, and fire flow would be adequate to meet LACFD requirements. Therefore, the Project would generate a less than significant impact with regard to water supply and water conveyance systems.

4. MITIGATION MEASURES

Although development of the proposed Project is not anticipated to result in significant impacts to water supply services, the following measures would ensure that water resources would be conserved to the extent feasible:

Mitigation Measure J.1-1: The Building Department and the Planning Division shall review building plans to ensure that water reducing measures are utilized, as required by Title 20 and Title 24 of the California Administrative Code. These measures include, but are not limited to, water conserving dishwashers, low-volume toilet tanks, and flow control devices for faucets.

Mitigation Measure J.1-2: The Project shall comply with the City's landscape ordinance, "A Water Efficient Landscape Ordinance," as required by the State Water Conservation Landscape Act.

Mitigation Measure J.1-3: The Applicant shall provide reclaimed water for the Project's non-potable water needs, if feasible.

Mitigation Measure J.1-4: Landscaping of the Project site shall utilize xeriscape (low-maintenance, drought-resistant) plantings.

Mitigation Measure J.1-5: Automatic irrigation systems shall be set to insure irrigation during early morning or evening hours to minimize water loss due to evaporation. Sprinklers must be reset to water less in cooler months and during rainfall season so that water is not wasted on excessive landscape irrigation.

Mitigation Measure J.1-6: The Project shall be designed to recycle all water used in cooling systems to the maximum extent possible.

Mitigation Measure J.1-7: To the maximum extent feasible, reclaimed water shall be used during the grading and construction phase of the Project for the following activities: (1) dust control, (2) soil compaction, and (3) concrete mixing.

Mitigation Measure J.1-8: Water lines and hydrants shall be sized and located so as to meet the fire flow requirements established by the Los Angeles County Fire Department.

5. CUMULATIVE IMPACTS

Section III.B of the Draft EIR identifies 36 Related Projects that may be developed within the vicinity of the proposed Project. Of the 36 Related Projects, 35 are located within the Dominguez District. Related project development is situated such that the water infrastructure that would support the identified related projects would not utilize the water mains in the immediate Project vicinity that would be utilized by the proposed Project. Notwithstanding, these projects would contribute with the proposed Project to the total consumption of water in the service area. The water-relevant related projects unto themselves, as well as in conjunction with the proposed Project, are shown in Table 69 on page 517. As indicated, the Related Projects would consume 1,012,812 gallons of water per day; or 369.6 million gallons per year. With the proposed Project the total consumption would be 1,808,282 gallons per day, or 660.0 million gallons per year. This amounts to approximately 96% of 1,880,000 gallons per day growth in demand that was forecasted to occur in the Dominguez District between 2005 and 2010. The actual demand from the related Projects may vary, as some of these projects may not be developed, or may be developed at a later time. It may also be noted that the total consumption of 1,808,282 gallons per day would be 21% of the 8,440,000 gallons per day growth forecasted to occur through 2025. However, since the amount of cumulative water consumption identified is at the edge of the five year forecast, it is noted that a significant cumulative impact could occur without monitoring and planning pursuant to existing regulations.

As discussed above in Subsection 2.a, Regulatory Framework, CWS, as a public water service provider, is required to prepare and periodically update an UWMP to plan and provide for water supplies to serve existing and projected demands. The UWMP prepared by CWS accounts for existing development within the City, as well as projected growth anticipated to occur through redevelopment of existing uses and the development of new uses. In addition, water supply assessments for large-scale projects, in conformance with Senate Bill 610 (Costa), SB 221 (Kuehl) and the UWMP, evaluate the quality and reliability of existing and projected water supplies, as well as alternative sources of water supply and how they would be secured if needed. A WSA was prepared for the proposed Project by the CWS, which concludes that adequate water supplies are available to meet the proposed Project's potable water demand.

Table 69

Forecast of Cumulative Water Consumption

Land Use	Size	Water Consumption: Average Daily Flow [a] (gallons per day)	Water Consumption: Annual Generation (million gal/year) [b]
Retail[b]	919,207 sq.ft.	179,456	65.5
Residential	588 units	126,126	46.0
Office	1,740,070 sq.ft.	382,815	139.7
Light Industrial	871,192 sq.ft.	191,622	70.0
Churches	30,200 sq.ft.	1,510	0.6
Gym (with Showers)	33,000 sq.ft.	21,780	7.9
Training Facilities	80,000 sq.ft.	20,000[c]	7.3
Hotel	200 rooms	27,500	10.0
Movie Theater	46,000 sq.ft.[d]	6,325	2.3
Childcare	150 children	3,300	1.2
University Expansion	1,479 students	32,538	11.9
Dormitories	240 beds	19,800[e]	7.2
Total Related Projects in Service Area		**1,012,812**	**369.6**
Proposed Project		795,470	290.3
Total Cumulative Water Consumption		**1,808,282**	**660.0**

[a] *Unless noted, these values are based on County Sanitation Districts of Los Angeles County average daily waste generation factors for individual land uses (March 2004) (in gallons per day per 1,000 sq. ft., unless noted), increased by 10% to create the water consumption factors The factors are as follows.: Retail – 150, Residential -195 per unit, Office -200, Light Industrial -200, Churches -45, Gym (with Showers) -600, Hotel- 125 per room, Indoor Theater -125, Childcare – 20 per child, University Growth – 20 per student. (Calculations are provided in Appendix A.)*

[b] *Annual water consumption assumes 365 days of operation a year.*

[c] *A generation factor of 250 gallons per 1,000 square feet for Practice Facilities.*

[d] *Total square footage of the movie theater was calculated based on a 2,000 seat theater and an assumption of 23 sq. ft. per seat.*

[e] *Based on a consumption rate for dormitories of 75 gallons per bed, obtained from the City of Los Angeles waste generation factors (March 2002).*

Source: PCR Services Corporation.

Given that the UWMP plans and provides for water supplies to serve existing and projected needs, including those of future growth and development that may occur through related projects, and that the requirements of Senate Bill 610 and SB 221 provide the means to ensure that the water supply needs of notable development projects have been carefully considered relative to CWS's ability to adequately meet future needs, it is anticipated that CWS would be able to supply the demands of the Project and related projects through the foreseeable future. With implementation of the mitigating regulatory protections, no significant cumulative impacts related to water demand are anticipated.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The total estimated water demand for the Project at buildout is not anticipated to exceed available supplies or distribution infrastructure capabilities (i.e., water infrastructure), or exceed the projected demand assumed in the planning for future water infrastructure needs. No local or regional upgrading of water conveyance systems is anticipated and, as such, no cumulative construction impacts from the development of additional off-site water lines are anticipated. Therefore, no significant unavoidable adverse impacts relative to water consumption are anticipated to occur.

IV. ENVIRONMENTAL IMPACT ANALYSIS
J. UTILITIES
2. WASTEWATER

1. INTRODUCTION

The following section addresses the potential impacts of the proposed Project on local and regional wastewater facilities and infrastructure. The analysis estimates and compares the demand for service to the capacity of the existing and proposed collection, conveyance, and treatment facilities. The Project's consistency with adopted wastewater plans and policies is also addressed.

2. ENVIRONMENTAL SETTING

a. Regulatory Framework

The Los Angeles County Public Works Department (LACPWD) maintains the local sewer lines that run in the street to the trunk sewer lines. Wastewater treatment in the Project area is under the jurisdiction of the County Sanitation Districts of Los Angeles County (the Districts), which is part of the Los Angeles County Department of Public Works. The City of Carson contracts with the Districts to maintain the trunk sewer lines within the City of Carson. The Project site is located within the jurisdictional boundaries of District No. 8.[158]

The Districts are empowered by the California Health and Safety Code to charge a fee for the privilege of connecting to a Sanitation District's sewerage system. These fees are used to provide additional conveyance, treatment, and disposal facilities which are made necessary by new users connecting to the sewerage system, or by existing users who significantly increase the quantity; or strength of their wastewater discharge. The connection Fee Program insures that all users pay their fair share for any necessary expansion of the system.

b. Wastewater Infrastructure

Wastewater generated on the Project site would be treated at the Joint Water Pollution Control Plant (JWPCP), located at 24501 South Figueroa Street in Carson.

[158] *http://www.lacsd.org/cities.htm accessed May 24, 2005*

The JWPCP is part of the Joint Outfall System that provides sewage treatment and disposal for residential, commercial and industrial users within the 17 sanitation districts in Los Angeles County that are participants in the Joint Outfall Agreement. These 17 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 system consists of six treatment plants, over 1,000 miles of trunk sewer lines, 48 pumping plants, and four submarine outfalls. The JWPCP is one of the largest wastewater treatment plants in the world. It serves a population of about 3.5 million people and many industries in southern and eastern Los Angeles County. The JWPCP has a design capacity of 385 million gallons per day (mgd) and currently processes an average flow of 324.9 mgd.[159]

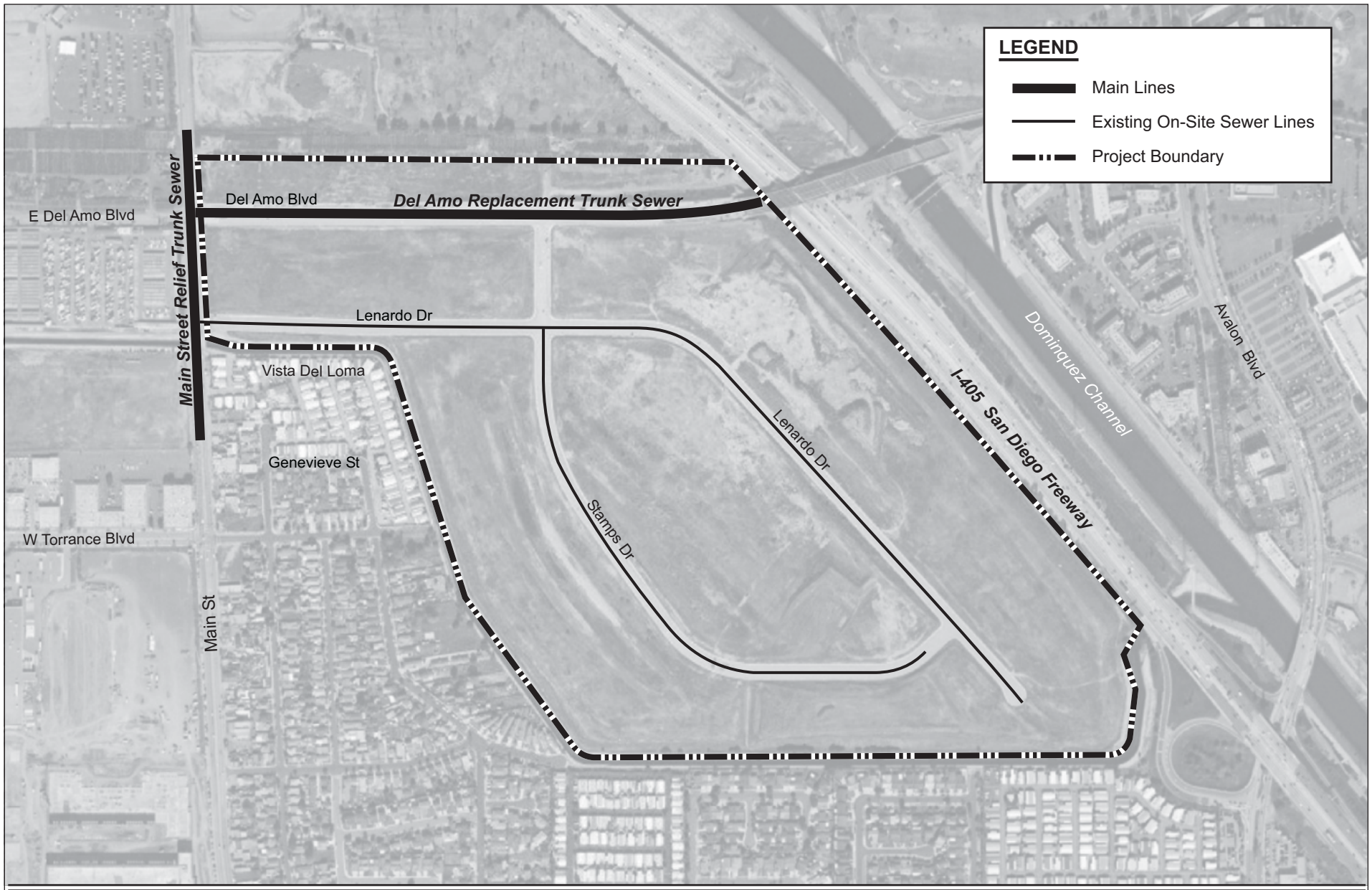
Within the City of Carson most local sewer lines are 8 inches in diameter and there are approximately one dozen trunk lines, ranging in size from 50 inches to 8 feet in diameter, which are generally located as follows: (1) Del Amo Boulevard – running east to west; (2) Main Street – running north to south; (3) Wilmington Avenue – three lines running north to south and two lines running east to west along the railroad tracks; (4) Alameda Street – two lines running north to south and (5) Broadway – two lines running north to south. No new upgrades are currently planned.[160]

The existing district trunk sewers serving the Project site are shown in Figure 41 on page 521. The Districts' Del Amo Replacement Trunk Sewer is located in Del Amo Boulevard between the San Diego Freeway and Main Street. The District was unable to provide capacity information on the Del Amo Replacement Trunk Sewer. However, this is a 42-inch diameter, recently constructed, replacement sewer line with a design capacity of 10.8 mgd. The Main Street Relief Sewer is located in Main Street south of Del Amo Boulevard. This is a 42-inch diameter line with a design capacity of 20.2 mgd. It conveyed a peak flow of 5.8 mgd when last measured in 2003.**[161]** There is also an existing local system of lines located within the Project site that was installed in the 1980s. This system includes lines ranging from eight inches to 18 inches in size that may be used, if appropriate for the proposed development program.

[159] *The County Sanitation Districts of Los Angeles County. Letter from Ruth I. Frazen Engineering Technician, Planning and Property Management Section, to Mr. Ronald Winkler, Economic Development General Manager, Carson Redevelopment Agency. June 2, 2005.*

[160] *City of Carson General Plan, Chapter 4 Transportation and Infrastructure Element.*

[161] *Information on the existing lines was provided by the County Sanitation Districts of Los Angeles County. Letter from Ruth I. Frazen Engineering Technician, Planning and Property Management Section, to Mr. Ronald Winkler, Economic Development General Manager, Carson Redevelopment Agency. June 2, 2005.*



PCR

Figure 41
Existing Sanitary Sewer Lines

3. PROJECT IMPACTS

a. Methodology

Wastewater generation estimates for individual land use categories were provided by the County Sanitation Districts of Los Angeles County. The generation factors were multiplied by the amount and types of development proposed to determine the Project's wastewater generation. The forecasted amount of wastewater generation was compared to the capacities of the treatment facility and conveyance systems that would serve the Project site to determine whether these facilities would be sufficient for meeting the Project's needs.

b. Thresholds of Significance

The Project would have a significant wastewater impact if:

- The Project would cause a more than limited increase in wastewater flows at a point where, and a time when, a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained, or
- The Project's additional wastewater flows would substantially or incrementally exceed the future scheduled capacity of any one treatment plant.

c. Project Design Features

The proposed Project would provide an on-site sewer system that would connect with the existing trunk sewer lines in Del Amo Boulevard and Main Street. The on-site system may include use of the existing on-site lines in Lenardo Drive and Stamps Drive, or may replace these lines with lines better suited to the currently proposed development. The proposed Project would also incorporate water conservation methods such as ultra low-flow toilets, low-flow showerheads, low-flow fixtures and water saving appliances, as required by existing regulations. The Specific Plan includes provisions for the installation of a reclaimed water infrastructure system if a supply of reclaimed water is feasible by 2009.

d. Project Impacts

(a) Construction

During construction of the Proposed Project, a negligible amount of wastewater would be generated by construction personnel. It is anticipated that portable toilets would be provided by

a private company and the waste disposed of off-site. Wastewater generation from construction activities is not anticipated to cause a measurable increase in wastewater flows at a time when a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained. Additionally, construction is not anticipated to generate wastewater flows that would substantially or incrementally exceed the future scheduled capacity of any treatment plant by generating flows greater than those anticipated. Thus, impacts during construction are concluded to be less than significant

The Project's on-site wastewater system would be developed during the construction of the Project, subsequent to implementation of the remediation cap and site grading, and prior to the construction of new buildings. The system may require new tie-ins to the existing sewer lines in Main Street and Del Amo Boulevard; particularly if the existing on-site lines in Stamps Drive and Lenardo Drive are replaced. If such new connections are required, Project construction would require construction activity within the Del Amo Boulevard and Main Street rights of way. Such construction would require approval of the Districts.

If new connections to the existing main lines are required, this could result in secondary, short-term construction impacts. Traffic disruption may occur for trenching, backfilling, and repaving of the roadway. The analysis of Project impacts on traffic includes a discussion of construction impacts, and recommends a Traffic Management Plan as a mitigation measure. With implementation of the identified mitigation measures short-term impacts on traffic due to the construction of the Project's sewer line improvements would be less than significant.

(b) Operation

The projected daily and annual wastewater generation for the proposed Project is summarized in Table 70 on page 524. As indicated, the Project would generate 721,113 gallons per day (gpd) that would need to be conveyed to, and treated at, the JWPCP. As described in the setting section above, the JWPCP has a design capacity of 385 million gallons per day (mgd) and currently processes an average flow of 324.9 mgd.[162] The Project's additional waste flow would require the use of 1.2% of the remaining 60.1 mgd capacity, and would not cause an exceedance of the available capacity.

Also, the Project's total 721,113 gpd would be less than the remaining capacity of 14.4 mgd in the District's 42 inch Main Street Relief Sewer, which would only receive a portion of

[162] *The County Sanitation Districts of Los Angeles County. Letter from Ruth I. Frazen Engineering Technician, Planning and Property Management Section, to Mr. Ronald Winkler, Economic Development General Manager, Carson Redevelopment Agency. June 2, 2005.*

Table 70

Projected Sewage Generation

Use	Size (sq.ft.)	Average Daily Flow (gallons per day)[a]	Annual Generation (million gal/year)[b]
Proposed Project			
Residential			
For Sale	1,150 units	224,250	81.9
Rental	400 units	62,400	22.8
Neighborhood Commercial	130,000 sq.ft.	38,420	14.0
Restaurant	81,125 sq.ft.	81,125	29.6
Hotel (300 rooms)	200,000 sq.ft.	37,500	13.7
Commercial Recreation/Entertainment	214,000 sq.ft.	25,918	9.5
Regional Commercial	1,370,000 sq.ft.	251,500	91.8
Total	**--**	**721,113**	**263.3**

[a] *Calculations are provided in Appendix I.*
[b] *Annual generation reflects the Daily Flow x 365 days.*

Source: PCR, May 2005.

that total.[163] The District was unable to provide capacity information on the Del Amo Replacement Trunk Sewer. However, this is a 42-inch diameter, recently constructed (2004), replacement sewer line with a design capacity of 10.8 mgd. It conveys waste water from limited uses in the vicinity of the Project site itself, and is not known to have capacity constraints for the near future. The District's review of the Project indicated that there are no known limitations to the provision of sewer services, at this time. However, the District notes that significant impacts on downstream portions of the District's sewerage system can occur and capacities need to be verified at the time actual new connections are made. As a matter of course, the District reviews/re-reviews projects at the time building permits are issued and new sewer connection permits requested with payment of fees.

New users to the sewerage system and users with increases in the strength and/or quantity of wastewater attributable to a particular parcel or operation are required to attain a Trunk Sewer Connection Permit, issued by the District, and pay connection fees. As described by the District, "This connection fee is required to construct an incremental expansion of the Sewerage System to accommodate the proposed project, which will mitigate the impact of this project on the

[163] *As described in the Setting Section above, the Main Street Relief Sewer has a design capacity of 20.2 mgd, and conveyed a peak follow of 5.8 mgd when last measured in 2003.*

present Sewerage System."[164] Thus, the District assures that new conditions have not arisen that would limit service and/or that appropriate improvements to provide service go forth.

In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the design capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). All expansions of the Districts' facilities are sized and service is phased in a manner that is consistent with the SCAG regional growth forecast. The available capacities of the Districts' facilities are, therefore, limited to levels associated with the approved growth identified by SCAG. As described in Section IV.A, Land Use and Planning, the Project is consistent with SCAG regional forecasts for the South Bay Cities sub-region.

Therefore, the Project is not anticipated to cause a measurable increase in wastewater flows concurrent in time or at a point when a sewer's capacity is already constrained or that would cause a sewer's capacity to become constrained during peak service. As previously described, the Project would not be permitted prior to the determination of treatment capacity, sufficiency of local service lines and payment of fees to mitigate potential impacts. Therefore, no significant impacts in relation to regional treatment capacity would occur.

4. MITIGATION MEASURES

Although development of the proposed Project is not anticipated to produce significant impacts to sanitary sewers, the following measures would ensure that the increase in sewage generation would result in a less than significant impact.

Mitigation Measure J.2-1: All required sewer improvements shall be designed and constructed according to the standards of the City of Carson and County of Los Angeles.

Mitigation Measure J.2-2: Fee payment is required prior to the issuance of a permit to connect to district sewer facilities.

Mitigation Measure J.2-3: The Building and Safety and Planning Divisions of the Development Services Department shall review building plans to ensure that water reducing measures are utilized, as required by Title 24 of the California Administrative Code. These measures include, but are not limited to, water

[164] *The County Sanitation Districts of Los Angeles County. Letter from Ruth I. Frazen Engineering Technician, Planning and Property Management Section, to Mr. Ronald Winkler, Economic Development General Manager, Carson Redevelopment Agency. June 2, 2005.*

conserving dishwashers, low-volume toilet tanks, and flow control devices for faucets.

Mitigation Measure J.2-4: The project shall include a dual plumbing system designed to utilize reclaimed water for non-potable uses.

5. CUMULATIVE IMPACTS

Section III.B of the Draft EIR identifies 36 Related Projects that may be developed within the vicinity of the proposed Project. These projects would contribute with the proposed Project to the generation of wastewater in the Project area. The wastewater generated by these projects unto themselves, as well as in conjunction with the proposed Project are shown in Table 71 on page 527. As indicated, the related projects would collectively generate 924,638 gallons of wastewater per day; or 337.4 million gallons per year. With the proposed Project the total wastewater generation would be 1,645,751 gallons per day and 600.7 million gallons per year. Related project development is situated such that the water infrastructure that would support the identified related projects would not utilize the water mains in the Project's vicinity that would be utilized by the proposed Project. Thus, cumulative impacts on the local conveyance system would be less than significant.

As described in the setting section above, the JWPCP has a design capacity of 385 mgd and currently processes an average flow of 324.9 mgd.[165] The additional waste flow of the Project and the related projects combined would require the use of 2.7 % of the remaining 60.1 mgd capacity, and would not cause an exceedance of the available capacity. Thus, cumulative impacts on the wastewater treatment capacity would be less than significant.

In relation to broad growth and demand, all of the related projects would individually require a Trunk Sewer Connection Permit, issued by the Districts for the JWPCP. The Los Angeles County Department of Public Works must first determine if there is allotted sewer capacity available for any project prior to accepting building plans for approval. Therefore, cumulative impacts to the local and regional sewer conveyance and treatment system, from the implementation of the proposed Project and the identified related projects are not anticipated to exceed capacities of the local sewer system or treatment facility, and cumulative impacts would thus be less than significant.

[165] *The County Sanitation Districts of Los Angeles County. Letter from Ruth I. Frazen Engineering Technician, Planning and Property Management Section, to Mr. Ronald Winkler, Economic Development General Manager, Carson Redevelopment Agency. June 2, 2005.*

Table 71

Forecast of Cumulative Sewage Generation

Land Use	Size	Sewage Generation: Average Daily Flow [a] (gallons per day)	Sewage Generation: Annual Generation (million gal/year) [b]
Retail[b]	1,087,612 sq. ft.	163,142	59.5
Residential	609 units	118,755	43.3
Office	1,740,070 sq. ft.	348,014	127.0
Light Industrial	871,192 sq.ft.	174,238	63.6
Churches	30,200 sq.ft.	1,359	0.5
Gym (with Showers)	33,000 sq.ft.	19,800	7.2
Training Facilities	80,000 sq.ft.	18,000[c]	6.6
Hotel	200 rooms	25,000	9.1
Movie Theater	46,000 sq.ft.[d]	5,750	2.1
Childcare	150 children	3,000	1.1
University Expansion	1,479 students	29,580	10.8
Dormitories	240 beds	18,000[e]	6.6
Total Related Projects		**924,638**	**337.4**
Proposed Project		721,113	263.3
Total Cumulative Sewage Generation		**1,645,751**	**600.7**

[a] *Unless noted, these values are based on the following County Sanitation Districts of Los Angeles County average daily generation factors for wastewater from different types of land uses (March 2004) (in gallons per day per 1,000 sq. ft., unless noted): Retail – 150, Residential -195 per parcel, Office - 200, Light Industrial -200, Churches -45, Gym (with Showers) -600, Hotel- 125 per room, Indoor Theater -125, Childcare – 20 per child, University Growth – 20 per student. (Calculations are provided in Appendix A.)*

[b] *Annual water consumption assumes 365 days of operation a year.*

[c] *Based on the generation factor of 225 gallons per 1,000 square feet for Practice Facilities.*

[d] *Total square footage of the movie theater was calculated based on a 2,000 seat theater and an assumption of 23 sq. ft. per seat.*

[e] *Based on a consumption rate for dormitories of 75 gallons per bed, obtained from the City of Los Angeles waste generation factors (March 2002).*

Source: PCR Services Corporation.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the implementation of the recommended mitigation measures, any local deficiencies in sewer lines would be identified and remedied and wastewater generation by the Project would be reduced. No significant impact on wastewater conveyances or the capacity of the Joint Water Pollution Control Plant would occur.

IV. ENVIRONMENTAL IMPACT ANALYSIS
J. UTILITIES
3. SOLID WASTE

1. INTRODUCTION

This section focuses on the ability of the solid waste disposed of at disposal facilities that serve the City of Carson to accommodate the solid waste generated by the proposed Project. Information regarding the various regulations established by the State as well as the City of Carson directed towards reducing the volume of solid waste requiring landfill disposal are also described. In order to address the potential impacts of the proposed Project on solid waste facilities, a forecast of the amount of solid waste that would require landfill disposal during construction and operations of the Project is identified.

2. ENVIRONMENTAL SETTING

a. Regulatory Setting

The California Integrated Waste Management Act of 1989 and the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, identify programs local jurisdictions must implement to achieve specific solid waste disposal reduction goals and requires each development project to provide an adequate storage area for the collection and removal of recyclable materials.

The Los Angeles County Solid Waste Management Action Plan is a comprehensive solid waste management study and implements a regional approach to managing solid waste, incorporating source reduction, recycling, and composting programs along with public education awareness programs. The Action Plan recognizes that landfills will remain an integral part of the County's solid waste management system for the foreseeable future, providing for 15 years of disposal capacity on a countywide basis. The Action Plan reaffirms the policy of managing solid waste in Los Angeles County through a reasonable balance of public and private operations and facilities, including a regional public/private landfill system. This policy, combined with sufficient daily disposal capacity, relies on competitive market forces rather than government action to regulate waste flow.

The City of Carson incorporated the requirements of AB 939 into the Municipal Code in 1991.[166] The City's SRRE was approved in 1996,[167] and the City adopted a Construction and Demolition Debris Recycling Program in 2005.[168]

b. Existing Conditions

Solid Waste Collection

Solid waste generated by the City of Carson is collected by two private waste haulers: Waste Management and EDCO LLC. The City contracts with Waste Management and EDCO LLC. for its commercial/industrial waste. The City contracts with Waste Management for all of its residential waste collection services including the pickup of sorted recyclable materials.[169] Both commercial/industrial and residential agreements with the waste haulers are effective until 2013. According to the City's General Plan Transportation and Infrastructure Element, Waste Management collects approximately 70,000 tons of solid waste from residential customers and 153,500 tons of solid waste from commercial and industrial customers per year, a total of roughly 612 tons per day.

The solid waste collected by Waste Management is transported to the company's transfer station at 321 West Francisco Street in Carson, where it is sorted. The 10-acre facility has a permitted capacity of 5,300 tons per day. Once the materials are sorted, wastes such as tires, green waste, steel, and wood are sent to special facilities for disposal and recycling.[170] Commingled commercial recycling is separated and sold to different markets according to value. Green waste is also trucked to the landfills and is utilized as daily cover. Any remaining waste is hauled to one of two Waste Management-owned landfills: Bradley Landfill located in Sun Valley or El Sobrante Landfill located roughly 75 miles from Carson in Riverside County.

Solid Waste Disposal

Municipal solid waste is generally disposed of at landfill facilities for non-hazardous, household waste (Class III landfills). The City of Carson does not own or operate any landfills. Solid waste generated in the City of Carson is taken to one of two Waste Management-owned landfills: Bradley Landfill located in Sun Valley or the El Sobrante Landfill located in Riverside

[166] *City of Carson Municipal Code, Section 5200.*

[167] *City of Carson General Plan – Open Space and Conservation Element.*

[168] *City of Carson, Interoffice Memorandum to City staff/contractors/permit applicants from M. Victor Rollinger, June 1, 2005.*

[169] *Email from Denny Bacon, Waste Management Specialist, City of Carson dated September 9, 2005.*

[170] *City of Carson General Plan – Open Space and Conservation Element.*

County. Approximately 95 percent of the City's solid waste is currently disposed of at El Sobrante Landfill.[171] As of June 6, 2001, the El Sobrante Landfill had a remaining capacity of 3,674,267 cubic yards. Based on this remaining capacity and a throughput of 10,000 tons per day, the landfill has an expected closure date of January 1, 2030.

Unclassified (Inert) Landfills are defined as facilities that accept materials such as soil, concrete, asphalt, and other construction and demolition debris. Inert landfills within Los Angeles County include the following: Azusa Land Reclamation, NU-Way Live Oak Landfill, Peck Road Gravel Pit and Reliance Pit #2. According to the County's 2003 Annual Report,[172] as of December 31, 2003, the total remaining permitted inert waste capacity in Los Angeles County was estimated to be approximately 69.94 million tons.

At the discretion of the Project contractor, construction and demolition debris generated by the Project would either be taken to the downtown Los Angeles diversion facility or sorted on-site and then trucked to specialized recycling facilities. Construction and demolition debris, such as wood or dirt, would be taken to a specialized recycling facility that accepts that specific material. The contractors and waste haulers providing services to the Project would determine which facility the Project's construction and demolition debris would be taken to. Due to the varying nature of the materials that make up construction and demolition debris (i.e., wood, metal, dirt, concrete, dry wall) they are generally not transported to the same facility.[173]

In addition, the City of Carson currently operates several solid waste diversion programs, such as composting, source reduction, recycling, waste to energy, and material recovery. On an annual basis, the City has met or exceeded the waste diversion goals set forth in AB 939 since the legislation was enacted (i.e., the diversion goal of 50% of the City's waste stream). In reporting year 2003, the City had a diversion rate of 68 percent.[174]

3. IMPACT ANALYSIS

a. Methodology

The solid waste analysis estimates the amount of solid waste that would be disposed of at landfills during Project operation and construction.[175] Solid waste disposal during Project

[171] *Email from Denny Bacon, Waste Management Specialist, City of Carson dated September 9, 2005.*

[172] *County of Los Angeles, Department of Public Works, 2003 Annual Report on the Countywide Summary Plan and Countywide Siting Element, February 2005.*

[173] *Ibid.*

[174] *CIWMB website, http://secure.ciwmb.ca.gov/juris/ear/summary.asp, accessed February 28, 2005.*

[175] *Construction is calculated using U.S. EPA solid waste generation factors. These factors take into account the construction debris that would be generated during Project construction.*

operation is estimated for both the Project's commercial and residential components. The amount of solid waste disposal, during Project construction and operations, is then compared with the available capacity at the landfill(s) currently accepting solid waste from the City of Carson.

b. Thresholds of Significance

The proposed Project would have a significant impact if:

- The Project generates solid waste at a level that exceeds the available capacity of the existing and/or planned solid waste facilities (i.e., landfills); and.
- The Project conflicts with the solid waste policies and objectives set forth in the Carson Municipal Code, the City's SRRE, and the City's Construction and Demolition Debris Recycling Program.

c. Project Impacts

(1) Construction

Construction and demolition debris would be generated during the construction of the proposed Project. Street improvements in conjunction with the installation of domestic water and sewer infrastructure are planned as part of Project construction activities. Should existing roadways be removed, construction debris would consist primarily of asphalt paving. The installation of water and sewer lines would also generate related construction debris. However, as the Project site is essentially undeveloped, no structures would be demolished during Project construction. Solid waste associated with the above-listed improvements would be disposed of at an unclassified landfill accepting inert waste.

The following calculations are based on an average of 4.02 pounds of construction debris per square foot of commercial construction and 4.38 pounds of construction debris per square foot of residential construction.[176] Construction of the Project's 1,995,125 square feet of commercial development would generate approximately 4,010 tons (8,020,403 pounds) of construction debris. As the exact square footage of development of the Project's 1,550 multifamily residential units is yet to be determined, based on preliminary FAR calculations, an estimate of 3,850,698 square feet will be used to assess the amount of solid waste that would be generated by construction of this portion of the Project. Thus, construction of the Project's residential component would generate approximately 8,433 tons (16,866,057 pounds) of

[176] *U.S. EPA, Report No. 530R98010, Characterization of Building-Related Construction and Demolition Debris in the United States, June 1998, page A-1.*

construction debris. Assuming that no construction debris would be recycled, Project construction would generate a total of roughly 12,443 tons of solid waste. With implementation the City's mandatory Construction and Demolition Debris Recycling Program, a minimum of 50 percent of the Project-generated construction waste would be diverted, and thus, not be disposed of at landfill facilities. With the implementation of the City's Construction and Demolition Debris Recycling Program, the actual total amount of construction debris disposed of at a landfill would be on the order of 6,222 tons.

As of December 31, 2003, the total remaining permitted inert waste capacity in Los Angeles County was estimated to be approximately 69.94 million tons. Based on the average 2003 disposal rate of approximately 1.2 million tons per year, this capacity will be exhausted by about 2065 (i.e., approximately 60 years).[177] As previously discussed, due to the varying nature of construction and demolition debris materials, Project-related construction waste would be distributed to various disposal facilities. As Project construction debris would represent approximately .0009 percent of remaining inert landfill capacity, impacts attributable to the Project's construction debris are concluded to be less than significant.

(2) Operation

Proposed Project operations would generate municipal solid waste from the variety of residential and commercial uses anticipated to locate the Project site. Solid waste disposal rates, as set forth in the CIWMB Solid Waste Characterization Database, are used in this analysis. The estimated amount of solid waste that would be disposed of during Project operations is presented in Table 72 on page 533.

Residential waste disposal rates reflect the amount (tons) of solid waste disposal generated per dwelling unit on an annual basis. The statewide waste disposal rate for multifamily residential units is 0.46 tons per unit per year. As 1,550 units would be constructed, approximately 713 tons of solid waste that requires disposal at a landfill accepting municipal waste would be generated yearly by the residential portion of the Project. Waste disposal rates for the business types anticipated to occur at the Project site are calculated according to the amount (tons) of waste that an employee generates on an annual basis that is anticipated to be disposed of at a landfill that accepts municipal waste. Based on the amount and types of proposed development (1,995,125 square feet), the Project's commercial component would require the disposal of 9,351 tons of solid waste per year. Thus, Project operations would require the disposal of approximately 10,064 tons of solid waste per year. This forecast of solid waste disposal may be greater than actual levels generated by the Project based on the higher level of solid waste diversion that presently occurs in Carson relative to the requirements of AB 939 (i.e., 68% diversion vs. a requirement of 50%).

[177] *County of Los Angeles, Department of Public Works, 2003 Annual Report on the Countywide Summary Plan and Countywide Siting Element, February 2005, page 43.*

Table 72

Solid Waste Disposal During Project Operation

Use Type	Disposal Rate (tons/unit/year) [a]	Amount of Development	Total
Multifamily Residential	0.46	1,550 dwelling units	713 tons

Commercial	Disposal Rate (tons/employee/year) [b]	Amount of Development	Employees [d]	Total
Retail	1.9	1,500,000 sq.ft.	4,000	7,600
Recreation & Entertainment	0.9	214,000 sq.ft.	571	514
Restaurant	3.1	81,125 sq.ft.	216	671
Hotel	2.1	200,000 sq.ft.[c]	270	567
Total Commercial		1,995,125 sq.ft.	5,057	9,351
Grand Total				**10,064 tons/year**

[a] *Based on statewide disposal rate for multifamily residential units published by the CIWMB.*
[b] *Based on CIWMB waste disposal rates for business types*
[c] *Assumes 300 hotel rooms.*
[d] *Derived from factors generated by PCR Services Corporation based on data presented in the Institute of Transportation Engineers, Trip Generation Manual, 6th Edition, 1997.*

Source: PCR Services Corporation.

In considering the Project's contribution to the Countywide waste stream it is important to note that the Project's solid waste generation would constitute a very small fraction of the amount of solid waste generated in Los Angeles County on an annual basis. Specifically, the solid waste generated by the proposed Project at buildout would constitute 0.04 percent of the 23.8 million tons of solid waste disposal in Los Angeles County in 2003.

Municipal solid waste generated within the City of Carson is currently disposed of at either the El Sobrante Landfill or the Bradley Landfill. Whereas the Bradley Landfill is nearing capacity and may not be available once the Project is operational in 2010, the El Sobrante Landfill has a remaining life, based on current throughput levels, of 25 years. Even though El Sobrante is anticipated to have capacity through 2030, landfill capacity on a Countywide basis is an ongoing issue of concern. Notwithstanding, as roughly 95 percent of the City's solid waste is disposed of at the El Sobrante Landfill, which has sufficient remaining capacity, impacts associated with the proposed Project would be less than significant.

The Los Angeles County Integrated Waste Management Plan, inclusive of its annual reports, serves as the primary planning documents for the County's waste disposal needs. The 2003 Annual Report, the most recent available report, forecasts conditions over a 15-year

planning horizon. With each subsequent Annual Report, the 15-year planning horizon is extended by one year, thereby providing sufficient lead time to address any future shortfalls in landfill capacity. The 2003 Annual Report clearly concludes that there is enough capacity within permitted solid waste facilities (i.e., landfills) to serve Los Angeles County through the 15-year planning period of 2003–2018. The 2003 Annual Report specifically states that "the County of Los Angeles will protect the health and safety of all residents in the County by ensuring that solid waste disposal service, an essential public service, is provided without interruption through the 15-year planning period and in the long term".

Furthermore, the Los Angeles County Department of Public Works and the County Integrated Waste Management Task Force submitted the first Five-Year Review Report for the Countywide Integrated Waste Management Plan in June 2004 (the latest available report). The Five-Year Review Report was approved by the California Integrated Waste Management Board in September 2004. The February 2, 2004, transmittal letter for this report states that the "updated disposal capacity need analysis demonstrates that the County of Los Angeles meet the disposal capacity requirements of AB 939 by successfully permitting and developing all in-county landfill expansions, by more extensively utilizing out-of-County disposal capacity, and developing facilities utilizing conversion technologies to the extent technically feasible" (February 2, 2004, letter, page 1). The Five-Year Review Report states that the "remaining landfill capacity and the rate of depletion of that capacity give an indication of the ability of jurisdictions in the County to meet the solid waste disposal needs of their residents and businesses, thereby protecting public health and safety and the environment" (Five-Year Review Report, page 63). This report repeats the conclusion of the 2003 Annual Report that "the County continues to have adequate disposal capacity (i.e., greater than 15 years)" (Five-Year Review Report, page 65). The Five-Year Review Report's conclusions are based in part upon a survey of all cities within the County regarding their disposal rates and waste diversion programs.

Through a combination of compliance with City requirements regarding recycling, the limited proportion of Countywide solid waste generation attributable to the proposed Project, available capacity within the El Sobrante Landfill, and the ongoing legally required solid waste planning programs, it is concluded that Project operations would have a less than significant impact with regard to landfill disposal capacity. As the Project would comply with City-required recycling programs, Project operations would be consistent with the applicable provisions of the SRRE. As such, a less than significant impact would result.

4. MITIGATION MEASURES

Mitigation Measure J.3-1: All structures constructed or uses established within any part of the proposed Project site shall be designed to be permanently equipped with clearly marked, durable, source sorted recycling bins at all times to facilitate the separation and deposit of recyclable materials.

Mitigation Measure J.3-2: Primary collection bins shall be designed to facilitate mechanized collection of such recyclable wastes for transport to on- or off-site recycling facilities.

Mitigation Measure J.3-3: The Applicant shall coordinate with the City of Carson to continuously maintain in good order for the convenience of patrons, employees, and residents clearly marked, durable and separate recycling bins on the same lot, or parcel to facilitate the deposit of recyclable or commingled waste metal, cardboard, paper, glass, and plastic therein; maintain accessibility to such bins at all times, for collection of such wastes for transport to on- or off-site recycling plants; and require waste haulers to utilize local or regional material recovery facilities as feasible and appropriate.

Mitigation Measure J.3-4: Any existing on-site roads that are torn up shall be ground on site and recycled into the new road base.

Mitigation Measure J.3-5: Compaction facilities for non-recyclable materials shall be provided in every occupied building greater than 20,000 square feet in size to reduce both the total volume of solid waste produced and the number of trips required for collection, to the extent feasible.

Mitigation Measure J.3-6: All construction debris shall be recycled in a practical, available, accessible manner, to the extent feasible, during the construction phase.

5. CUMULATIVE IMPACT

As shown in Table 73 on page 536, development of the identified related projects would generate 23,391 tons of solid waste during construction. As with the proposed Project, pursuant to the City's Construction and Demolition Debris Recycling Program, at least 50 percent of the construction debris generated by the related projects would be required to be recycled. In comparison to a remaining inert landfill disposal capacity of 69.94 million tons, cumulative construction debris, incorporating the conservative assumption that there is no recycling of construction wastes, constitutes 0.03 percent of the remaining inert landfill capacity. Based on this small percentage, cumulative impacts on inert landfill capacity are concluded to be less than significant.

During operations, cumulative solid waste disposal for the related projects is forecasted to be approximately 36,630 tons on an annual basis. It is anticipated that the proposed Project and other related projects would not conflict with solid waste policies and objectives in the City's SRRE or Construction and Demolition Debris Recycling Program. Impacts to solid waste policies and objectives intended to help achieve the requirements of AB 939 from

Table 73

Forecast of Cumulative Waste Disposal

Land Use	Size	Number of Residents/Employees	Waste Disposal		
			Disposal Rate (tons/year) [a]	Total Operation	Construction [b]
Residential	913,500 sq.ft.[c]	2,186[d]	0.41[e]	896	2,001
University Expansion	200,000 sq.ft.[f]	1,479	0.41[e]	606	402
Dormitories	204,000 sq.ft.[g]	240	0.41[e]	98	447
Retail	1,087,612 sq.ft.	2,900	1.9	5,511	2,186
Office	1,740,070 sq.ft.	6,960	1.7	11,832	3,498
Light Industrial	871,192 sq.ft.	2,178	3.1	6,752	1,751
Churches	30,200 sq.ft.	60	0.9	54	61
Gym	33,000 sq.ft.	66	1.2	79	66
Training Facilities	80,000 sq.ft.	160	0.8	128	161
Hotel	134,000 sq.ft.[h]	222	2.1	466	269
Movie Theater	46,000 sq.ft.[i]	15	0.9	14	92
Childcare	7,000 sq.ft.[j]	163[k]	0.8	130	14
Total Related Projects	5,346,574			26,566	10,948
Proposed Project	5,845,823			10,064	12,443
Total	**11,192,397**			**36,630**	**23,391[l]**

[a] *Based on CIWMB waste disposal rates.*
[b] *Expressed in tons. Factors based on generation rate of 4.02 and 4.38 pounds of debris per 1,000 square feet of commercial and residential construction, respectively (U.S. EPA Report, 530R98010, page A-1, June 1998).*
[c] *Total square footage calculated based on 1,500 square feet per residential unit (609 units).*
[d] *Based on 2000 Census data for Carson which includes an average household size of 3.59 persons.*
[e] *CIWMB per capita disposal rate for Los Angeles County.*
[f] *Total square footage based on information provided by CSUDH: 140,000 square feet of library space and 60,000 square feet for additions to the Student Union (1,479 students).*
[g] *Total square footage calculated based on 850 square feet per bed (240 beds).*
[h] *Total square footage calculated based on 200 hotel rooms.*
[i] *Total square footage calculated based on 23 square feet per seat (2,000 seats).*
[j] *Total square footage based on information provided by CSUDH.*
[k] *Based on student teacher ratio of 12 students per teacher(150 children).*
[l] *Total does not include diversion.*

Source: PCR Services Corporation.

implementation of the proposed Project and related projects would not be cumulatively significant. Cumulative annual solid waste generation represents 0.15 percent of the total solid waste generated in Los Angeles County in 2003. Based on this small percentage as well as the City's recycling programs and ongoing planning efforts at a Countywide level assuring 15 years of landfill capacity on an ongoing basis, cumulative impacts on municipal landfill capacity are concluded to be less than significant.

6. SIGNIFICANCE AFTER MITIGATION

The proposed Project would create an increase in solid waste disposal in the City of Carson. Construction of the proposed Project would not result in an increase in inert solid waste generation that would create a need for additional inert solid waste disposal facilities to adequately handle Project-generated inert waste. Thus, construction-related waste would result in a less than significant impact. Operation of the proposed Project would generate an estimated increase of 10 tons per year of Class III solid waste, based on the amount of proposed Project development. As the El Sobrante Landfill has available capacity for the next 25 years, it is anticipated that solid waste generated by the proposed Project could be accommodated at the existing facility. Thus, impacts associated with the Project's solid waste generation are concluded to be less than significant. Furthermore, the County via its established planning programs has concluded that landfill disposal capacity will be available for the next 15 years, and in the long-term.

The proposed Project would not conflict with the solid waste policies and objectives in the SRRE or the City's Construction and Demolition Debris Recycling Program impacts relative to adopted solid waste diversion programs and policies would be less than significant.

V. Alternatives to the Proposed Project

V. ALTERNATIVES TO THE PROPOSED PROJECT

A. INTRODUCTION

The State CEQA Guidelines (Section 15126.6(a)) require an EIR to: (1) describe a range of reasonable alternatives to the proposed project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project; and (2) evaluate the comparative merits of the Alternatives.[178] The State CEQA Guidelines (Section 15126.6(b)) direct that the analysis of alternatives be limited to alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly.

The selection and discussion of the Alternatives is intended to foster meaningful public participation and informed decision-making. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote or speculative. The State CEQA Guidelines (Section 15126.6(e)) also require the analysis of a "No Project" alternative and the identification of the "Environmentally Superior Alternative." If the environmentally superior alternative is the No Project alternative, then the EIR is required to identify an environmentally superior alternative among the other alternatives.

In addition, the State CEQA Guidelines (Section 15126.6(c)) require an EIR to identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Accordingly, several alternatives to the proposed Project that might avoid or substantially lessen the Project's impacts were considered. Of the Alternatives that were considered, four were selected for analysis.

B. BASIC OBJECTIVES OF THE PROPOSED PROJECT

Section II, Project Description, sets forth the following as the basic objectives for the proposed Project:

[178] *The CEQA guidelines regarding the consideration and discussion of alternatives to a proposed project, as summarized here, are found in Section 15126.6 of the State CEQA Guidelines.*

- Achieve productive reuse of a large brownfield site by approving a Project capable of generating the revenue necessary to pay for and effectuate remediation of the environmental conditions on the Project site.

- Promote the economic well being of the Redevelopment Project Area by encouraging the diversification and development of its economic base, and assist in creating both short and long term employment opportunities for the residents of the Redevelopment Project Area and the City.

- Maximize shopping and entertainment opportunities to serve the population and maintain a sustainable balance of residential and non-residential uses by approving a mixed use Project that includes entertainment, retail shopping, restaurants, and residential units.

- Provide a diversity of both short term and long term employment opportunities for local residents by approving a Project that will generate substantial construction work opportunities and long-term jobs in the commercial and hospitality industries.

- Improve the housing stock, including affordable housing, by approving a Project that includes a substantial residential component with rental and for sale units.

- Provide a signature/gateway Project that contributes to the creation of a vibrant urban core for the City, taking advantage of the site's proximity to the San Diego Freeway.

C. ALTERNATIVES SELECTED FOR THE ANALYSIS

As required by the CEQA Guidelines, this section of the Draft EIR describes several reasonable alternatives to the Project, and evaluates the environmental impacts associated with each alternative. This section focuses on alternatives that might potentially avoid or reduce the significant adverse impacts of the Project. Four alternative project scenarios, including an alternative use, a reduced density, and an alternative location scenario, have been developed and analyzed to compare the relative impacts of these alternatives to the Project. The analysis of alternatives begins with the "No Project" Alternative. Based on comparative evaluations, estimations are made as to the environmental impacts of each alternative in contrast to those of the Project, and whether each alternative could attain the Applicant's basic Project objectives. The Alternatives to the Project are summarized in Table 74 on page 540, and are as follows:

Table 74

Alternatives Land Use Comparison

Type of Development	Proposed Project	Alternative 1 No Project—No Development	Alternative 2 Development per General Plan	Alternative 3 Reduced Project (25 Percent Reduction)	Alternative 4 Alternative Site
Residential	1,550 units	0 units	0 units	1,162 units	1,550 units
Neighborhood Commercial	130,000 sq.ft.	0 sq.ft.	81,245 sq.ft.	97,500 sq.ft.	130,000 sq.ft.
Restaurant	81,125sq.ft.	0 sq.ft.	60,060 sq.ft.	60,844 sq.ft.	81,125 sq.ft.
Hotel	300 rooms	0 sq.ft.	0 sq.ft.	225 rooms	300 rooms
	200,000 sq.ft.			150,000 sq.ft.	200,000 sq.ft.
Commercial Recreation/ Entertainment	214,000 sq.ft.	0 sq.ft.	0 sq.ft.	160,500 sq.ft.	214,000 sq.ft.
Regional Commercial	1,370,000 sq.ft.	0 sq.ft.	856,220 sq.ft.	1,027,500sq.ft.	1,370,000 sq.ft.
Light Industrial	0 sq.ft.	0 sq.ft.	997,600 sq.ft.	0 sq.ft.	0 sq.ft.
Total Non-residential Floor Area	1,995,125 sq.ft.	0 sq.ft.	1,995,125 sq.ft.	1,496,344 sq.ft.	1,995,125 sq.ft.

Source: PCR Services Corporation

Alternative 1: No Project

The No Project alternative assumes that the Project would not be developed and that the property would remain in its existing physical condition. Although some pressure for, and interest in, reuse of the site exists, no project would be approved in the foreseeable future. Under Alternative 1, the parcel north of Del Amo Boulevard would remain vacant and existing fill and debris would not be removed. Remediation of the existing brownfield portion of the Project site south of Del Amo Boulevard, including the capping of existing waste materials at the former landfill site, would not occur. The evaluation of the No Project alternative addresses the requirements of Section 15126.6 (3)(1) of the CEQA Guidelines.

Alternative 2: Mixed-Use Business Park

Under Alternative 2, the Project would be developed with uses that are in keeping with the Mixed-Use-Business Park designation for the Project site set forth in the City's 2004 General Plan Update. This land use category is intended to provide for the least intensive industrial uses, as well as commercial development. The land use category is envisioned to provide for a variety of businesses and professional offices, services and associated business as well as retail activities in an attractive environment. In lieu of a Specific Plan, development would be subject to the requirements of the ML zone and the site's existing Design Overlay and Organic Refuse Landfill Overlay designations. The total floor area would be equivalent to the commercial floor area

proposed by the Project (i.e., 1,995,125 square feet). It is assumed that commercial and light industrial/business park floor area would be equally divided. The overall FAR would be approximately 0.27, which would occur in a series of single-story buildings. Remediation of the former landfill site, including capping of waste materials and coverage of the former landfill site by impervious concrete foundations, parking lots, and streets would be the same as under the Project. A comparison between Alternative 2's mix of land uses and other Project alternatives is presented in Table 74.

Alternative 3: Reduced Project

The Reduced Density Alternative, Alternative 3, assumes that the scale of the Project would be reduced through a 25 percent reduction in all proposed land uses (i.e., residential units and commercial floor area). The proportionate mix of commercial and residential uses would be the same as under the Project; however, maximum development would consist of 1,162 residential units and commercial floor area would consist of 1,496,343 square feet. The reduction in development under Alternative 3 could be achieved through fewer structures (smaller building footprint) or reduced building heights. The former landfill site would be capped and completely covered by impermeable foundation pads, parking lots, and streets, as was the case with the Project. A comparison between Alternative 3's mix of land uses and other Project alternatives is contained in Table 74.

Alternative 4: Alternative Location

Alternative 4 assumes that the Project would be moved to another location and no development would occur at the Project site. The purpose of the evaluation of an Alternative Site is to ascertain if changing the location of a project to another site would reduce or eliminate any potentially significant environmental impacts that may be unique to the Project's location, and whether relocation could potentially eliminate potential Project impacts. For the purposes of this analysis, it is assumed that Alternative 4 would be constructed according to the Project's intensity under a Specific Plan comparable to that prepared for the Project. Specific criteria in determining the acceptability of an alternative site are location within the same jurisdiction and adequate size to accommodate the scope of the Project. In accordance with these criteria, the Shell refinery site and tank farm located approximately one mile east of the proposed Project site is selected for the purposes of analyzing Project development at an alternative location. The Alternative Location site is an approximate 280-acre parcel, located between Del Amo Boulevard and Dominguez Street, just west of Wilmington Avenue. The evaluation of this Alternative complies with the requirements of CEQA Section 15126.6(f)(2). A comparison between Alternative 4 and other Project alternatives is contained in Table 74.

D. ALTERNATIVES CONSIDERED BUT REJECTED

The State CEQA Guidelines, Section 15126.6(c) state that an EIR shall consider a reasonable range of alternatives to the proposed project and that the EIR should briefly describe the rationale for selecting the Alternatives to be discussed. As described in CEQA Guidelines Section 15126.6(c), the reasons for rejecting alternatives from detailed consideration include the following: (i) failure to meet most of the basic project objectives; (ii) infeasibility; or (iii) inability to avoid significant environmental impacts.

Per CEQA Guidelines Section 15126.6(c), the analysis of alternatives started with an identification of alternatives to the Project that had the potential to reduce or eliminate the Project's significant environmental impacts. The Alternatives identified were then evaluated in terms of the three CEQA criteria identified above to determine those alternatives that would be analyzed further within the Draft EIR and those alternatives that would be rejected from further review. Two alternatives that were identified but subsequently rejected from further analysis include: (a) the use of the Project site as a public park; and (b) the development of the Project site with heavy industrial uses. The use of the Project site as a public park and recreational facility was rejected as infeasible, since the majority of the Project site must be capped and covered by a 100 percent impermeable surface prior to any type of development or occupation. Such an impermeable ground surface could not be feasibly re-vegetated or landscaped to meet the requirements of a public park. If the impermeable cover were not installed, use of the Project site would be infeasible since future users would be potentially exposed to underlying contaminated wastes, in excess of state and federal standards.

Development of the Project site for heavy industrial uses was also rejected as infeasible, since the City has an abundance of industrial land. Furthermore, this Alternative land use would not accommodate the City's forecasted population growth or meet the City's need to diversify its land use mix to provide both housing and services in the form of residential and commercial land uses.

E. ANALYSIS METHODOLOGY

Each of the four alternatives is evaluated in sequence below. Each alternative is evaluated in less detail than the Project, as presented in Section IV, Environmental Impact Analysis, of the Draft EIR, but in sufficient detail to determine whether environmental impacts of the Alternative after mitigation would be greater, similar, or less than the corresponding impacts of the Project, and in sufficient detail to determine whether Project objectives are substantially attained. To determine the comparative impacts, the process described below has been followed:

- An evaluation of the environmental impacts anticipated for each alternative in comparison to the proposed Project, including the ability of each alternative to avoid or substantially lessen any significant environmental impacts associated with the proposed Project. Where the impacts of the Alternative and the proposed Project would be roughly equivalent, the comparative impact is said to be "similar";

- If applicable, a description of the impacts of each alternative that are not impacts of the proposed Project; and

- A statement of whether each alternative is feasible and meets the basic objectives of the proposed Project.

F. EVALUATION OF THE ALTERNATIVES

1. Alternative 1: No Project

a. Introduction

This section presents an environmental analysis of a No Project alternative, in which the Project would not be developed and the property would remain in its existing physical condition. Although some pressure for and interest in reuse of the site exists, no development of the Project site would be approved in the foreseeable future. Under Alternative 1, the parcel north of Del Amo Boulevard would remain vacant and existing fill and debris would not be removed. Remediation of the existing brownfield portion of the Project site south of Del Amo Boulevard, including capping of existing waste materials at the former landfill site, would not occur. A comparison between Alternative 1 and the Project is presented in Table 75 on page 544. A summary of comparative impacts is presented at the end of the Alternatives analysis in Table 83 on page 596.

b. Analysis of Alternative

(1) Land Use

Under the No Project Alternative, the Project site would not be developed, and the currently proposed program for remediating the site would not be implemented. This would result in no changes to the existing land use relationships. The site would remain available for another Project at some future time. Site remediation would be postponed subject to development of an alternative implementation mechanism.

Table 75

Comparison of Alternative 1 Components: No Project

Land Use	Proposed Project	No Project	Numerical Difference	Percent Change
Residential	1,550 units	0 units	-1,550 units	-100
Neighborhood Commercial	130,000 sq.ft.	0 sq.ft.	-130,000 sq.ft.	-100
Restaurant	81,125 sq.ft.	0 sq.ft.	-81,125 sq.ft.	-100
Hotel	300 rooms	0 sq.ft.	-300 rooms	-100
	200,000 sq.ft.		-200,000 sq.ft.	
Commercial Recreation/ Entertainment	214,000 sq.ft.	0 sq.ft.	-214,000 sq.ft.	-100
Regional Commercial	1,370,000 sq. ft.	0 sq.ft.	-1,370,000 sq.ft.	-100
Total Non-Residential	1,995,125 sq.ft.	0 sq.ft.	-1,995,125 sq.ft.	-100

Source: PCR Services Corporation, August 2005

(a) Compatibility with Land Use Plans, Polices and Regulations

No development at this time would have no direct effect on the regulatory framework. At the same time it would not support the following: (1) remediation and productive reuse of a brownfield site; (2) enhancing the City's economic base; (3) the addition of new employment opportunities and new housing units in the City; and most notably (4) the development of a signature project that would maximize the advantages of the site's location and provide an enhanced urban center within the central portion of the City. As this Alternative would not achieve these results, it would not implement the existing land use plans, policies and regulations intended to prevent an impact to the environment. However, it would not preclude their future implementation and therefore would not cause a significant impact. The Proposed Project's impacts regarding the regulatory framework would also be less than significant. Impacts on the regulatory framework would be greater.

(b) Existing Land Use Patterns

This Alternative would have no impact on the existing land use relationships in the Project vicinity, and impact would be less than with the proposed Project. The No Project Alternative, as is the case with the proposed Project, would not result in the division, disruption or isolation of an existing established community or neighborhood. Thus, the impacts of Alternative 1 with regard to the land use relationships would be less than significant, as is the case with the proposed Project.

(c) Sustainability of Existing Retail Uses

With no development, this Alternative would not adversely affect the viability of retail uses within the market area, nor contribute to long-term physical disrepair to such buildings. Therefore, the impacts on the sustainability of existing uses would be less than under the proposed Project. As is the case with the proposed Project, impacts on the sustainability of existing retail uses would be less than significant.

(2) Visual Resources

(a) Aesthetic Character

(i) Construction

The No Project alternative would include no construction activities, and therefore no construction impacts on the aesthetic character of the Project area. Impacts would be less than with the proposed Project. However, the Project's construction activities would have a less than significant impact due to the limited off-site views of activities, the common appearance of construction activities in an urban setting, and the lack of contrast of construction activities with any off-site valued resources. The Project's less than significant aesthetic impact associated with Project construction would be less under the No Project alternative.

(ii) Operation

Under the No Project alternative, existing aesthetic conditions on the Project site would not change. This would preclude both potential enhancement of the somewhat degraded appearance of the site, and also avoid all of the impacts associated with the proposed Project. In particular, the No Project alternative would avoid the Project's significant and unavoidable impact on the valued resource associated with the Project site's large expanse of undeveloped land. Other avoided impacts of the proposed Project are less than significant. The Project would be less than significant in relation to existing off-site buildings, unless on-site building heights along the southern/southwestern edge were developed within the range allowed by the Specific Plan, but substantially taller than buildings shown in the Conceptual Plan or if signage on the eastern/I-405 Project edge were not consistent with the Conceptual Plan. The Project includes mitigation measures to reduce these potentially significant impacts to less than significant levels. The Project would also have a less than significant impact on aesthetics due to Project induced vacancies at off-site locations that could cause a degraded appearance to vacant buildings. This less than significant impact of the Project would also be avoided. Therefore, the aesthetic character impact of the No Project Alternative would be less than under the Project.

(b) View Resources

The No Project alternative would not change any of the views over or into the Project site. The Project site is in a degraded state, and is not considered a view resource. Views over the Project site are limited due to intervening development, the flat terrain in the surrounding areas, and the relative height of the berm comprising the Project site. In addition, the Project vicinity does not contain notable features that would be considered view resources. Since no view resources are identified on the Project site or in the area, the impact of the Project in relation to view resources would be less than significant. Although the Project would have less than significant view impacts, the No Project alternative would cause no change or impact of any type on existing views. Therefore, the impact of the No Project alternative on view resources would be less than under the Project.

(c) Shade/Shadow

Under the No Project alternative, no buildings would be developed and no shade impacts would occur. In comparison, the Project's shade/shadow impacts would be less than significant, with the maximum off-site shading on nearby residential development occurring during winter mornings and not exceeding the three-hour significance threshold. However, since the No Project alternative would cause no shading impacts of any type, the impact of the No Project alternative on shade/shadow would be less than under the Project.

(d) Artificial Light

The Project site is currently vacant and generates no artificial light. Under the No Project alternative, no buildings, parking lots, or signs would be developed that would generate artificial light. The Project would add new lighting and, although such lighting would be typical of ambient urban lighting, existing light levels would increase. Although the Project's artificial light impacts would be reduced to less than significance through light control methods, shielding, limitation of pole heights, and implementation of the City's light intensity regulations, under the No Project alternative, no lighting impacts of any type would occur. Therefore, the impact of the No Project alternative relative to artificial lighting would be less than under the Project.

(3) Traffic, Circulation, and Parking

Under the No Project alternative, no traffic associated with development of the Project site would occur. The No Project alternative would reduce the Project's potentially significant impact on 10 study intersections to less than significant levels. However, future traffic under the No Project alternative would continue to increase due to the development of the identified related

projects and regional growth. In 2010 without the Project, six of the 27 study intersections are anticipated to operate at LOS E or F during the A.M. or P.M., or both, peak hours.

Under the No Project alternative, intersection improvements at Del Amo Boulevard/Stamps Drive and Lenardo Drive/Main Street would not go forward. In addition, the intersection of Lenardo Drive with the I-405/Avalon Boulevard interchange would not be needed or developed. No new parking would be required or provided.

(4) Hazards and Hazardous Materials

Under the No Project alternative, the condition of the Project site would not change. The 157-acre landfill underlying Development Districts 1 and 2 would remain uncapped. The No Project alternative would not likely result in the implementation of the Remedial Action Plans (RAPs) for the Upper and Lower Operable Units of the former landfill site, which have been approved by the Department of Toxic Substances Control (DTSC). The remediation would not occur since the current property owner does not have the funds to implement the RAPs. While the State has pursued other responsible parties and created a remediation fund from the proceeds of lawsuits against those parties, the fund is not sufficient to complete the remediation. The No Project alternative would not generate the additional funds that are necessary to implement the remediation. As such, the No Project alternative would not result in the remediation of the site. As has occurred over the years, periodic maintenance may be necessary to address landfill related conditions, such as potential emission of methane gas. The groundwater contamination in the Upper Operable Unit would not be remediated and could continue to migrate. Because of the lack of implementation of the Upper Operable Unit RAP, the No Project alternative could result in hazards that would not occur with the Project. With regard to the development of District 3, development north of Del Amo would not occur under the No Project alternative. The recommended additional Phase II activities of deeper soil-vapor sampling would not occur to further evaluate potential vapor intrusion into the soil. Overall, potential hazards would be greater under the No Project alternative compared with the Project primarily due to the lack of implementation of the approved RAPs.

(5) Geology/Soils

Under the No Project alternative, the condition of the Project site, including the presence of existing stockpiles of unconsolidated fill in the parcels north and south of Del Amo Boulevard would not change. No construction or site preparation, including importation of fill materials or the removal and re-compaction of existing fill and stockpiled soils would occur. Although unconsolidated fill materials would remain on the parcels north and south of Del Amo Boulevard, the No Project alternative would avoid the construction and occupation of any portion of the Project site. No structures would be constructed and no residents, employees,

visitors, or other occupants would be exposed to potential ground shaking or settlement as a result of an earthquake event. As such, Alternative 1 would avoid the Project's geological impacts, which are concluded to be less than significant with the implementation of existing building code regulations and adherence to the recommendations of required geological and geotechnical reports prepared by a California Certified Engineering Geologist and a California Registered Civil Engineer. Since the No Project alternative would avoid the Project's less than significant geological impacts, geological impacts are considered to be less under this Alternative.

(6) Surface Water Quality

Under the No Project alternative, the parcels north and south of Del Amo Boulevard would not be developed. No impervious cap or building pads would be installed over the waste materials in the brownfield site south of Del Amo Boulevard and, as such, exposure of potentially contaminated soils to surface water runoff would continue. The existing SWPPP and water monitoring program would continue to be implemented. The existing SWPPP and monitoring program indicate that no surface water contaminants, with the exception of TSS which are reduced to acceptable levels with the implementation of existing BMPs, exceed the State's specified limits. The Project site north of Del Amo Boulevard has been identified as having historic levels of VOCs in the soils; however, recent tests at 5-feet below ground level (bgl) indicate no exceedance of state standards. Contamination of surface water runoff, which would be generally exposed to the upper soil levels, would be considered less than significant. However, soils at the Project site would continue to be exposed to surface water and the potential for erosion and turbidity of surface water at the Project site would continue. Under this Alternative, no construction or occupation of the Project site would occur, and the Project's less than significant water quality impacts associated with grading and operation would not occur. Since no construction or occupation of the Project site would occur, water quality impacts associated with grading, which exposes soils to surface water, and operation, which exposes vehicle waste to surface water, would occur. However, since soils would continue to be exposed to surface water over the entire site, and no further evaluation of potential vapor intrusion into the soil north of Del Amo Boulevard would occur, the overall impact of the No Project alternative would be greater than under the Project.

(7) Air Quality

This Alternative would include no new development, and therefore would not generate air pollutants. Impacts would be less than significant, whereas the Project would have a significant impact on Air Quality.

(8) Noise

No development would occur within the Project site under this Alternative. Consequently, it would not generate any new or increased sources of noise on the Project site or within the surrounding vicinity. Impacts would be less than significant, whereas the Project would have a significant impact on Noise.

(9) Public Services

(a) Fire Services

(i) Construction

Under the No Project Alternative, no development would occur. In comparison, Project construction activities have the potential to increase demand for fire services due to the occasional exposure of combustible sawdust, wood, plastics, etc, to such heat sources as machinery and equipment sparking, exposed electrical lines, welding activities, and chemical reactions. Construction activities requiring street or sidewalk closure or detouring also have the potential to impede or interfere with emergency services. Although Project design features, existing OSHA and fire code regulations, and mitigation measures would reduce such impacts to less than significant levels, since no construction activities of any type would occur under the No Project alternative, the No Project alternative would avoid the Project's less than significant impact on fire services. Therefore, the impact of the No Project alternative relative to fire services would be less than under the proposed Project.

(ii) Operation

Under the No Project Alternative, no development would occur. No increase in the existing demand on fire services would occur and no County Fire Department Developer Fees or increase in direct assessments in property taxes would be collected. The Project would reduce potential impacts associated with increased demand on fire services to less than significance through adherence to fire code regulations; installation of fire suppression equipment, including sprinklers; and incorporation of recommended mitigation measures Although the Project, with mitigation, would have a less than significant impact on fire services, since the No Project alternative would not increase demand on fire services, the No Project alternative would have less impact on fire services than the proposed Project.

(b) Police Services

The No Project alternative would not change the existing use of the Project site, as such the site would remain undeveloped therefore, the demand for police protection services would be the same as under existing conditions. In comparison, the residential component of the proposed Project would generate a greater demand for police protection services due to the 24-hour occupancy of the Project site and the permanent increase in the on-site residential population. The commercial component of the proposed Project would generate a greater demand for police protection services due to increased traffic, employees, and patrons. The Project's demand for police services associated with the approximately 6,969 new residents and approximately two million square feet of commercial development may exceed the existing capability of the Sheriff's Department and response times. Thus, proposed Project impacts relative to police services would be potentially significant. Impacts would be reduced through the implementation of mitigation measures. However, since the No Project alternative would entail no increase in population or demand for police services compared to existing conditions, impacts relative to police services would be less under the No Project alternative.

(c) Schools

As the No Project alternative would not generate any school-age children, there would be no change in the demand for schools relative to existing conditions. The Project would generate approximately 489 students, including 213 elementary school students, 119 middle school students, and 157 high school students. The Los Angeles Unified School District (LAUSD) schools that would potentially serve the Project site, are all currently operating below capacity. However, based upon the estimated number of Project-generated students, the increased enrollment attributable to the proposed Project would exceed existing school capacities at Carson Elementary School and Carson Senior High School and, thus, would result in a potentially significant impact on these schools. However, these impacts would be mitigated to less than significant levels via the payment of school fees at the time of building permit issuance. Since the No Project alternative would not generate any school-age children or cause an increase in demand for schools, compared to existing conditions, impacts relative to schools would be less under the No Project alternative than under the Project.

(d) Parks and Recreation

The No Project alternative would not change the existing use of the Project site and thus, not cause any increased demand for parks and recreational services compared to existing conditions. The Project would generate a greater demand for parks and recreational services due to a permanent increase in residential population of 6,969 residents. As the Project would not meet the City's current requirements for the provision of parks and open space, the Project would

result in potentially significant impacts associated with parks and recreation. However, a mitigation measure is recommended that reduces this Project impact to a less than significant level. As the No Project alternative would not generate population or cause an increase in demand for open space or parks and recreational facilities, compared to existing conditions, impacts relative to parks and recreation would be less under the No Project alternative than under the Project.

(e) Libraries

The No Project alternative would not change the existing use of the Project site, or cause any increased demand for library services compared to existing conditions. The proposed Project, in comparison, would generate a greater demand for library services due to a permanent increase in residential population of 6,969 residents. However, implementation of the identified mitigation measure would reduce the impact of the Project relative to libraries to a less than significant level. However, since the No Project alternative would generate no new population or cause an increase in demand for library services, compared to existing conditions, impacts relative to libraries would be less under the No Project alternative than under the Project.

(10) Utilities/Service Systems

(a) Water Services

With no change in the existing use of the Project site under the No Project alternative, there would be no additional demand for water. Uses associated with the proposed Project, including residential, hotel, restaurant, and other commercial uses and landscaping, would generate a demand for domestic water and, as such, would generate a greater impact on water services than under the No Project alternative. The Project would have a less than significant impact on water services. Although the proposed Project's impact on water supply would be less than significant, since the No Project alternative would have no water demand, the impact of the No Project alternative on water services would be less than under the proposed Project.

(b) Wastewater Services

With no change in the existing use of the Project site under the No Project alternative, there would be no demand for wastewater conveyance or treatment. The Project's residential and commercial uses would require wastewater services and, as such, would generate a greater impact on these services than under the No Project alternative. Although the proposed Project's impact on wastewater services would be less than significant, since the No Project alternative would generate no wastewater, the impact of the No Project alternative on wastewater services would be less.

(c) Solid Waste

The No Project alternative would not change the existing use of the Project site, or cause any increased demand for solid waste services compared to existing conditions. The proposed Project, by comparison, would generate a greater demand for solid waste services due to a permanent increase in residential population of 6,969 residents and nearly two million square feet of commercial development. However, implementation of mitigation measures would reduce the impact of the Project relative to solid waste to a less than significant level. However, since the No Project alternative would not construct commercial square footage or generate new population, it would not cause an increase in demand for services. Therefore, impacts relative to solid waste would be less under the No Project alternative than under the Project.

c. Relationship of No Project Alternative to the Project Objectives

The No Project alternative would not meet the basic objective of the Project to achieve a productive reuse of a large brownfield site, since it would not generate the revenue necessary to pay for and effectuate remediation of the environmental conditions on the Project Site. The No Project alternative would also not promote the economic well being of the Redevelopment Project Area or the City, since it would not contribute to the diversification and development of the economic base of either the Redevelopment Area or the City. The No Project alternative would not meet the Project's objective to maximize shopping and entertainment opportunities or to maintain a sustainable balance of residential and non-residential uses. The No Project alternative would not meet the Project objective to provide a diversity of both short-term and long-term employment opportunities for local residents, since it would not generate construction jobs or permanent employment in the commercial and hospitality industries. The No Project alternative would also not meet the basic objective of the Project to contribute to the City's stock of rental and for sale housing units and affordable housing. In addition, the No Project alternative would not meet the objective of the Project to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City, while taking advantage of the site's proximity to the San Diego Freeway. While the No Project alternative would avoid the Project's significant and unavoidable impacts associated with visual resources, traffic, public transportation, air quality, and construction noise, the No Project alternative would have less environmental benefit than the Project in relation to site remediation and improvement in groundwater and surface water quality and would, therefore, have a greater impact than the Project in relation to hazards and surface water quality.

2. Alternative 2: Mixed-Use Business Park

a. Introduction

This section presents an environmental analysis of an alternative project that would feature a different mix of uses than that proposed under the Project. Alternative 2 would be developed on the same sites as the proposed Project, with uses that are in keeping with the "Mixed-Use - Business Park" land use designation set forth in the City of Carson's 2004 General Plan update. Development under this Alternative would include a mix of light industrial/business park uses and regional and neighborhood-serving commercial uses, including restaurants. The total floor area would be equivalent to the floor area of the Project's commercial component. It is further assumed that the floor area would be equally divided between commercial and light industrial/business park development. The overall FAR under this Alternative would be approximately 0.27, which would occur in a series of single-story buildings. Remediation of the former landfill site, including capping of waste materials and coverage of the former landfill site by impervious concrete foundations, parking lots, and streets would be the same as under the Project. In the following analyses, conclusions regarding impacts are based on impacts after mitigation. A comparison between Alternative 2's mix of land uses and the Project is presented in Table 76 on page 554. A summary of comparative impacts is presented at the end of the Alternatives analysis in Table 83 on page 596.

b. Analysis of Alternative

(1) Land Use

Development under Alternative 2 would result in both an implementation approach and a mix of uses that vary from the proposed Project. The Alternative would be implemented through traditional zoning, and existing City regulations in contrast to the Specific Plan of the proposed Project. The development program would include a mix of light industrial/business park and commercial uses. The General Plan designation anticipates a large amount of business-park development that would be encouraged by the City as a light industrial use with less environmental impact than more traditional light industrial uses, e.g., a variety of businesses and professional offices, services and associated businesses. However, the actual development would be subject to the interests of the development community. Commercial interests would likely compete successfully for development sites on the eastern portion of the Project site, due to the advantage of freeway visibility.

Table 76

Comparison Of Alternative 2 Components: Mixed-use Business Park

Land Use	Proposed Project	Alternative 2	Numerical Difference	Percent Change
Residential	1,550 units	0 units	-1,550 units	-100
Neighborhood Commercial	130,000 sq.ft.	81,245 sq.ft.	-48,755 sq. ft.	-37.5
Restaurant	81,125 sq.ft.	60,060 sq.ft.	-21,065 sq.ft.	-26.0
Hotel	300 rooms 200,000 sq.ft.	0 sq.ft.	300 rooms	-100
Commercial Recreation/ Entertainment	214,000 sq.ft.	0 sq.ft.	-214,000 sq.ft.	-100
Regional Commercial	1,370,000 sq.ft.	856,220 sq.ft.	-513,780 sq.ft.	-37.5
Light Industrial/Business Park	0 sq.ft.	997,600 sq.ft.	+997,600 sq.ft.	+100
Total Non-Residential	1,995,125 sq.ft.	1,995,125 sq.ft.	0	0

Source: PCR Services Corporation, August 2005

(a) Compatibility with Land Use Plans, Polices and Regulations

Alternative 2 would be fully consistent with the General Plan, Mixed Use – Business Park designation. It would most likely be implemented through a rezoning action by the City, which would zone the entire site Mixed-Use Business Park, a new zone, as anticipated at the time that the 2004 General Plan update was completed. The rezoning would allow more flexibility than the existing zoning in the placement of uses, and would accommodate the full range of uses allowed under the General Plan designation.

While the Alternative, by definition, would be consistent with the existing regulations, that absolute consistency would not necessarily be considered of less impact, than the development standards under the proposed Specific Plan. For example, the proposed Specific Plan includes numerous regulations that are more protective of the environment than the existing regulations, and it is specific to the proposed Project site, in contrast to the more generic zoning regulations.

Implementation of Alternative 2 could support the City policies that call for the remediation and productive reuse of a brownfield site, although a smaller project may not be able to generate sufficient revenues to support implementation of the RAP. Alternative 2 would support development of the City's economic base, and the addition of new employment opportunities. However, Alternative 2 would not contribute to City policies that encourage the development of new housing units in the City. While this Alternative would support

development of the central portion of the City, with new commercial activity in the vicinity of the South Bay Pavilion, it may have a lesser potential to create a signature project that maximizes the advantages of the site's location or so fully transform the site to a centralized urban center. In summary, this Alternative is more consistent with existing regulations than the proposed Project, but does not promote certain policies that would occur with the development of the proposed Project. Therefore, impacts of Alternative 2 on the regulatory framework would be considered greater than those of the proposed Project. Impacts under Alternative 2 and the proposed Project would both be less than significant.

(b) Existing Land Use Patterns

The land uses that would occur under Alternative 2 would blend with existing development patterns providing uses that are akin to those to the west and east of the Project site. As with the proposed Project, the uses would not be akin to the residential uses to the south and southwest. However, as with the proposed Project, the uses under Alternative 2 would lie in a distinct area, and would be buffered from those residential uses. As is the case with the proposed Project, development under Alternative 2 would not result in the division, disruption or isolation of an existing established community or neighborhood. Impacts with regard to land use relationships would be less than significant in both cases.

(c) Sustainability of Existing Retail Uses

Alternative 2's reduction in retail activity by approximately 50% would substantially reduce potential market effects on existing retail development, and the sustainability of such development. Therefore, the Alternative's forecasted short-term negative effect upon existing retail uses within the market area served by the proposed Project would be reduced or avoided. However, the Proposed Project's adverse affect would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures. Impacts on the sustainability of existing retail uses under Alternative 2 would be less than those of the proposed Project, but in both cases such impacts would be less than significant.

(2) Visual Resources

(a) Aesthetic Character

(i) Construction

Alternative 2 would require a similar scope of construction activities, as under the Project, although the heights of cranes may be reduced due to the relatively lower height of the overall development. As with the Project, impacts associated with construction activities would

be less than significant due to the limited off-site views of activities, the common appearance of construction activities in an urban setting, and the lack of contrast of construction activities with any off-site valued resources. Therefore, construction impacts would be similar and less than significant under both Alternative 2 and the proposed Project.

(ii) Operation

The form of the development under Alternative 2 would vary from that of the proposed Project, but would still give the Project site a largely developed appearance. There would be fewer buildings, and none of the potentially taller buildings of the Project; i.e. the mid-rise residential, theater and hotel uses. While the variation in site appearance would be different, the variation would not necessarily be considered better or worse than that of the Project. It would, like the Project, be an expected development for the area, and blend into the urban setting. The commercial building heights along the southern and southwestern edges of the site, across from the existing residential neighborhoods, would be similar to those of the Project, as mitigated; with a reduction in building heights in the area immediately east of Main Street. Likewise the face along the I-405 freeway would be similar with fewer retail uses. Alternative 2 would have less impact than the Project in relation to contrast created by signage. Impacts relative to the aesthetic environment along Main Street would also be similar to that of the Project. Alternative 2 would reduce the amount of retail activity that would compete with existing development, and possibly reduce the vacancies that could occur under the proposed Project that could affect the aesthetic appearance of off-site locations. However, such changes in the appearance of off-site locations would be less than significant with the Project as well as Alternative 2. Since Alternative 2 would likely involve the development of the entire site, it would generate the same significant and unavoidable impact on a valued resource associated with the Project site's large expanse of undeveloped land, as would the Project. Alternative 2 would have incrementally less impact than the Project in relation to contrasting building heights, but would not reduce the Project's significant and unavoidable impact.

(b) View Resources

The Project site is generally degraded and is not considered a view resource. Views over the Project site are limited due to intervening development, the flat terrain in the surrounding areas, and the relative height of the berm comprising the Project site. In addition, the Project vicinity does not contain notable features that would be considered view resources. To the extent views from some locations might be affected, (e.g., the public roadways of Main Street and Del Amo Boulevard, or some nearby private residences) impacts would occur due to "first floor" development and would not be greater due to the Project's taller buildings. Since no view resources are identified on the Project site or in the area, and since view impacts are similar regardless of building heights, view impacts associated with Alternative 2 and the Project would

be similar. The impact of Alternative 2 on view resources, as with the Project, would be less than significant.

(c) Shade/Shadow

Under Alternative 2, buildings would be one- and two-stories, typical of regional commercial and industrial/business park uses. Since overall building heights would be less than under the Project, shade/shadow lengths would be incrementally less. However, the Project's shade/shadow impacts would be less than significant. Further, with the implementation of a mitigation measure that requires greater setbacks for taller buildings along the southern and southwestern Project edges, shading impacts on the sensitive, residential uses across the Torrance Lateral from the Project site would be similar under the Project and Alternative 2. As with the Project, Alternative 2 would generate less than significant shade/shadow impacts.

(d) Artificial Light

Alternative 2 would add new lighting associated with illuminated signage, parking lot and walkway security lights, architectural lighting, streetlights, and light emanating from building interiors. With the elimination of taller buildings and the hotel, theater, and residential uses associated with the Project, light levels would be incrementally less under Alternative 2. With the elimination of potential lighting from residential units during the evening hours, and higher levels of security lighting associated with the theater and hotel, which are actively used during the evenings, as well as signage associated with these uses, artificial lighting impacts would be reduced. As with the Project, Alternative 2 would reduce the impact of artificial lighting through light control methods, shielding, limitation of pole heights, and implementation of the City's light intensity regulations. With the implementation of required lighting regulations, the impacts of both the Project and Alternative 2 would be less than significant. However, since Alternative 2 would generate incrementally less artificial light, the impact of Alternative 2 would be less than under the Project.

(3) Traffic, Circulation, and Parking

Under Alternative 2, development would be divided between industrial and commercial uses, including neighborhood, regional and restaurant uses. Trips generated by the commercial uses would occur in the same proportion as those forecasted to occur under the proposed Project. Alternative 2 is projected to generate approximately 2,020 trips during the morning peak hour, about 3,920 trips during the afternoon peak hour, and approximately 42,880 daily trips. Compared to the proposed Project, Alternative 2 is projected to generate approximately 19 percent fewer trips during the morning peak hour, 32 percent fewer trips during the afternoon peak hour, and 36 percent fewer trips on a daily basis.

Since Alternative 2 would generate fewer trips than the Project, it would have a less overall impact on the study intersections. Alternative 2 would reduce the Project's potentially significant impact on Intersection No. 23, Figueroa Street & Carson Street, to a less than significant level. However, it is forecasted that significant impacts would continue to occur at the following nine intersections:

- Intersection No. 5: Vermont Avenue & Del Amo Boulevard;
- Intersection No. 6: Hamilton Avenue & Del Amo Boulevard;
- Intersection No. 7: Figueroa Street & Del Amo Boulevard;
- Intersection No. 8: Main Street & Del Amo Boulevard;
- Intersection No. 11: Hamilton Avenue & I-110 southbound ramps;
- Intersection No. 12: Figueroa Street & I-110 northbound ramps;
- Intersection No. 22: Vermont Avenue & Carson Street;
- Intersection No. 24: Main Street & Carson Street; and
- Intersection No. 25: Avalon Boulevard & Carson Street.

Although Alternative 2 would result in significant impacts at these locations, the magnitude of the impacts would be less than the under the Project. Mitigation measures similar to those of the Project would be implemented to reduce potential impacts. Residual significant impacts could still occur. Trip generation and impact analysis is contained in the traffic technical study, Draft EIR Appendix D.

Alternative 2 would also reduce total trips on the regional freeway system. However, none of the projected significant impacts on freeway segments would be reduced to less than significant levels under this Alternative. Similarly, the Project's significant impact on public transportation would also occur under Alternative 2, although to a lesser magnitude than under the proposed Project.

Access improvements under Alternative 2 would be the same as under the proposed Project and would include intersection improvements at Del Amo Boulevard/Stamps Drive, Lenardo Drive/Main Street, and Lenardo Drive and the I-405/Avalon Boulevard interchange.

As with the Project, parking would be provided in accordance with the City of Carson Development Standards. Parking for the commercial component would be provided at the same ratio as under the Project. No significant parking impacts are anticipated.

(4) Hazards and Hazardous Materials

As with the Project, the Upper Operable Unit and Lower Operable Unit RAPs would be implemented under the Mixed-Use Business Park Alternative. The landfill cap and gas and groundwater extraction systems would be installed. As with the Project, all buildings in Development Districts 1 and 2 would be developed with a protective system. With the implementation of the RAPs, the impacts with regard to hazards would be the same as with the Project. With regard to Development District 3, the recommended additional Phase II activities to further evaluate potential vapor intrusion and worker health and safety concerns by completing deeper soil-vapor sampling would occur. In addition, any buildings within Development District 3 would comply with applicable regulations that may require vapor migration and monitoring measures. Therefore, as with the Project, the Mixed-Use Business Park Alternative would result in less than significant hazards impacts since the RAPs would be implemented and all development would be consistent with applicable regulations. The impacts of the Mixed-Use Business Park Alternative would be the same as the Project with regard to hazards.

(5) Geology/Soils

Grading, including volume of graded soils, importation of fill materials, and the re-compaction of existing fill and stockpiled soils on the parcel south of Del Amo Boulevard, would be similar under both Alternative 2 and the Project. Grading and site preparation, including the export of debris materials and compaction of existing fill materials on the parcel north of Del Amo Boulevard would also be similar, since mass grading would be required for site preparation. Exposure of employees, visitors, and other occupants of Alternative 2's commercial and industrial buildings to potential ground shaking or settlement would be similar to the exposure of occupants of the Project's commercial buildings, since the overall floor area would be similar. However, since no residential uses would be developed on the parcel north of Del Amo Boulevard, the exposure of the Project's additional residential occupants would not occur. Therefore, the total exposure of on-site persons to groundshaking would be less under Alternative 2 than under the Project. Project impacts are concluded to be less than significant with the implementation of existing building code regulations and adherence to the recommendations of required geological and geotechnical reports prepared by a California Certified Engineering Geologist and a California Registered Civil Engineer. The same geological and geotechnical mitigation measures would apply to the development of Alternative 2 and, as such, geological hazards, including the exposure of persons or structures to

groundshaking or settlement, would be less than significant and similar under both Alternative 2 and the proposed Project. Although no significant geological impacts are anticipated, Alternative 2 would cause incrementally less exposure of persons and structures to groundshaking and would, therefore, have incrementally less geological impact.

(6) Surface Water Quality

With the development of the Project site under Alternative 2, the parcel south of Del Amo Boulevard would be 100 percent impermeable, since an impervious cap and building pads would be installed over the entire site, in accordance with DTSC requirements. The impermeable surface would prevent contact between surface water runoff and the underlying contaminated refuse. Mass grading of the entire site would be similar to the Project. The Project site north of Del Amo Boulevard would have a combination of permeable and impermeable areas. Grading and site coverage would be similar to the Project. SWPPP and SUSMP permits to prevent surface water contamination during the construction and operation phases of Alternative 2 would be required. With the implementation of the BMPs that would be required by these permits, water quality impacts under this Alternative, including contact of surface water and exposed soils during construction and operation, would be reduced to less than significant levels. Mitigation measures requiring further investigation of the 11-acre parcel would be the same as under the Project. Due to the adequate capacity of adjacent and nearby storm drain facilities, no off-site flooding resulting in erosion is anticipated. Since the Project is concluded to result in less than significant impacts, with the implementation of the mitigation measures, water quality impacts would be the same under both Alternative 2 and the Project.

(7) Air Quality

The amount of site preparation under this Alternative compared to the proposed Project[179] would remain the same since the remediation of the former landfill site, including the capping of waste materials and coverage of the former landfill site by impervious concrete foundation, parking lots, and streets would be the same as under the Project. Construction activities would be less than the proposed Project due to the decreased amount of building floor area to be constructed. However, pollutant emissions and fugitive dust from site preparation and construction activities would be similar on a daily basis, as the duration and not the intensity of these activities could decrease compared to the proposed Project. As a result, overall construction emissions generated with the Alternative would be less than those of the proposed Project over the construction period. However, impacts during maximum conditions, those used for measuring significance, would be similar to those of the proposed Project and would be

[179] *All calculations used in this analysis are presented in Appendix F, Air Quality Technical Appendices, of this EIR.*

significant for regional construction emissions. Localized pollutant construction impacts would also be similar to the proposed Project as both the intensity and duration of excavation and grading would be similar, and would also be significant.

The number of daily trips generated by this Alternative would be 36 percent less than the proposed Project, resulting in proportionate decreases in mobile air quality emissions. The total contributions to regional emissions under this Alternative would remain significant, as is the case with the proposed Project. Although this Alternative would result in significant regional air quality impacts, the magnitude of the impacts would be less than the proposed Project's impact.

Localized impacts are determined mainly by the peak hour intersection traffic volumes. Compared to the proposed Project, this Alternative is forecasted to generate approximately 19 percent fewer trips during the morning peak hour and 32 percent fewer trips during the afternoon peak hour. Since the localized CO hotspot analysis for the proposed Project did not result in any significant impacts, this Alternative would likewise not have any localized impacts due to fewer trips generated.

With respect to potential air toxic impacts, this Alternative would avoid locating sensitive receptors near a freeway and, thus, would avoid the significant unavoidable impact that would occur as a result of the proposed Project. In summary, impacts under this Alternative would be less than with the Project, but as with the Project would be significant for both construction and operations air quality impacts.

(8) Noise

The amount of site preparation under this Alternative compared to the proposed Project[180] would remain the same since remediation of the former landfill site, including capping of waste materials and coverage of the former landfill site by impervious concrete foundation, parking lots, and streets would be the same as under the Project. Construction activities would be less than the proposed Project due to the decreased amount of building floor area to be constructed. However, construction noise levels would be similar on a daily basis, as the duration and not the intensity of these activities could decrease compared to the proposed Project. The overall construction noise impacts generated with the Alternative would be less than those of the proposed Project over the construction period. However, the types, duration, and levels of noise experienced both within the Project site and the immediate vicinity would be similar to the proposed Project and would likewise be significant.

[180] *All calculations used in this analysis are presented in Appendix F, Air Quality Technical Appendices, of this EIR.*

This Alternative would allow more office and industrial uses and none of the residential uses that are included as part of the proposed Project. The types and number of noise sources within the development area would be similar to the proposed Project and, consequently, are not considered significant with compliance with the provisions of the City's Noise Ordinance. An expected reduction of 36 percent in traffic volumes associated with this Alternative would yield a slight reduction in comparison to Project traffic noise. As with the Project, this Alternative would result in a less than significant roadway noise impact.

(9) Public Services

(a) Fire Services

(i) Construction

Under Alternative 2, the scope of construction would be less than under the Project as there would be no residential component. As with the Project, construction activities would have the potential to increase demand for fire services due to the occasional exposure of combustible sawdust, wood, plastics, etc, to such heat sources as machinery and equipment sparking, exposed electrical lines, welding activities, and chemical reactions. Construction activities requiring street or sidewalk closure or detouring have the potential to impede or interfere with emergency services. As with the Project, Alternative 2 would adhere to existing OSHA and fire code regulations and would incorporate design features and mitigation measures to reduce potentially significant construction impacts to less than significant levels. Access impacts would be reduced to less than significance through the implementation of a Worksite Traffic Control Plan that requires coordination of any street and sidewalk closures and detours with the City and emergency services. With mitigation, both Alternative 2 and the proposed Project would have a less than significant impact on fire services and emergency access. With less construction, impacts on fire services would be less than under the Project.

(ii) Operation

With the development of the Project site, Alternative 2 would increase demand on existing fire services. Alternative 2 would have less floor area than the Project, since it would not include a hotel, theater, or residential uses, all of which increase demand on fire services. The Project's residential component would be occupied during all hours of the day, and hotel and theater uses would feature high-occupancy activities during the evening hours. In addition, multi-story structures have the potential to increase demand on fire services, and the Project is likely to include multi-story residential and hotel development. On the other hand, Alternative 2 would incorporate industrial park uses, which would increase demand on hazmat-related services, due to the handling of the hazardous materials that are required in many types of light

manufacturing and research and development facilities. Both Alternative 2 and the proposed Project would reduce potential impacts associated with increased demand on fire services to less than significance through adherence to fire code regulations; installation of fire suppression equipment, including sprinklers; and incorporation of recommended mitigation measures. Although both Alternative 2 and the proposed Project, with mitigation, would have a less than significant impact on fire services, since Alternative 2 would not include a residential population, multi-story buildings, or theater and hotel uses, fire demand would be incrementally less under this Alternative. However, Alternative 2 would have greater hazmat-related impacts, and therefore impacts on fire services would be similar to those of the proposed Project.

(b) Police Services

Alternative 2, as with the Project, would generate a greater demand for police protection services than under existing conditions, due to site development. The demand for services associated with Alternative 2 would be less than that associated with the proposed Project, since this Alternative would not include a residential component. Impacts relative to police services would be reduced through the implementation of mitigation measures. However, since Alternative 2 would not have a residential population, impacts relative to police services would be less under Alternative 2.

(c) Schools

Alternative 2 would not generate any school-age children due to residential development, but would generate students as a result of on-site employment. Thus, there would be an increase in the demand for schools relative to existing conditions. The Project would generate approximately 489 students, including 213 elementary school students, 119 middle school students, and 157 high school students. The Los Angeles Unified School District (LAUSD) schools that would potentially serve the Project site, are all currently operating below capacity. However, based upon the estimated number of Project-generated students, the increased enrollment attributable to the proposed Project would exceed existing school capacities at Carson Elementary School and Carson Senior High School and, thus, would result in a potentially significant impact on these schools which would be fully mitigated via the payment of school fees. As Alternative 2 would not generate any school-age children due to residential development, impacts relative to schools would be less under Alternative 2 than under the Project.

(d) Parks and Recreation

The analysis of Project impacts on parks and recreation is based on the additional demand that would be created by the Project's residential population that would locate within the service

areas of the existing parks. Since Alternative 2 includes no residential development, it would not add to the demand for park space. Its impacts would be less than those of the Project. As was the case with the Project as mitigated, impacts would be less than significant.

(e) Libraries

The analysis of Project impacts on libraries is based on the additional demand that would be created by the Project's residential population that would locate within the service area of existing libraries. Since Alternative 2 includes no residential development, it would not add to the demand for library services. Its impacts would be less than those of the Project. As was the case with the Project as mitigated, impacts would be less than significant.

(10) Utilities/Service Systems

(a) Water Services

Under Alternative 2, water would be required for industrial/business park uses and neighborhood/regional commercial uses, including restaurants. No residential or hotel uses would be developed. Water demand for the construction phase of Alternative 2 would be less than under the proposed Project. Water generation and consumption rates for Alternative 2's operational phase is shown in Table 77 on page 565. As shown in Table 77, the operational phase of Alternative 2 would result in an approximate demand of 486,279 gallons of domestic water per day and 177.4 million gallons per year. Compared to the Project's demand of 795,470 gallons per day and 290.5 million gallons per year, Alternative 2 would reduce water consumption by approximately 39 percent during the operational phase. Fire flow requirements would be the same as for the Project's commercial component and, as with the Project, is anticipated to be adequate. Demand on water services would be less than significant under both the Project and Alternative 2. Although impact on water services would be less than significant under both the Project and Alternative 2, Alternative 2 would generate incrementally less demand on the water supply during operation. Therefore, Alternative 2 would have less impact on water services than the Project.

(b) Wastewater Services

Under Alternative 2, the proposed development would generate a demand for wastewater conveyance and treatment. Since the mix of land use would not include residential or hotel uses, wastewater generation rates, shown in Table 78 on page 566, would be different under this Alternative. As shown in Table 78, Alternative 2 would generate approximately 440,771 gallons of wastewater per day and 160.9 million gallons per year. Compared to the Project's 721,113

Table 77

Water Consumption for Alternative 2: Mixed Use Business Park

Land Use	**Size** (sq. ft.)	**Water Consumption**	
		Average Daily Water Consumption (gallons per day)[a]	**Annual Water Consumption** (million gal/yr)[b]
Residential	0	0	0
Neighborhood Commercial	81,245	26,675	25.4
Restaurant	60,060	66,038	24.1
Hotel	0	0	0
Commercial Recreation/ Entertainment	0	0	0
Regional Commercial	856,220	174,094	47.8
Light Industrial /Business Park [c]	997,600	219,472	80.1
Total	1,995,125	486,279	177.4

[a] *Water consumption was calculated by reducing the water consumption totals of the Project alternative by the same percentage as each land use is reduced for Alternative 2 (i.e. the Project alternative's neighborhood commercial water use is reduced by 37.5%, Restaurant water use by 26%, and Regional Commercial water use by 37.5%.*

[b] *Annual water consumption assumes 365 days of operation a year.*

[c] *Water consumption for Light Industrial use was calculated by using a wastewater generation factor of 200 gallons per day/1,000 sq. ft. obtained from the County Sanitation Districts of Los Angeles County and adding 10% to account for water consumption.*

Source: PCR Services Corporation, September 2005.

gallons of wastewater per day and 263.3 million gallons per year, Alternative 2 would reduce wastewater conveyance and treatment demand by approximately 39 percent. Existing conveyance systems in Main Street and Del Amo Boulevard would be adequate to serve either the Project or Alternative 2. As with the Project, Alternative 2 would not be permitted prior to the determination of the District's treatment capacity and payment of fees to mitigate potential impacts. Demand on wastewater services would be less than significant under both the Project and Alternative 2. Although impact on wastewater services would be less than significant under both the Project and Alternative 2, Alternative 2 would generate incrementally less wastewater during operation. Therefore, Alternative 2 would have less impact on wastewater than the Project.

(c) Solid Waste

Alternative 2 would develop the site with 1,995,125 square feet of restaurant, commercial and light industrial uses. Solid waste impacts resulting from the construction and operation of Alternative 2 are anticipated to be similar to those of the commercial component of the Project.

Table 78

Wastewater Generation for Alternative 2: Mixed Use Business Park

Land Use	Size (sq. ft.)	Water Consumption: Average Daily Wastewater Generation (gallons per day)[a]	Water Consumption: Annual Wastewater Generation (million gal/yr)[b]
Residential	0	0	0
Neighborhood Commercial	81,245	24,011	8.8
Restaurant	60,060	60,060	21.9
Hotel	0	0	0
Commercial Recreation/ Entertainment	0	0	0
Regional Commercial	856,220	157,180	57.4
Light Industrial /Business Park [c]	997,600	199,520	72.8
Total	1,995,125	440,771	160.9

[a] *Wastewater Generation was calculated by reducing the wastewater generation totals of the Project alternative by the same percentage as each land use is reduced for Alternative 2 (i.e. the Project alternative's neighborhood commercial wastewater generation is reduced by 37.5%, Restaurant wastewater generation by 26%, and Regional Commercial wastewater generation by 37.5%. Refer to Table 76 for a comparison of Alternatives.*

[b] *Annual wastewater generation assumes 365 days of operation a year.*

[c] *Wastewater generation for Light Industrial use was calculated by using a wastewater generation factor of 200 gallons per day/1,000 sq. ft. obtained from the County Sanitation Districts of Los Angeles County.*

Source: PCR Services Corporation, September 2005.

However, the Project would generate a greater demand for services due to construction and operation of the residential component. Implementation of mitigation measures would reduce the impact of the Project relative to solid waste to a less than significant level. However, since Alternative 2 would not generate new population, it would not cause an increase in demand for services to the same degree as the proposed Project. Therefore, impacts relative to solid waste would be less under the Alternative 2 than under the Project.

c. Relationship of Alternative 2 to the Project Objectives

Alternative 2 could potentially meet the basic objective of the Project to achieve productive reuse of a large brownfield site by developing a Project capable of generating the revenue necessary to pay for and effectuate remediation of the environmental conditions on the Project Site, although the proportional financial burden would be greater than the Project and may make remediation infeasible. Alternative 2 would also promote the economic well being of the Redevelopment Area; however, since a large component of Alternative 2 would be industrial, as is a large percentage of the City's economic base, Alternative 2 would not meet the objective

to diversify the economic base of the Redevelopment Area and the City, to the same extent as the Project. Alternative 2 would meet the Project objective to maximize shopping opportunities, but would not meet the Project's objective to provide entertainment or recreation uses. Alternative 2 would meet the objective to provide a diversity of both short-term and long-term employment opportunities for local residents by generating substantial construction work opportunities and long-term jobs in the commercial and industrial uses, although it would not meet the objective to provide hotel-related employment. Alternative 2, depending on its design, could meet the objective of the Project to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City. However, since Alternative 2 would have fewer commercial uses and no hotels or residential uses, it would not provide the same level of urban focal point, level of pedestrian traffic, or vibrancy as the Project. Alternative 2 would also not meet the Project objective to contribute to the City's stock of rental and for sale housing units and affordable housing. Since Alternative 2 would not include residential uses, it would not meet the Project's objective to maintain a sustainable balance of residential and non-residential uses. Alternative 2 would incrementally reduce unavoidable and significant impacts associated with visual resources, traffic, public transit, and air quality during Project operation but, with the exception of air toxins, Alternative 2 would not reduce these impacts to less than significant levels. As with the Project, visual resources, construction noise and air quality impacts would continue to be significant.

3. Alternative 3: Reduced Project

a. Introduction

This section presents an environmental analysis of a Reduced Density Alternative that would be developed on the same site as the proposed Project. Alternative 3 assumes that the scale of the Project would be reduced through a 25 percent, across-the-board reduction in residential units and commercial floor area. The mix of commercial and residential uses would be the same as under the Project; however, maximum development would be reduced to 1,162 residential units and commercial floor area would be reduced to 1,496,343 square feet. The reduction in commercial space under Alternative 3 could be achieved through fewer structures (smaller building footprint) or reduced building heights. The former landfill site would be capped and completely covered by impermeable foundation pads, parking lots, and streets, as was the case with the Project. The purpose of the analysis of Alternative 3 is to determine the potential for the Reduced Density alternative to reduce any of the Project's potentially significant environmental effects. Table 79 on page 568 compares the components of Alternative 3 with the proposed Project. A summary of comparative impacts is presented at the end of the Alternatives analysis in Table 83 on page 596.

Table 79

Comparison of Alternative 3 Components: Reduced Intensity

Land Use	Proposed Project	Alternative 3	Numerical Difference	Percent Change
Residential	1,550 units	1,162 units	-388 units	-25
Neighborhood Commercial	130,000 sq.ft.	81,245 sq.ft.	-48,755 sq. ft.	-25
Restaurant	81,125 sq.ft.	60,844 sq.ft.	-20,281 sq.ft.	-25
Hotel	300 rooms	225 sq.ft.	-75 rooms	-25
	200,000 sq.ft.	150,000 sq.ft.	-50,000 sq.ft.	
Commercial Recreation/ Entertainment	214,000 sq.ft.	160,500 sq.ft.	-53,500 sq.ft.	-25
Regional Commercial	1,370,000 sq.ft.	1,027,500 sq.ft.	-342,500 sq.ft.	-25
Total Non-Residential	1,995,125 sq.ft.	1,496,344 sq.ft.	498,781 sq.ft.	-25

Source: PCR Services Corporation, August 2005

b. Analysis of Alternative

(1) Land Use

Development under Alternative 3 would be implemented through a Specific Plan that would be similar to that of the proposed Project, with similar development guidelines and standards. The development program would also be similar by providing a mixed-use Project with residential and commercial development in similar proportions to that of the proposed Project. The 25% reduction in development intensity would result is less building mass on the Project site, either though reduced building heights and/or less building area.

(a) Compatibility with Land Use Plans, Polices and Regulations

As the implementation mechanism (i.e., specific plan) and general site and type of development would be similar to the proposed Project, the relationship of the Alternative to the regulatory framework would also be similar. Further, Alternative 3 could implement policies regarding the remediation and productive reuse of a brownfield site, although a smaller project may not be able to generate sufficient revenues to support implementation of the RAP. Alternative 3 would enhance the City's economic base, the addition of new employment opportunities, and new housing units in the City. The development of the Alternative would create a signature project that would maximize the advantages of the site's location and provide an enhanced urban center within the central portion of the City. However, its substance as a signature project would be diminished. Fewer employment opportunities would be created and fewer housing units would be constructed. Notwithstanding, the Project's development program would be compatible with the existing land use plans, policies or regulations intended to prevent

an impact to the environment. Impacts regarding the regulatory framework would be similar, and as was the case with the proposed Project, impacts would be less than significant.

(b) Existing Land Use Patterns

While reduced in overall intensity, the development program for Alternative 3 would occupy the same site, with the same development uses as the proposed Project. Therefore, its affects on the relationship to existing uses would be substantially the same as those of the proposed Project. As was the case with the proposed Project, Alternative 3 would not disrupt important linkages between existing districts surrounding the Project site. Further, the Alternative's proposed uses would not place uses of a nature or proximity that would alter the character of the existing land uses surrounding the Project site. As such, Alternative 3 would not result in the division, disruption or isolation of an existing established community or neighborhood; and as with the proposed Project, impacts would be less than significant.

(c) Sustainability of Existing Retail Uses

Alternative 3 would reduce the amount of retail activity by approximately 25 percent, thereby reducing potential market effects on existing retail development and the sustainability of such development. Therefore, the proposed Project's forecasted short-term negative effect upon existing retail uses within the market area served by the proposed Project would be reduced or avoided altogether under Alternative 3. However, the Proposed Project's adverse affect would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures. Impacts on the sustainability of existing uses under Alternative 3 would be less than those of the proposed Project, but in both cases such impacts would be less than significant.

(2) Visual Resources

(a) Aesthetic Character

(i) Construction

Alternative 3 would require a similar scope of construction activities, as would the Project, although the heights of cranes may be reduced due to the option of Alternative 3 to reduce building heights. As with the Project, construction activities would cause less than significant impacts due to the limited off-site views of construction activities, the common appearance of construction activities in an urban setting, and the lack of contrast of construction activities with any off-site valued resources. Therefore, construction impacts would be similar under both Alternative 3 and the proposed Project.

(ii) Operation

Under Alternative 3, the Project site would be entirely developed with uses similar to those of the Project. The reduction in the amount of development would result in less massing of buildings. Such reduction would result in fewer commercial buildings and/or a reduction of their building heights on the Project site. There would also be a reduction in the number of residential buildings, and/or a reduction in their heights. The reductions in massing would not substantially change the overall appearance of site development. The site would still appear as a mixed-use development amongst a variety of urban land uses within an urban setting. For example, District 2 would still look like a major shopping center, albeit one with fewer or smaller buildings. The site appearance along all of the Project edges in District 2 would be similar to those of the Project; i.e., along the southern/southwestern, residential edge, and the I-405 Freeway. Building massing on an individual building basis could be the same, while the overall massing of the Project would be reduced. Further, potentially significant impacts from taller buildings opposite residential development and signage could be mitigated through the same mitigation measures as the Project. In Districts 1 and 3, the additional open space that could occur would have a small affect on the appearance of the residential development. The additional open space and/or lower buildings could also result in some additional articulation of development; but the overall appearance would be that of a typical low- to mid-rise housing development. Therefore, the contrast with existing development would be similar to that of the proposed Project. As Alternative 3 would likely involve the development of the entire site, it would generate the same significant and unavoidable impact on a valued resource associated with the Project site's large expanse of undeveloped land, as would the proposed Project. Alternative 3 would reduce the amount of retail activity that would compete with existing development, and possibly cause vacancies that could affect the aesthetic appearance at off-site locations. However, such changes in the appearance of off-site locations was concluded to be less than significant with the Project. Although Alternative 3 could have incrementally less impact on the aesthetic character of the area than the Project, Alternative 3 would not reduce the Project's significant and unavoidable aesthetic impact, and the variations in on-site appearance that could occur under this Alternative would not be substantial. Therefore, the overall impact of Alternative 3 in relation to the aesthetic character of the Project area would be substantially the same as under the Project.

(b) View Resources

The Project site is generally degraded and is not considered a view resource. Views over the Project site are limited due to intervening development, the flat terrain in the surrounding areas, and the relative height of the berm along most of the perimeter of the Project site. In addition, the Project vicinity does not contain notable features that would be considered view resources. To the extent views from some locations might be affected, (e.g., the public roadways of Main Street and Del Amo Boulevard, or some nearby private residences) impacts would occur due to "first floor" development and would not be greater due the Project's taller buildings.

Since no view resources are identified on the Project site or in the area, and since view impacts are similar regardless of building heights, view impacts associated with Alternative 3 and the Project would be similar. The impact of Alternative 3 on view resources, as with the Project, would be less than significant.

(c) Shade/Shadow

Under Alternative 3, the 25 percent across-the-board reduction in development may be reflected as either a reduction in building height or building density. Since overall building height or density would be less than under the Project, overall shade/shadow impacts would be incrementally less. However, building heights along the along the southern/southwestern edges of the Project site, opposite the shade-sensitive residential neighborhood, could be the same as with the proposed Project. The Project shade/shadow impacts would be less than significant. While Alternative 3 would cause incrementally less shading than the Project, the impact of Alternative 3 on shade/shadow is substantially similar to the Project's, since the greatest potential impacts adjacent to off-site sensitive uses could be similar.

(d) Artificial Light

Alternative 3 would add new lighting associated with illuminated signage, parking lot and walkway security lights, architectural lighting, streetlights, and light emanating from commercial and residential building interiors. Under Alternative 3, the 25 percent reduction in development may be reflected as either a reduction in building height or building density. Since overall building height or density would be less than under the Project, lighting from building interiors would be incrementally less than under the Project. Security and parking lot lighting, streetlights, and building identification signage, would be similar to the Project. As with the Project, Alternative 3 would reduce the impact of artificial lighting through light control methods, shielding, limitation of pole heights, and implementation of the City's light intensity regulations. With the implementation of these lighting requirements, the impact of both the Project and Alternative 3 would be less than significant. However, since Alternative 3 would generate incrementally less artificial light, the impact of Alternative 3 would be less than under the Project.

(3) Traffic, Circulation, and Parking

Since Alternative 3 would have the same mix of land uses as the Project, the 25 percent reduction in the Project would result in an approximate 25 percent reduction in trips. Alternative 3 is projected to generate about 1,930 trips during the A.M. peak hour, about 4,460 trips during the P.M. peak hour, and approximately 53,700 daily trips. In keeping with this reduction,

Alternative 3 is projected to generate approximately 23 percent fewer trips during the A.M. peak hour, 23 percent fewer trips during the P.M. peak hour, and 22 percent fewer daily trips.

Although the number of trips under Alternative 3 would be reduced, the Project's significant impacts on ten study intersections would not be reduced to less than significant levels. As with the Project, significant impacts before mitigation would continue to occur at the following ten intersections:

- Intersection No. 5: Vermont Avenue & Del Amo Boulevard;
- Intersection No. 6: Hamilton Avenue & Del Amo Boulevard;
- Intersection No. 7: Figueroa Street & Del Amo Boulevard;
- Intersection No. 8: Main Street & Del Amo Boulevard;
- Intersection No. 11: Hamilton Avenue & I-110 southbound ramps;
- Intersection No. 12: Figueroa Street & I-110 northbound ramps;
- Intersection No. 22: Vermont Avenue & Carson Street;
- Intersection No. 23: Figueroa Street & Carson Street;
- Intersection No. 24: Main Street & Carson Street; and
- Intersection No. 25: Avalon Boulevard & Carson Street.

Since Alternative 3 would generate fewer trips than the Project, the magnitude of its impacts on the 27 study intersections would be proportionately less than under the Project. Mitigation measures similar to those of the Project would be implemented to reduce potential impacts. Residual significant impacts could still occur. Trip generation and impact analysis for Alternative 3 is contained in the traffic technical study, Draft EIR Appendix D.

Alternative 3 would also reduce total trips on the regional freeway system. However, none of the projected significant impacts on freeway segments would be reduced to less than significant levels under this Alternative. Similarly, the Project's significant impact on public transportation would continue to occur, although to a lesser magnitude than under the proposed Project.

Access improvements to the Project site under Alternative 3 would be the same as under the Project and would include intersection improvements at Del Amo Boulevard/Stamps Drive, Lenardo Drive/Main Street, and Lenardo Drive and the I-405/Avalon Boulevard interchange.

Parking, which would be provided in accordance with the City of Carson Development Standards, would be 25 percent less than under the Project, due to the proportionate reduction of land uses. With a 25 percent reduction in development, it is estimated that 7,782 parking spaces would be required for the commercial component of Alternative 3. Compared to the ULI shared parking model, peak demand for the commercial component would be approximately 6,252 spaces. Under the Carson Development Standards, 2,429 parking spaces would be required for the residential component. Based on ULI demand factors, peak demand for the residential uses is estimated to be approximately 2,091 parking spaces. Since the required parking under the City's Development Standards would exceed the peak demand, no significant parking impacts are anticipated.

(4) Hazards and Hazardous Materials

As with the Project, the Lower Operable Unit and Upper Operable Unit RAPs would be implemented under the Reduced Project Alternative. The landfill cap as well as the landfill gas and groundwater extraction systems would be installed. As with the Project, all buildings in Development Districts 1 and 2 would be developed with a protective system. With the implementation of the RAPs, the impacts with regard to hazards would be the same as with the Project. With regard to Development District 3, the recommended additional Phase II activities to further evaluate potential vapor intrusion and worker health and safety concerns by completing deeper soil-vapor sampling would occur. In addition, any buildings within Development District 3 would comply with applicable regulations that may require vapor migration and monitoring measures. Therefore, as with the Project, the Reduced Project alternative would result in less than significant hazards impacts since the RAPs would be implemented and all development would be consistent with applicable regulations. The Reduced Project would be the same as the Project with regard to hazards.

(5) Geology/Soils

Grading, including the volume of graded soils, importation of fill materials and the removal and re-compaction of existing fill and stockpiled soils, would be similar under both Alternative 3 and the Project since the mass grading required for site preparation would be similar under both Alternative 3 and the proposed Project. Although occupancy would be incrementally less under Alternative 3, the exposure of residents, employees, and visitors to potential ground shaking or settlement as a result of an earthquake event would be substantially similar to the Project, although 25 percent fewer persons and structures (floor area/ number of

units) would be exposed to potential groundshaking or settlement. Project impacts are concluded to be less than significant with the implementation of existing building code regulations and adherence to the recommendations of required geological and geotechnical reports prepared by a California Certified Engineering Geologist and a California Registered Civil Engineer. The same mitigation measures would apply to the development of Alternative 3 and, as such, geological hazards associated with Alternative 3 would also be less than significant. Although no significant geological impacts are anticipated, Alternative 3 would cause incrementally less exposure of persons and structures to groundshaking and would, therefore, have incrementally less geological impact.

(6) Surface Water Quality

With the development of Alternative 3, the Project site south of Del Amo Boulevard would be 100 percent impermeable, as under the Project, since an impervious cap and building pads would be installed over the entire site, in accordance with DTSC requirements. The impermeable surface would prevent contact between surface water runoff and the underlying contaminated refuse. The Project site north of Del Amo Boulevard would have a combination of permeable and impermeable areas. If the area north of Del Amo Boulevard were developed with fewer structures (no reduction in height), the site would have greater exposed surface and slightly less potential runoff than under the Project; and if development in this area occurred with reduced building heights, site coverage, exposure of soils, and runoff would be the same as under the Project. If greater open space (natural soils) occurred in the area north of Del Amo Boulevard, it would reduce runoff, and it would have greater potential than the Project to expose soils to surface water runoff. As with the Project, SWPPP and SUSMP permits to prevent surface water contamination during the construction and operation phases of Alternative 3 would be required. With the implementation of BMPs required by these permits, water quality impacts under this Alternative, including contact of surface water and exposed soils during construction and operation, would be reduced to less than significant levels. Mitigation measures requiring further investigation of the 11-acre parcel would be the same as under the Project. Due to the adequate capacity of adjacent and nearby storm drain facilities, no off-site flooding resulting in erosion is anticipated. With the implementation of mitigation measures, surface water quality under both Alternative 3 and the proposed Project would be less than significant and substantially the same.

(7) Air Quality

The amount of site preparation under Alternative 3 compared to the proposed Project[181] would remain the same since the remediation of the former landfill site, including capping of waste materials and coverage of the former landfill site by impervious concrete foundations, parking lots, and streets would be the same as under the Project. Under this Alternative, the proposed Project would be reduced through a 25 percent reduction in residential units and commercial floor area. As a result, construction activities would be proportionally reduced by approximately the same amount. However, pollutant emissions and fugitive dust from site preparation and construction activities would be similar on a daily basis, as the duration and not the intensity of these activities could decrease compared to the proposed Project. The construction emissions generated by Alternative 3 would be less than those of the proposed Project over the construction period. However, impacts during maximum conditions, those used for measuring significance, would be similar to those of the proposed Project and would be significant under Alternative 3 for regional construction emissions. Localized pollutant construction impacts would also be similar to the proposed Project as both the intensity and duration of excavation and grading would be similar, and would also be significant.

With the proposed reductions in several Project uses, the operational impacts associated with road traffic from this Alternative would be reduced by approximately 23 percent, with a commensurate decrease in air emissions. Impacts from stationary uses would be reduced by 25 percent, however impacts from these uses comprise a very small portion of the overall operations emissions. The reductions would not be sufficient to avoid the significant regional air quality impacts associated with the proposed Project. Since the localized CO hotspot analysis for the proposed Project did not result in any significant impacts, this Alternative would likewise not have any localized impacts due to fewer trips generated.

With respect to potential air toxic impacts, this Alternative would also include a residential component near the I-405 freeway. Thus, as with the proposed Project, this Alternative would result in significant unavoidable air quality impact related to air toxics.

(8) Noise

Because the type of construction associated with Alternative 3 would be similar to the proposed Project, daily construction-related noise levels experienced both within the Project site and the immediate vicinity would be similar to the proposed Project and are considered

[181] *All calculations used in this analysis are presented in Appendix F, Air Quality Technical Appendices, of this EIR.*

significant. However, there would be fewer days of construction activity associated with this Alternative since it reduces the amount of developed uses by 25 percent.

A reduction in land use intensity would also result in a slight reduction in noise levels associated with operational on-site equipment and activity. The on-site equipment and activity noise levels associated with the Project are not considered significant and would be less so with this Alternative. An expected reduction of 23 percent in traffic volumes associated with this Alternative would yield a slight reduction in comparison to Project traffic noise. As with the proposed Project this Alternative would result in a less than significant roadway noise impact.

(9) Public Services

(a) Fire Services

(i) Construction

Under Alternative 3, the scope of construction would be incrementally less than under the Project, due to a 25 percent decrease in total development. As with the Project, construction activities would have the potential to increase demand for fire services due to the occasional exposure of combustible sawdust, wood, plastics, etc, to such heat sources as machinery and equipment sparking, exposed electrical lines, welding activities, and chemical reactions. Construction activities requiring street or sidewalk closure or detouring have the potential to impede or interfere with emergency services. As with the Project, Alternative 3 would adhere to existing OSHA and fire code regulations and would incorporate design features and mitigation measures to reduce potentially significant construction impacts to less than significant levels. Access impacts would be reduced to less than significance through the implementation of a Worksite Traffic Control Plan that requires coordination of any street and sidewalk closures and detours with the City and emergency services. With mitigation, both Alternative 3 and the proposed Project would have a less than significant impact on fire services and emergency access. However since the scope of construction activities would be incrementally reduced under Alternative 3, impact on fire services would be less under this Alternative.

(ii) Operation

Under Alternative 3 the scope of development of the Project site would be incrementally decreased. As outlined previously, this reduction may include reduced building heights or decreased density. With reduced building heights or density, and proportionately less residential population and occupancy, Alternative 3 would have incrementally less demand on fire services than the Project. Both Alternative 3 and the proposed Project would reduce potential impacts associated with fire service demand to less than significant levels through adherence to fire code

regulations; installation of fire suppression systems and equipment, including sprinklers; and incorporation of recommended mitigation measures. Although both Alternatives, with mitigation, would have a less than significant impact on fire services, since Alternative 3 would have incrementally less demand, the impact on fire services would be less under Alternative 3 than under the proposed Project.

(b) Police Services

Alternative 3, as with the Project, would generate a greater demand for police protection services than under existing conditions, due to the permanent increase in residential population and commercial development. The demand for services associated with Alternative 3 would be incrementally less, since this Alternative would have fewer residents and less commercial floor area than the Project. As both Alternative 3 and the proposed Project would develop a currently undeveloped site, impacts to police services would be potentially significant under either scenario. However, impacts to police services would be reduced through the implementation of required mitigation measures. Since Alternative 3 would have fewer residential units, and less commercial floor area, impacts relative to police services would be less than under the Project.

(c) Schools

Both the Project and Alternative 3 would generate school-age children and potentially impact Los Angeles Unified School (LAUSD) facilities. The Project would generate approximately 489 students, including 213 elementary school students, 119 middle school students, and 157 high school students. In contrast, Alternative 3 would generate approximately 367 students, including 160 elementary school students, 89 middle school students, and 118 high school students. Though Alternative 3 would have fewer residential units and less commercial floor area, resulting in the generation of fewer students, impacts to schools would nonetheless be potentially significant. However, as with the Project, Alternative 3 would fully mitigate any impacts on schools through the payment of the requisite school facility development fees current at the time building permits are issued, pursuant to the provisions of Government Code Section 65995. With the levy of mandatory school fees, any potential impacts on schools would be reduced to less than significant levels under both scenarios.

(d) Parks and Recreation

As with the Project, Alternative 3 would generate a demand for parks and recreational services due to a permanent increase in residential population. However, with a 25 percent reduction in residential development, there would be a 25 percent reduction in the demand for park space. In order to meet the minimum land dedication requirements per adopted City policies and regulations, this Alternative would need to provide 9.6 acres of land for park space,

or its equivalent in on-site improvements, and/or the payment of in-lieu fees. This compares to the 12.8 acres that would be required with implementation of the Project. Alternative 3 would also be required to provide for private and common open space within its residential component based on the City's requirements. As requirements for park and open space are measured on a per capita basis, Alternative 3 would create less demand for park space, and at the same time be required to provide less park space than the Project. Therefore, net impacts would be similar to those of the Project, and as with the Project would be less than significant.

(e) Libraries

Both the Project and Alternative 3 would generate a demand for library services due to a permanent increase in residential population. According to the County Library guidelines, the proposed Project would generate the need for 3,485 square feet of library facility space, 19,165 library collection items, 17 reader seats, 14 meeting room seats, 7 public access computers, and 14 standard size parking spaces. Alternative 3 would generate 25 percent fewer residents, and thus, require the provision of 2,614 square feet of space, 14,374 collection items, 13 reader seats, 11 meeting room seats, 5 public access computers, and 11 parking spaces. Since Alternative 3 would generate less of a population increase, impacts relative to libraries would be incrementally less under Alternative 3. However, impacts would still be considered potentially significant because the Carson Regional Library is operating at a level beyond the established library planning guidelines. As was the case with the Project, the impact would be reduced to a less than significant level through the payment of fees.

(10) Utilities/Service Systems

(a) Water Services

Although reduced in scale, Alternative 3 would require water for the same mix of residential, commercial, hotel, and restaurant uses, as would the Project. Water demand for the construction phase of Alternative 3 would be the same as under the proposed Project as the site area that would require watering during site preparation activities is the same. Demand for water during the operations phase would be proportionately reduced. Water consumption for Alternative 3's operational phase is shown in Table 80 on page 579. As shown in Table 80, the operational phase would result in an approximate demand of 596,603 gallons of domestic water per day and 217.6 million gallons per year. Compared to the Project's demand of 795,470 gallons per day and 290.5 million gallons per year, Alternative 3 would reduce water consumption by approximately 25 percent during the operational phase. Fire flow requirements would be the same as for the Project due to the similarity of structure types. Although impacts on water services would be less than significant under both the Project and Alternative 3,

Table 80

Water Consumption for Alternative 3: Reduced Project Alternative

Land Use	Size	Daily Water Consumption [a] (gallons per day)	Annual Water Consumption [b] (million gal/year)
Residential	1,162 units	236,250	86.2
Neighborhood Commercial	97,500 sq. ft.	32,010	11.7
Restaurant	60,844 sq. ft.	66,930	24.4
Hotel	225 rooms 150,000 sq. ft.	31,050	11.3
Commercial Recreation/ Entertainment	160,500 sq. ft.	21,450	7.8
Regional Commercial	1,027,500 sq. ft.	208,913	76.3
Total	1,496,344 sq. ft.	596,603	217.8

[a] *The water consumption was calculated by reducing the Project alternative's water use totals by 25% for each land use, because Alternative 3 land uses represent an overall reduction by 25% from the Project alternative.*

[b] *Annual water consumption assumes 365 days of operation a year.*

Source: PCR Services Corporation, September 2005.

Alternative 3 would generate incrementally less demand during operations. Therefore, Alternative 3 would have less impact on water services than the Project.

(b) Sewer Services

Under Alternative 3, the proposed development would generate a demand for wastewater conveyance and treatment. However, the generation of wastewater would be proportionately reduced with the 25% reduction in site development. As shown in Table 81 on page 580, Alternative 3 would generate approximately 540,835 gallons of wastewater per day and 197.4 million gallons per year. Compared to the Project's 721,113 gallons of wastewater per day and 263.3 million gallons per year, Alternative 3 would reduce wastewater conveyance and treatment demand by approximately 25 percent. Existing conveyance systems in Main Street and Del Amo Boulevard would be adequate to serve either the Project or Alternative 3. As with the Project, Alternative 3 would not be permitted prior to the determination of the District's treatment capacity and payment of fees to mitigate potential impacts. Demand on wastewater services would be less than significant under both the Project and Alternative 3. Although impact on wastewater services would be less than significant, Alternative 3 would generate incrementally less wastewater during operation. Therefore, Alternative 3 would have less impact on wastewater services than the Project.

Table 81

Wastewater Generation for Alternative 3: Reduced Project Alternative

Land Use	Size	Daily Wastewater Generation [a] (gallons per day)	Annual Wastewater Generation [b] (million gal/year)
Residential	1,162 units	214,988	78.5
Neighborhood Commercial	97,500 sq. ft.	28,815	10.5
Restaurant	60,844 sq. ft.	60,844	22.2
Hotel	225 rooms 150,000 sq. ft.	28,125	10.3
Commercial Recreation/ Entertainment	160,500 sq. ft.	19,438	7.1
Regional Commercial	1,027,500 sq. ft.	188,625	68.8
Total	1,496,344 sq. ft.	540,835	197.4

[a] *The wastewater generation was calculated by reducing the Project alternative's wastewater totals by 25%, because Alternative 3 land uses represent an overall 25% reduction from the Project alternative.*

[b] *Annual wastewater generation assumes 365 days of operation a year.*

Source: PCR Services Corporation, September 2005.

(c) Solid Waste

As Alternative 3 consists of 25 percent less development than the proposed Project, solid waste impacts resulting from the construction and operation of Alternative 3 would be reduced accordingly. Alternative 3 would thus require the disposal of roughly 4,667 tons of construction debris in total and approximately 7,548 tons per year during operation, compared to the Project's 6,222 tons of debris generated during construction and roughly 10,064 tons per year of solid waste generated during operation. Thus, the Project would generate and require the disposal of greater amounts of solid waste. Implementation of mitigation measures would reduce the impact of the Project relative to solid waste to a less than significant level. However, since Alternative 3 would require the disposal of 25 percent less waste at landfill facilities, it would cause less of an increase in the demand for solid waste services. Therefore, Alternative 3 would have less impact on solid waste than the Project.

c. Relationship of Alternative 3 to the Project Objectives

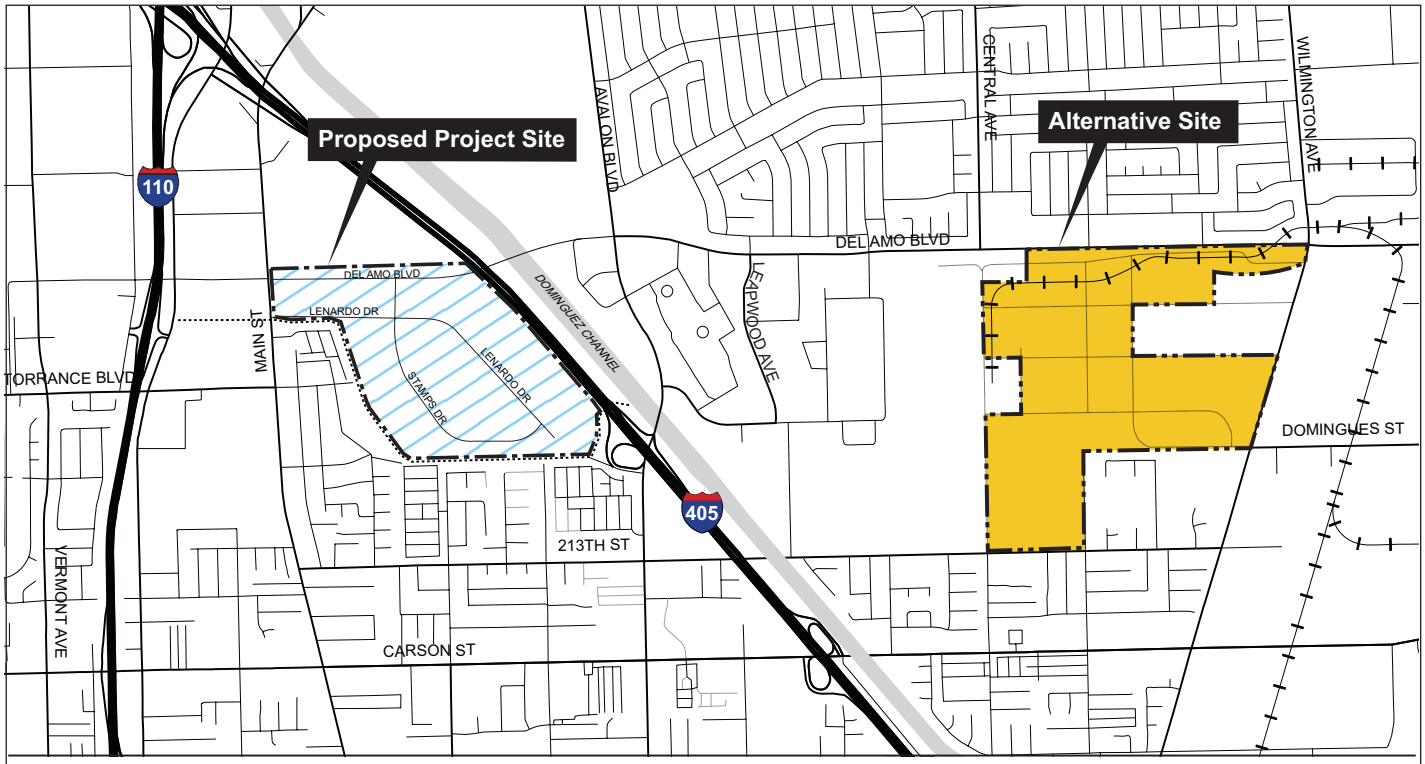
Alternative 3 could meet the Project's basic objectives with regard to the reuse of a large brownfield site by generating the revenue necessary to pay for, and effectuate remediation of, the environmental conditions on the Project Site, although the proportional financial burden would be greater than the Project and may make remediation infeasible. Alternative 3 would also promote the economic well being of the Redevelopment Project Area by diversifying and

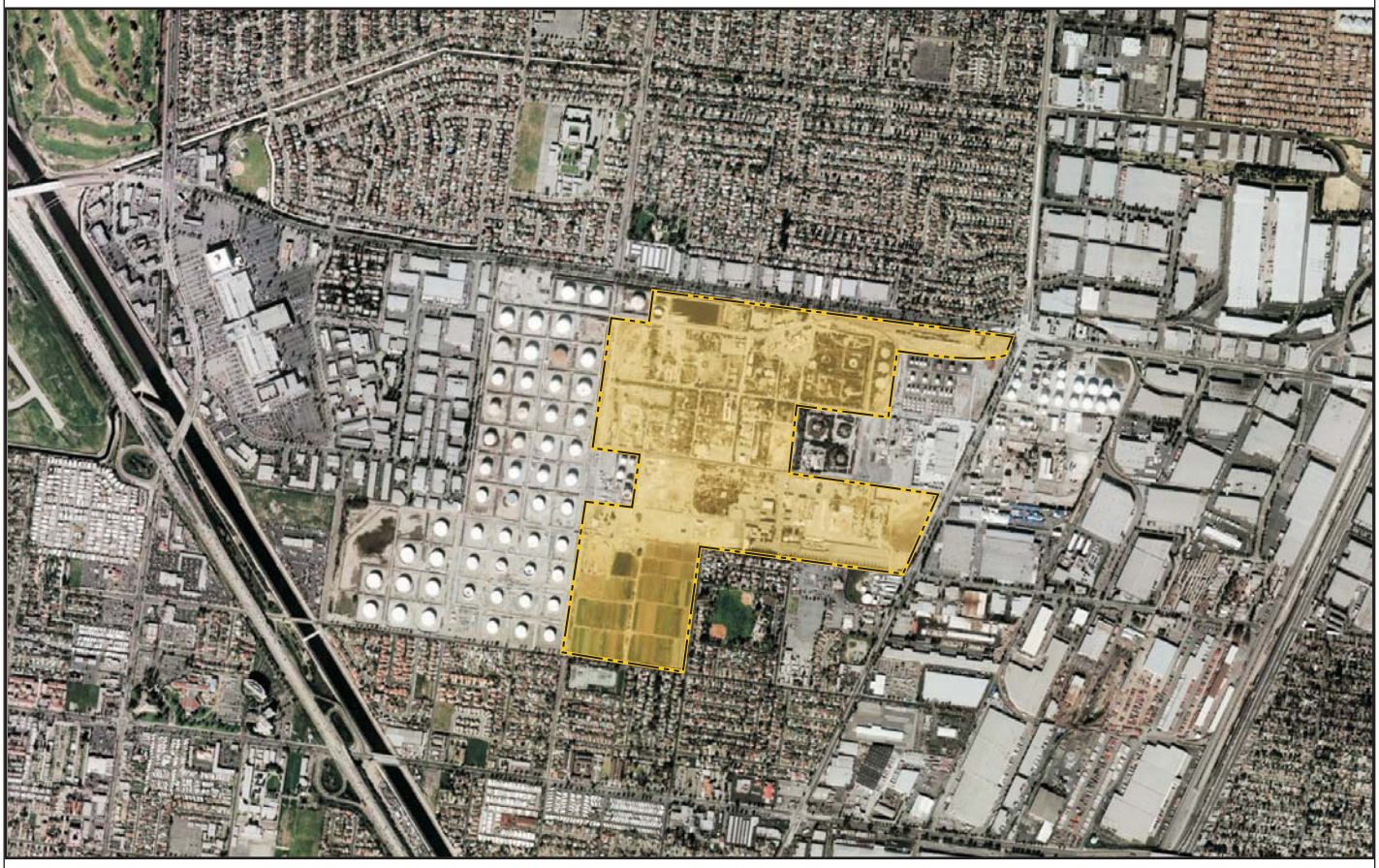
increasing the area's economic base and would assist in creating both short and long term employment opportunities. However, since Alternative 3 would have 25 percent fewer residential units and commercial floor area, it would not meet the objective to maximize work opportunities and shopping and entertainment opportunities to the same extent as the Project. In providing a mix of regional and neighborhood commercial uses, hotel, restaurants, and residential uses, Alternative 3 would most likely meet the objective of the Project to provide a signature/gateway development that contributes to the creation of a vibrant urban core for the City. However, since Alternative 3 would reduce all uses by 25 percent, it would not provide the same level of pedestrian traffic or vibrancy as the Project. Alternative 3 would contribute to the City's stock of rental housing and for sale units, including affordable housing, although not to the same extent as the Project. Alternative 3 would incrementally reduce unavoidable and significant impacts associated with traffic, public transit, and air quality during Project operation, but would not reduce these impacts to less than significant levels. As with the Project, visual resources, construction noise, and air quality impacts would continue to be significant.

4. Alternative Four – Alternative Site Alternative

a. Introduction

This section presents an environmental analysis of developing the proposed Project at an alternative location. Alternative 4 assumes that the Project would not be developed at the proposed Project site and that existing site conditions would remain unchanged. Remediation of the existing brownfield portion of the Project site south of Del Amo Boulevard, including capping of existing waste materials at the former landfill site, would not occur. The purpose of the evaluation of an alternative location is to ascertain if moving a project to another site would reduce or eliminate any potentially significant environmental impacts that may be unique to the Project's location, and whether relocation could potentially eliminate potential Project impacts. Alternative 4 would be constructed according to the Project's design and intensity under a similar Specific Plan. Specific criteria in determining the acceptability of an alternative site are location within the same jurisdiction and adequate size to accommodate the scope of the Project. In accordance with these criteria, the Shell refinery site located approximately 1 mile east of the proposed Project site has been selected for the evaluation of an alternative location. The location and setting of the Alternative Site is illustrated in Figure 42 on page 582. Table 82 on page 583 compares the components of Alternative 4 with the proposed Project. A summary of comparative impacts is presented in Table 83 on page 596.





Aerial view of alternative site

PCR

Figure 42
Location and Setting of the Alternative Site

Source: PCR Services Corporation, 2005

Table 82

Comparison Of Alternative 4 Components: Alternative Location

Land Use	Proposed Project	Alternative 3	Numerical Difference	Percent Change
Residential	1,550 units	1,550 units	0	0
Neighborhood Commercial	130,000 sq.ft.	130,000 sq.ft.	0	0
Restaurant	81,125 sq.ft.	81,125 sq.ft.	0	0
Hotel	300 rooms	300 rooms	0	0
	200,000 sq.ft.	200,000 sq.ft.		
Commercial Recreation/ Entertainment	214,000 sq.ft.	214,000 sq.ft.	0	0
Regional Commercial	1,370,000 sq.ft.	1,370,000 sq.ft.	0	0
Total Non-Residential	1,995,125 sq.ft.	1,995,125 sq.ft.	0	0

Source: PCR Services Corporation, August 2005

b. Analysis of Alternative

(1) Land Use

Development of the Project at the Alternative Site would leave the proposed Project site undeveloped and subject to the impacts described for Alternative 1, No Project, as presented above. At the same time, placing the development at the Alternative Site would put to productive use a former industrial site that, like the proposed Project, is located in Redevelopment Project Area No. One.

The Alternative Site was once the location of the Shell Oil Refinery facility which ceased operation in 1983. The site is mostly vacant and underutilized. It currently contains remnants of the former operations with entrance ways, gates, on-site driveways, and former ancillary facilities. There is small scale agricultural activity in the southwest corner of the site. The surrounding areas include a mix of residential neighborhoods, commercial uses, and industrial uses. There are existing tank farm facilities that are still in use in areas immediately adjacent to the Alternative Site.

The Alternative Site's General Plan designations are mostly Business Park and Light Industrial, with small pockets of Heavy Industrial designations interspersed. The existing zoning is Heavy Industrial.

(a) Compatibility with Land Use Plans, Policies and Regulations

Development under Alternative 4 would be implemented through a Specific Plan that would be similar to that of the proposed Project, with similar development guidelines and

standards. The development program would also be the same. However, it should be noted that development of an appropriate site plan at the Alternative Site poses challenges that are not inherent at the Project site. The Alternative Site has a more industrial nature, and is less defined as a coherent, distinct development area. Further, it lacks the Project site's buffering from existing residential development due to the presence of the Torrance Lateral and the site's elevation atop the existing berms.

Development of the Alternative Site with commercial and residential development would meet numerous goals and policies of the City's Redevelopment and General Plans. It would cause remediation and productive reuse of a blighted site; enhance the City's economic base; and add new employment opportunities and housing units in the City. Also, development of the Alternative Site would contribute to the centrality of the City as a place for shopping and entertainment, but in ways that are less advantageous than at the Project site. Furthermore, the Alternative Site is not as conducive to the creation of a signature project. It lacks the Project site's visual and entry features along the I-405 Freeway and the visual connections between the site and the South Bay Pavilion. The Project site's current General Plan designations, Mixed Use Business Park, versus Business Park, Light Industrial and Heavy Industrial designations at the Alternative Site, reflect the Project site's advantages for mixed-use development, and the establishment of regional commercial uses along the I-405 Freeway. Therefore, the land use impacts of development at the Alternative Site would be considered greater than at the Project Site. Notwithstanding, the development program would be compatible with the existing land use plans, policies or regulations intended to prevent an impact to the environment. While impacts regarding the regulatory framework would be greater than with the proposed Project, impacts would be less than significant.

(b) Existing Land Use Patterns

Development at the Alternative Site would provide a mixed use community placed amidst the larger developed urban setting. However, the development could contrast notably with surrounding uses. Careful site design would be needed to avoid potential incompatibility between on-site residential/commercial uses and existing off-site industrial uses. Further, design consideration would be needed to protect residential areas north, south and southeast of the Alternative Site from potential development conflicts. Setbacks and buffering would be required. While design solutions are available, impacts regarding land use patterns at the Alternative Site would be considered greater than at the Project site, because of (1) the immediacy of the existing industrial uses; and (2) lack of buffering allowed by the Project site's raised elevation and surrounding berms, as well as separation from most residential units by the Torrance Lateral.

However, development at the Alternative Site would not result in the division, disruption or isolation of an existing established community or neighborhood. The existing land use pattern is one in which existing development to the north, south, east and west contains differing uses that are tied to separate distinct districts. Development on the Alternative Site would not disrupt existing linkages. Therefore, impacts with regard to land use relationships would be less than significant, as is the case with the proposed Project.

(c) Sustainability of Existing Retail Uses

Alternative 4 would include the same amount of retail activity as the proposed Project and would therefore have similar market effects on existing retail development and the sustainability of such development. Therefore, the same forecasted short-term negative effect upon existing retail uses within the market area identified for the Project would occur with the Alternative. However, as with the Proposed Project, the adverse affect would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures. Impacts on the sustainability of existing uses under Alternative 4 would be similar to those of the proposed Project, and would be less than significant.

(2) Visual Resources

(a) Aesthetic Character

(i) Construction

Alternative 4 would require a similar scope of construction activities, to those of the Project. The Alternate Site is, like the Project site, located within a larger urban setting. Construction activities at the Alternative Site would be apparent from Del Amo Boulevard and Wilmington Avenue as well as local neighborhood streets and adjacent residential neighborhoods. The Alternate Site is less noticeable than the Project site, which is subject to expansive views from Del Amo Boulevard, the I-405 Freeway, and adjacent residential development. At the same time, the Alternate Site does not sit atop a berm in a manner that reduces construction impacts, and does not include a buffer area next to its adjacent residential development (such as the Torrance Lateral). Therefore, net construction impacts on aesthetics would be similar. As was the case with the Project, construction impacts on aesthetics would be typical of that occurring within an urban area, and would not alter unique view resources or views of such resources. Therefore, impacts would be less than significant under both Alternative 4 and the proposed Project.

(ii) Operation

Under Alternative 4, the Project site would remain undeveloped and the Project's significant impact on a valued resource associated with the Project site's large expanse of undeveloped land and open space would be avoided at the Project site. The Alternative Site, although having an open space aspect, contains remnants of the former refinery use and is not characterized by the same expansiveness as the Project site. However, its development would still substantially alter the character of the area, with a large amount of building mass replacing an open area within the urban setting. The Alternative Site is not buffered from adjacent residential uses by a drainage channel or freeway, as is the Project site, and is closer to existing low-rise residential uses and surrounding neighborhoods than the Project. However, as the Alternative Site is larger than needed to accommodate all of the development, additional buffer space could be added to reduce visual impact; but careful design and/or mitigation measures would be required.

As was the case with the Project, Alternative 2 would include design measures to avoid significant contrast with surrounding development, but could not avoid a substantial impact by converting undeveloped area within the urban setting to a substantially developed appearance. Therefore, impacts of Alternative 2 on aesthetic character would be similar to those of the Project and would be significant.

(b) View Resources

As with the Project site, the Alternative Site is in a partially degraded condition, with some remaining elements of the original refinery use. Although visible from surrounding streets and neighborhoods, the Alternative Site is not considered a view resource. Views over the Alternative Site, as is the case with the Project site, are limited due to intervening development and the flat terrain in the surrounding areas. In addition, the area around the Alternative Site does not contain notable features that would be considered view resources that would be potentially impacted by development of the Alternative Site. Since no view resources are identified on the Alternative Site or immediately surrounding area, the impact of Alternative 4 in relation to view resources would be less than significant. Therefore, the view impact of the Project and Alternative 4 would be substantially the same.

(c) Shade/Shadow

Alternative 4 would be developed to the same density and height as the proposed Project and would have the same length and breadth of shading. The Alternative Site is located closer to existing residential uses. Due to the reduction in setback between the Project and residential uses, compared to the Project, shadowing from the Alternative Site could, depending on Project

design, be greater than under the proposed Project. However, a site design could be developed that would avoid significant shading impacts. Alternative 4 would have shade/shadow impacts that are similar to the Project, and less than significant.

(d) Artificial Light

As with development at the Project site, Alternative 4 would add new lighting associated with illuminated signage, parking lot and walkway security lights, architectural lighting, streetlights, and light emanating from commercial and residential building interiors. As with the Project, artificial light impacts would be reduced to less than significance through light control methods, shielding, limitation of pole heights, and implementation of the City's light intensity regulations. Therefore, Alternative 4 would have impact relative to artificial lighting that is similar to that of the Project, and less than significant.

(3) Traffic, Circulation, and Parking

Under Alternative 4, the Project would be developed in a manner similar to the proposed Project, although relocated to the Shell refinery site. The Shell refinery is located approximately one mile east of the proposed Project site and is bounded by Vera Street on the west, Wilmington Avenue on the east, Del Amo Boulevard on the north, and 213th Street on the south. Primary regional access to the site is via the San Diego (I-405), Artesia (SR-91) and Harbor (I-110) Freeways. The distance from the Alternative 4 site to the closest freeway on- and off-ramps is farther than the access available to the proposed Project site.

Alternative 4 is expected to generate the same number of trips as the Project and, thus, would result in approximately 2,508 trips during the morning peak hour, 5,772 trips during the evening peak hour and 68,951 daily trips. Therefore, Alternative 4 is estimated to result in the same level of traffic at key intersections within the Project's study area, and would not reduce any of the Project's estimated significant impacts on intersections to less than significant levels. In addition, Alternative 4 would potentially impact a greater number of intersections than the Project since the Alternative Site is located farther from the freeway system.

The Alternative Site would have a greater number of access points from the adjacent streets than the Project since physical constraints to through roadways, which occur at the Project site, including the I-405 right-of-way and the Torrance Lateral Channel, would not occur. With a greater number of access points, access to the Alternative Site would operate at a better level of service than for the Project. Under this Alternative, improvements to the intersection of Lenardo Drive with the I-405 interchange would not occur.

Due to the similar magnitude of development, Alternative 4 would not reduce any of the projected significant impacts on the freeway system to less than significant levels. Similarly, the Project's significant impact on public transportation would continue to occur at the same magnitude as under the Project and would not be reduced to less than significant levels.

Parking would be provided in accordance with the City of Carson Development Standards and, as with the Project, no significant parking impacts are anticipated.

Therefore, there are some traffic related impacts that would vary more or less at each site. However, on-net the impacts would be similar.

(4) Hazards/Hazardous Materials

Implementation of the DTSC approved RAPs for the Upper Operable Unit and Lower Operable Unit of the 157-acre landfill site (Development Districts 1 and 2) would not likely occur under the Alternative Site scenario. As with the No Project alternative, the remediation would not occur since the current property owner does not have the funds to implement the RAPs at the Project site. While the State has pursued other responsible parties and created a remediation fund from the proceeds of lawsuits against those parties, the fund is not sufficient to complete the remediation. If the development were to occur at the Alternative Site, the additional funds that are necessary to implement the remediation would not be generated. As has occurred over the years, periodic maintenance may be necessary to address landfill related conditions, such as the potential of emission of methane gas. Because of the lack of implementation of the Upper Operable Unit RAP, development at the Alternative Site could result in hazards that would not occur with the Project. Development of District 3 would not occur under the Alternative Site scenario. The recommended additional Phase II activities of deeper soil-vapor sampling would not occur to further evaluate potential vapor intrusion.

The Final EIR for the 1996 Sixth Amendment to Project Area No. 1 indicates that the Alternative Site is located within the Wilmington oil field and there are active, idle, and abandoned oil wells within and adjacent to the area. In addition, there are other oil and gas related facilities, existing and abandoned, such as pipelines, sumps, and oil and gas treatment facilities in the area. The wells and associated facilities could impact future development under the Alternative Site scenario. However, the Final EIR for the 1996 Sixth Amendment to Project Area No. 1 contained mitigation measures with regards to hazards that would apply to any future development at the Alternative Site. The mitigation measures require that the area be thoroughly assessed for the possible presence of contaminated materials and that if necessary, remediation be implemented prior to development. In addition, the Final EIR contained a mitigation measure that if development were to occur over or near a plugged or abandoned oil or gas well, the well may need to be re-abandoned and the surrounding area remediated. Regardless, development of

the Alternative Site would occur in accordance with applicable regulations regarding hazards and risks. Therefore, as with the Project, development at the Alternative Site would result in less than significant hazards impacts. However, as indicated previously, this Alternative would not likely result in the construction of a landfill cap or gas and groundwater extraction facilities at the Project site. The lack of remediation at the Project site and the continuation of an uncapped landfill would be disadvantageous. At the same time, remediation of soil and groundwater would occur at the Alternative site and impacts would be similar.

(5) Geology/Soils

Development of the Alternative Site would require similar construction and site preparation, including mass grading for building foundations and, possibly, site remediation. Since similar structures would be constructed at the same scale as under the Project, the exposure of new residents, employees, and visitors to potential ground shaking as a result of an earthquake would be similar under both the Project and Alternative 4. However, settlement potential at the Project site would be greater due to the presence of waste debris in the underlying soils. The Project is concluded to be less than significant with the implementation of existing building code regulations and adherence to the recommendations of required geological and geotechnical reports prepared by a California Certified Engineering Geologist and a California Registered Civil Engineer. The development of Alternative 4 would implement similar building code requirements and, as such, impacts associated with geology and soils would also be less than significant at the Alternative Site. However, since the geological setting at the Alternative Site is less complex in relation to underlying earth materials and fill, potential geological impacts associated with settling would be incrementally less under this Alternative.

(6) Surface Water Quality

The Shell Refinery site has been exposed to hydrocarbon contamination and, as with the Project site, is undergoing long-term remediation. Under Alternative 4, large areas of currently impervious land at the Alternative Site would be paved and surface water runoff would be redirected to the existing storm drain system in Wilmington Avenue. Exposure of soils during construction and increases in traffic and urban pollutants during operation would potentially impact surface water quality. However, after completion, the debris level would be lower than under existing conditions. Construction and operation of Alternative 4 would require the implementation of BMPs under SWPPP and SUSMP permits, as would the development of the Project site. Since existing potential contamination, which would be reduced to less than significant levels with the implementation of BMPs, would be similar at both the Project site and alternative site, no environmental advantage in regard to surface water quality would be achieved through the relocation of the Project to the Alternative Site. In addition, the City of Carson Master Plan of Drainage (September 1987) indicated the need for additional drainage capacity in

the existing storm drain system in Wilmington Avenue. If development of the Alternative Site caused the existing storm system to overflow, flooding would increase the exposure of surface water to off-site contamination, thereby impacting surface water quality. Due to potentially inadequate storm drain capacity at the Alternative Site, development of the Alternative Site would have a greater surface water quality impact than development of the Project site.

(7) Air Quality

The amount of site preparation and construction that would be required at the Alternate Site would be similar to that of the Project site. Although the amount of excavation and soil movement would be less than the proposed Project as it would not require implementation of the RAP. Regardless, overall regional construction emissions would be similar to the proposed Project and would likewise be significant for criteria pollutants. Sensitive receptors are located adjacent to the Alternate Site along the northern and southern site boundaries. They include residential uses near Del Amo Boulevard to the north and along 213th street to the south. Localized pollutant construction impacts would also be similar to the proposed Project as the daily intensity of excavation and grading would be similar, and would also be significant.

The number of daily trips generated by this Alternative would be the same as the proposed Project, resulting in similar increases in mobile air quality emissions. The total contribution to regional emissions under this Alternative would be significant, as was the case with the proposed Project. The increase in traffic associated with this Alternative would contribute to a proportionate increase in localized emissions of carbon monoxide similar to the proposed Project. However, such emissions were below the significance threshold for localized carbon monoxide for the proposed Project. Applying the incremental increase in carbon monoxide concentrations attributable to the proposed Project to locations around the Alternate Site would likely result in less than significant localized air quality impacts at these locations as well.

With respect to potential air toxic impacts, this Alternative would avoid locating sensitive receptors near a freeway and, thus, would avoid the significant unavoidable impact that would occur as a result of the proposed Project.

(8) Noise

Noise conditions present at the Alternate Site are similar to those at the Project site. Relatively low noise levels occur in the interior of the Alternate Site away from existing noise sources. However, in comparison to the Project site, the Alternate Site is located farther away from the I-405 freeway. With the Alternate Site placed farther away from the freeway, on-site noise levels may be lower than the Project. Sensitive noise receptors are located within the

vicinity of the Alternate Site and include residential uses near Del Amo Boulevard to the north and along 213th street to the south.

Construction noise at the Alternate Site would be similar to construction noise expected at the Project site. Site preparation at either location would involve the use of heavy-duty construction equipment required in association with grading, installation of the required infrastructure and construction of the buildings. It is expected that this could result in noise events at or exceeding 85 dBA at the nearest sensitive receptor. Construction noise would be of short-term duration and mitigation measures are planned to reduce both the timing and duration of this noise. However, construction noise would be significant and would be comparable to the Project. Alternative 4 would not require Deep Dynamic Compaction and therefore would not have the related noise and vibration impacts associated with that Project component.

Operational noise impacts from this Alternative would be similar to the operations noise impacts expected as part of the Project. Traffic-related noise associated with operation should be similar in areas proximal to sensitive receptors that occur near the Alternate Site. As with the Project this Alternative would likely result in a less than significant roadway noise impact.

(9) Public Services

(a) Fire Services

(i) Construction

As Alternative 4 would involve the same type of development and floor area as the Project, the scope and duration of construction activities would be similar. As with the Project, construction activities would have the potential to increase demand for fire services due to the occasional exposure of combustible sawdust, wood, plastics, etc, to such heat sources as machinery and equipment sparking, exposed electrical lines, welding activities, and chemical reactions. Construction activities requiring street or sidewalk closure or detouring have the potential to impede or interfere with emergency services. As with the Project, Alternative 4 would adhere to existing OSHA and fire code regulations and would incorporate design features and mitigation measures to reduce potentially significant construction impacts to less than significant levels. Both Alternative 4 and the proposed Project would have a less than significant and similar impact on fire services.

(ii) Operation

Alternative 4 would create a similar demand on fire services as the proposed Project, due to the same type of uses and scale of development. As with the Project, Alternative 4 would

reduce potential impacts associated with increased demand on fire services to less than significance through adherence to fire code regulations; installation of fire suppression equipment, including sprinklers; and the incorporation of recommended mitigation measures. However, the two locations vary in terms of available fire access. The Project site is adjoined by the I-405 Freeway on the east and by the Torrance Lateral Channel on the south and west. This configuration focuses the Project's access from Fire Station 36, for instance, to the intersection of Main Street/Leonardo Drive and Del Amo Boulevard/Stamps Drive. The Alternative Site would have greater accessibility to fire services since it is surrounded on all sides by public streets. Although both Alternative 4 and the proposed Project, with mitigation, would have a less than significant impact on fire services, the Alternative Site is better situated for fire access. Therefore, Alternative 2 would have less impact on fire services than the proposed Project.

(b) Police Services

As with the Project, Alternative 4 would generate a greater demand for police protection services than under existing conditions, due to the permanent increase in residential population and commercial development. As both Alternative 4 and the proposed Project would develop a currently undeveloped site, impacts to police services would be potentially significant. However, impacts to police services would be reduced to a less than significant level through the implementation of mitigation measures. Since the Alternative would generate the same permanent population increase and develop the same amount of commercial floor area, impacts relative to police services would be similar to the proposed Project under Alternative 4.

(c) Schools

Both the Project and Alternative 4 would generate approximately 489 students, including 213 elementary school students, 119 middle school students, and 157 high school students. As with the Project, Alternative 4 would fully mitigate any impacts on schools through the payment of the requisite school facility development fees current at the time building permits are issued, pursuant to the provisions of Government Code Section 65995. With the levy of mandatory school fees, any potential impacts on schools would be reduced to less than significant levels. Impacts on schools under Alternative 4 and the proposed Project would be similar.

(d) Parks and Recreation

As with the Project, Alternative 4 would generate a demand for parks and recreational services due to a permanent increase in residential population. As the residential population would be the same as with the Project, the demand for park space would be the same. Likewise, the Alternative would be required to provide park space pursuant to the same unit and per capita requirements as the Project. With the implementation of mitigation measures, Alternative 4's

impact on parks and recreation would be less than significant, as is the case with the proposed Project.

(e) Libraries

Alternative 4 would generate a demand for library services due to a permanent increase in residential population. As with the proposed Project, Alternative 4 would generate the need for 3,485 square feet of library facility space, 19,165 library collection items, 17 reader seats, 14 meeting room seats, 7 public access computers, and 14 standard size parking spaces. Therefore, library demand would be the similar under both the Project and Alternative 4. As was the case with the Project, impact fees would be implemented that would result in less than significant impacts.

(10) Utilities/Service Systems

(a) Water Services

Under Alternative 4, the magnitude and mix of residential, commercial, hotel, and restaurant uses would be the same as under the proposed Project. Landscaping areas would also be similar to the Project. Therefore, the demand for domestic water during both the construction and operational phase would be the same under both Alternative 4 and the proposed Project. The Alternative Site is served by existing water mains and no new infrastructure construction to provide adequate fire flow demand is anticipated. Although the development would occur in another location, the physical size of the construction site, and demand for potable water, would be the same as under the Project. Water for landscaping could be provided by a reclaimed water line running down Wilmington Avenue in front of the site. Demand on water services would be less than significant under both the Project and Alternative 4. Impacts would be similar.

(b) Sewer Services

Under Alternative 4, the magnitude and mix of residential, commercial, hotel, and restaurant uses would be the same as under the proposed Project. Therefore, wastewater generation would be approximately 721,113 gallons per day and 263.5 gallons per year under both Alternative 4 and the proposed Project. The area of the Alternative Site is served by existing wastewater mains and, as with the Project, no new off-site infrastructure construction is anticipated. Although Alternative 4 would be developed at another location, since wastewater generation would be the same as under the Project, development at the Alternative Site would not reduce the Project's wastewater demand on wastewater services. As with the Project, Alternative 4 would not be permitted prior to the determination of the District's treatment capacity and payment of fees to mitigate potential impacts. Demand on wastewater services

would be less than significant under both the Project and Alternative 4. Impact on wastewater services would be similar.

(c) Solid Waste

Solid waste generated by Alternative 4 would be the same to the Project, due to the similarity in the land use and size of both Alternatives. Both the Project and Alternative 4 would generate and require the disposal of roughly 6,222 tons of debris during construction and 10,064 tons of debris annually during operation. Since Alternative 4 and the Project would generate similar volumes of solid waste, solid impacts under Alternative 4 would be the same as the proposed Project.

c. Relationship of Alternative 4 to the Project Objectives

Alternative 4 would, like the Project, put to productive use a blighted, underutilized site within Redevelopment Project Area No. One. In so doing it would contribute to the economic well being of the Redevelopment area and the City. Alternative 4 would also meet the objective to generate substantial construction work opportunities and long-term jobs in the commercial and hospitality industries. Alternative 4 would contribute to the creation of a vibrant urban core for the City; however, since this location would not take advantage of the site's proximity to the San Diego Freeway, it would not have the same level of gateway appeal as the Project site. Alternative 4 would meet the Project objective to contribute to the City's housing stock of rental and for sale units, including affordable housing. Alternative 4 would not avoid the Project's significant and unavoidable impacts associated with visual quality, traffic, public transit, air quality, and construction noise. Alternative 4 would cause the remediation of soils and groundwater at the Alternative site, and would have impacts similar to the Project in relation to hazards.

G. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The State CEQA Guidelines require the identification of an environmentally superior alternative to the proposed Project and, if the environmentally superior alternative is the "No Project alternative," the identification of an environmentally superior alternative from among the remaining alternatives.[182] An environmentally superior alternative is an alternative to the proposed Project that would reduce and/or eliminate the significant, unavoidable environmental impacts associated with a project without creating other significant impacts and without substantially reducing and/or eliminating the environmental benefits attributable to the Project.

[182] *CEQA Guidelines, Section 15126.6(e)(2).*

Selection of an environmentally superior alternative is based on an evaluation of the extent to which the Alternatives reduce or eliminate the significant impacts associated with the Project, and on a comparison of the remaining environmental impacts of each alternative. The relative environmental characteristics are comparatively summarized in Table 83 on page 596. This table presents the conclusions from each of the analyzed alternatives. The table indicates whether each alternative's environmental impacts would be "similar," "greater" or "less" than those of the Project, as determined in the prior evaluations of each alternative.

The environmentally superior alternative (excluding the No Project alternative) is determined through a review of the Comparison of Impacts table, and reviewing the number of impact areas in which an alternative is determined to have "less" relative impact in relation to the Project. As shown on Table 83, the No Project alternative (Alternative 1) would be the environmentally superior alternative, since this Alternative would have less impact than the other evaluated alternatives. However, the No Project alternative would not provide for the remediation of soils or groundwater at the Project's brownfield site and, as such, would be less environmentally beneficial than the Project in relation to hazards and surface water quality.

CEQA requires that when the No Project alternative is the environmentally superior alternative, another alternative needs to be selected as environmentally superior.

In accordance with this procedure, the 25 percent Reduced Project alternative (Alternative 3) would be the environmentally superior alternative. Although the Reduced Project alternative would not meet all of the basic objectives of the Project to maximize the development potential of the Project site; review of the relative environmental superiority or inferiority of each alternative and determination of an environmentally superior alternative is not based on the extent to which the Alternative projects achieve the basic objectives of the Project. The 25 percent Reduced Project alternative would, nonetheless, partially achieve most of the Project's objectives.

Table 83

Comparison of Impacts
Proposed Project and Project Alternatives

		Alternative 1	Alternative 2	Alternative 3	Alternative 4
	Proposed Project	**No Project**	**Alternative Use – Mixed Use Business Park**	**Reduced Density – 25 percent Reduction**	**Alternative Location – Shell Refinery Site**
Land Use					
	Regulatory Framework	Less than Significant	Greater (Less than Significant)	Greater (Less than Significant)	Similar (Less than Significant)
	Land Use Patterns	Less than Significant	Similar (Less than Significant	Similar (Less than Significant)	Similar (Less than Significant)
	Sustainability	Less than Significant	Similar (Less than Significant	Less (Less than Significant)	Less (Less than Significant)
Visual Resources					
Aesthetic Character	Significant & Unavoidable	Less (No Impact)	Similar (Significant & Unavoidable)	Similar (Significant & Unavoidable)	Similar (Significant & Unavoidable)
Views	Less than Significant	Less (No Impact)	Similar (Less than Significant)	Similar (Less than Significant)	Similar (Less than Significant)
Shade/Shadow	Less than Significant	Less (No Impact)	Less (Less than Significant)	Similar (Less than Significant)	Similar (Less than Significant)
Artificial Light	Less than Significant	Less (No Impact)	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)	Greater (Less than Significant with Mitigation)
Traffic/Circulation					
Traffic	Significant & Unavoidable	Less (No Impact)	Less (Significant & Unavoidable)	Less (Significant & Unavoidable)	Similar (Significant & Unavoidable)
Access	Less than Significant with Mitigation	Less (No Impact)	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)	Similar (Significant & Unavoidable)
Public Transit	Significant & Unavoidable	Less (No Impact)	Less (Significant & Unavoidable)	Less (Significant & Unavoidable)	Similar (Significant & Unavoidable)
Parking	Less than Significant	Less (No Impact)	Less (Less than Significant)	Less (Less than Significant)	Similar (Significant & Unavoidable)

Table 83 (Continued)

Comparison of Impacts
Proposed Project and Project Alternatives

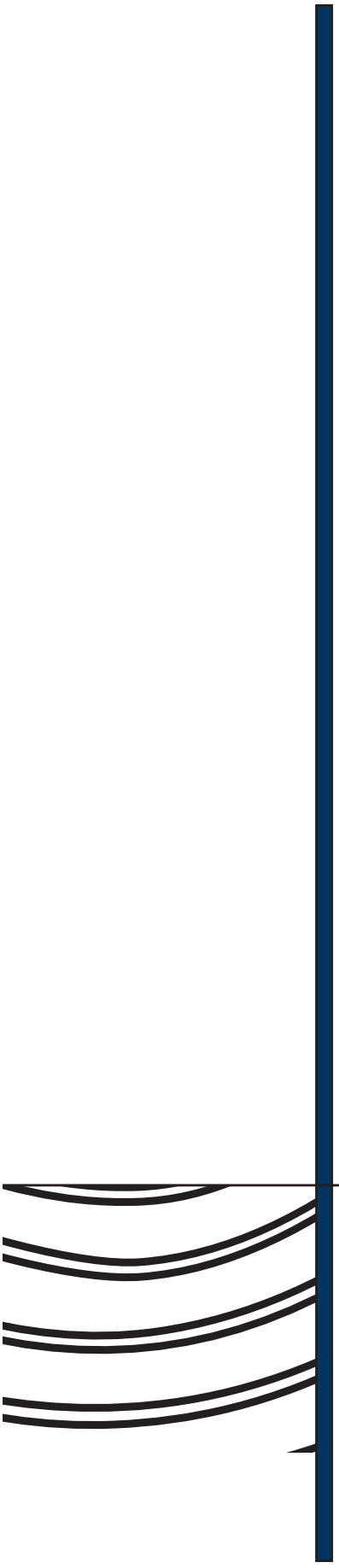
	Proposed Project	Alternative 1 No Project	Alternative 2 Alternative Use – Mixed Use Business Park	Alternative 3 Reduced Density – 25 percent Reduction	Alternative 4 Alternative Location – Shell Refinery Site
Hazards/Hazardous Materials	Less than Significant	Greater (Significant)	Similar (Less than Significant)	Similar (Less than Significant)	Similar (Significant)
Geology/Soils	Less than Significant with Mitigation	Less (No Impact)	Similar (Less than Significant with Mitigation)	Less (Less than Significant)	Less (Less than Significant)
Surface Water Quality	Less than Significant	Greater (Significant)	Similar (Less than Significant)	Similar (Less than Significant)	Greater (Less than Significant)
Air Quality	Significant & Unavoidable	Less (No Impact)	Less (Significant & Unavoidable)	Less (Significant & Unavoidable)	Similar (Significant & Unavoidable)
Noise	Significant & Unavoidable	Less (No Impact)	Less (Significant & Unavoidable)	Less (Significant & Unavoidable)	Similar (Significant & Unavoidable)
Public Services					
Fire Services	Less than Significant with Mitigation	Less (No Impact)	Similar (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)
Police Services	Less than Significant with Mitigation	Less (No Impact)	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)	Similar (Less than Significant with Mitigation)
Schools	Less than Significant with Mitigation	Less (No Impact)	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)	Similar (Less than Significant with Mitigation)
Parks & Recreation	Less than Significant with Mitigation	Less (No Impact)	No Impact	Less (Less than Significant with Mitigation)	Less (Less than Significant with Mitigation)
Libraries	Less than Significant with Mitigation	Less (No Impact)	No Impact	Less (Less than Significant with Mitigation)	Similar (Less than Significant with Mitigation)

Table 83 (Continued)

Comparison of Impacts
Proposed Project and Project Alternatives

	Proposed Project	Alternative 1 No Project	Alternative 2 Alternative Use – Mixed Use Business Park	Alternative 3 Reduced Density – 25 percent Reduction	Alternative 4 Alternative Location – Shell Refinery Site
Utilities/Services Systems					
Water Services	Less than Significant	Less (Less than Significant)	Less (Less than Significant)	Less (Less than Significant)	Similar (Less than Significant)
Sewer Services	Less than Significant	Less (Less than Significant)	Less (Less than Significant)	Less (Less than Significant)	Similar (Less than Significant)
Solid Waste	Less than Significant	Less (Less than Significant)	Less (Less than Significant)	Less (Less than Significant)	Similar (Less than Significant)

Source: PCR Services Corporation, September 2005.



VI. Other Environmental Considerations

VI. OTHER ENVIRONMENTAL CONSIDERATIONS

A. SIGNIFICANT UNAVOIDABLE IMPACTS

Section 15126.2(a) and (b) of the CEQA Guidelines requires that an EIR identify the significant impacts of the Project as well as the Project's significant impacts that cannot be reduced to less than significant levels. With regard to these requirements, Project impacts can be categorized into the following three general categories: (1) impacts concluded to be less than significant; (2) significant impacts that are reduced to less than significant levels via mitigation; and (3) impacts that are significant after mitigation. Project impacts with regard to land use, hazards and hazardous materials, surface water quality, water and solid waste are less than significant. Project impacts with regard to geology and soils; fire protection, police, schools, parks, libraries, and wastewater are reduced to less than significant levels via mitigation. The following is a summary of those Project impacts that are concluded to be significant after mitigation:

1. Aesthetics

The conversion of the Project site from its current vacant state to a developed use causes a loss of spaciousness that contributes to the aesthetic quality of the Project site and its surroundings. This is a significant impact that cannot be mitigated. All other significant aesthetics impacts are reduced to less than significant levels via mitigation.

2. Traffic and Circulation

The Project would have the following significant impacts that cannot be mitigated to less than significant levels: (1) significant impact at the intersection of Figueroa Street & I-110 Northbound Ramps (Intersection No. 12) during the P.M. peak hour; (2) significant impact on four segments of the San Diego Freeway (I-405) and three segments of the Harbor Freeway (I-110); and (3) significant impact on public transportation. All other significant traffic and circulation impacts are reduced to less than significant levels via mitigation.

3. Air Quality

The Project would have the following significant impacts that cannot be mitigated to less than significant levels: (1) significant impact with regard to regional and localized emissions during Project construction; (2) significant impact with regard to regional air quality during operations; (3) significant impact with regard to regional air quality due to concurrent construction and operations; and (4) significant impact with regard to localized emissions of PM10 to the future on-site residents during Project operations. All other significant air quality impacts are reduced to less than significant levels via mitigation.

4. Noise

The Project would have significant noise impacts after mitigation during construction. All other significant noise and vibration impacts are reduced to less than significant levels via mitigation.

5. Secondary Impacts

In addition to the Project's direct significant impacts, implementation of the Project's mitigation measure would have impacts at off-site locations. These impacts are discussed in Section VI.C, below. As indicated, implementation of the off-site mitigation measures would have significant impacts during construction and operations.

B. SIGNIFICANT IRREVERSIBLE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires that an EIR evaluate significant irreversible environmental changes that would be caused by implementation of a proposed project to ensure that such changes are justified. Irreversible changes include the use of nonrenewable resources during the construction and operation of a project to such a degree that the use of the resource thereafter becomes unlikely. A significant environmental change can result from a primary and/or secondary impact that generally commits future generations to similar uses. Irreversible environmental change can also result from environmental accidents associated with the project.

Construction of the proposed Project would require the use of nonrenewable resources, such as wood, the raw materials in steel, metals such as copper and lead, aggregate materials used in concrete and asphalt such as sand and stone, water, petrochemical construction materials such as plastic, and petroleum based construction materials. In addition, fossil fuels used to power construction vehicles would also be consumed.

Operation of the proposed Project would involve the ongoing consumption of nonrenewable resources, such as electricity, petroleum-based fuels, fossil fuels, and water, which are commonly consumed in the existing surrounding urban environment. Energy resources would be used for heating and cooling of buildings, lighting, and transporting of patrons to and from the Project Site. Operation of the Project would occur in accordance with Title 24, Part 6 of the California Code of Regulations, which sets forth conservation practices that would limit the amount of energy consumed by the Project. Nonetheless, the use of such resources would continue to represent a long-term commitment of essentially nonrenewable resources. Operation of the Project would also result in an increased commitment of public maintenance services such as waste disposal and treatment as well as an increased commitment of the infrastructure that serves the Project site.

The limited use of potentially hazardous materials contained in typical cleaning agents and pesticides for landscaping, would occur on the site. Such materials would be used, handled, stored, and disposed of in accordance with applicable government regulations and standards, which would serve to protect against a significant and irreversible environmental change resulting from the accidental release of hazardous materials.

The commitment of the nonrenewable resources required for the construction and operation of the Project would limit the availability of these resources and future development of the Project site with other uses during the life of the Project. However, due to the prior use of the major portion of the Project site as a landfill and the presence of hazardous materials in its underlying soils, postponement of the use of the property to a future time would not provide remediation of the property or assure a better future use. In addition, the use of such resources as building materials and energy for operation would be of a relatively small scale in relation to the Project's fulfillment of DTSC remediation goals and the City's development goals for the area. As such, the use of such resources would not be considered significant.

B. GROWTH-INDUCING IMPACTS

1. Introduction

CEQA Sections 15126(d) and 15126.2(d) require that an EIR discuss the ways in which a project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth can be induced or fostered in several general ways listed as follows:

- Direct growth associated with a project;
- Creation of demand not satisfied within a project;

- Creation of surplus infrastructure capacity not utilized by a project; and
- Creation of capacity by an agency not required by a project.

Examples of growth-inducement are the removal of obstacles to population growth, such as the expansion of a major wastewater treatment plant that would allow more development in a service area, or construction of new roads and highways that would provide access to areas that were previously inaccessible. In addition, some projects may encourage and facilitate other activities that could significantly affect the environment, such as creating the demand for goods and services not previously available in an area. Relative to the Project, each of these general categories is described under separate subtitles below.

2. Direct Growth Associated with the Project

The proposed land uses, related facilities and the respective populations that directly utilize them represent an increment of direct on-site growth. Such growth would add approximately 1,550 residential units (1,150 for-sale units and 400 rental residential units), a 300-room hotel, and 1,995,125 square feet of commercial floor area on the 168-acre Project site. The Project would generate/support a population increase of approximately 6,969 persons, which would be within SCAG's forecasted growth of 15,887 persons between 2005 and 2010 within the South Bay Cities Subregion, comprising 44 percent of the growth. It is also well within the range of growth, 53,400 persons, that is expected between 2005 and 2020, comprising 13 percent of the growth. The Project site is an in-fill Project within a larger metropolitan area. Its development would serve growth which is on-going and anticipated in the Southern California area and the South Bay Cities Subregion in particular.

This increment of direct growth has been the subject of each of the analyses of Project impacts upon the various environmental categories presented in Section IV, Environmental Impact Analysis, of this Draft EIR. The impacts of Project implementation would include effects on or from land use, traffic and circulation, parking, visual resources, hazards and hazardous materials, geology, surface water quality, air quality, noise, public services, and utilities. Further, the Section IV analyses identify other related project growth that is already occurring within the Project vicinity due to on-going growth in the area and accounted for the cumulative effects of these projects on the environment in conjunction with the proposed Project.

Therefore, the impacts of direct growth on the physical environment is accounted for in Section IV of this Draft EIR; and the direct growth attributable to this Project would not be classified as induced growth beyond expected levels in the region or the subregion.

3. Creation of Demand Not Satisfied Within the Project

The Project's resident and employee populations may produce demand for goods, services or facilities not directly provided or satisfied within the proposed Project. For example, the Project's residents and employees would generate new demand for goods and services such as specialty retail, grocery, entertainment, banking, medical, and other commercial services that may only partially be provided within the Project. Notwithstanding, the Project's potential impacts on off-site demand, particularly at the local level, would be eased by the Project's mixed-use design. The potential demand of site residents for goods and services would be substantially served by the on-site commercial facilities. At the same time, a portion of the demand for housing in the City could be accommodated by the Project's residential component.

The Project site is surrounded by a broad urban area, which currently provides a range of goods and services. The larger area provides a complex network of housing, employment and commercial opportunities. The employment base is regionally oriented. Parts of the on-site resident and employee populations are expected to seek employment and housing, respectively, in areas surrounding the Project site and at greater distance, just as existing off-site residents and employees should be expected to seek employment or housing within the Project. Such locational decisions are considered by SCAG in the preparation of their forecasts.

Further, both the residential and the commercial components are consistent with SCAG's subregional projections, and would help to absorb existing demand, rather than create new demand. The potential effect of the Project's effect on commercial development in the area has been addressed in the "Carson Marketplace, City of Carson, Retail Impact Study," Appendix J of the Draft EIR. That study concluded that within specific retail sectors, Project development is forecasted to have a short-term negative effect upon existing retail uses within the market area served by the proposed Project. The study also forecasted that this impact would be alleviated in the mid-term (i.e., by 2020) as the local market grows and matures. Therefore, it can be concluded that the Project would tend to be a disincentive to some of the growth of new retail activity rather than inspire it.

The need for new housing in the region has been documented in the SCAG and City regional housing needs assessments. As discussed above, Project housing and population are within the SCAG forecasts for the South Bay Cities Subregion. It may also be noted that the SCAG projections for the Subregion, and for the City as well, indicate that employment opportunities between 2005 and 2010 are growing at a much faster rate than housing opportunities. For example, the Subregion ratio of jobs to housing in 2005 is 1.4. The ratio of the increase is 9.6. Likewise, for the City, the 2005 ratio is 3.43 and the 2005 to 2010 increase is 10.4. Hence, the demand for housing will increase notably in the future.

Therefore, the mix of Project uses and Project generated residential, employment, and commercial population would not be considered growth inducing. The Project would not provide uses that are not otherwise already occurring in the area as part of the overall anticipated growth pattern, but rather provide a mixed use development that provides for some demand to be met internally, and the Project would absorb, and therefore minimally reduce anticipated demand, rather than create new demand.

The Project would also cause an increase in the demand for public services that could indirectly induce off-site growth in service facilities, if the existing supply of such public services in the area were not adequate to provide for the Project's residents and employees. Service agencies in the area are already providing, subject to mandates and funding, improvements in services to meet the needs of on-going, anticipated growth. These improvements can often require the provision of new physical facilities whose development can have impacts on the physical environment. The Project's large scale and unique operating characteristics (e.g. large number of residential units, large public visitor /shopping areas, etc.) would cause the Project to be a contributor to the growing demand for public services.

Section IV.I of this Draft EIR analyzed the Project's impacts on public services. The analysis identified potentially significant impacts of the Project on police, fire, park, school and library services. Each of the analyses identified mitigation measures to reduce impacts to levels that would be less than significant. The mitigation measures were intended to off-set Project impacts. They require a variety of on-site improvements and in some cases payment of funds that would be used to enhance services. At the discretion of the service agencies, these funds may be used to provide new facilities whose construction would have impacts on the physical environment. For example, the Project's demand and payment of fees may contribute to the development of new parks in the area or a new fire station. The potential impacts of such improvements are discussed in Section VI.C, Potential Secondary Effects. As described therein, such improvements would not be expected to have long term significant impacts on the physical environment, or short-term significant impacts from construction, except as follows: construction of off-site park facilities may have a significant noise impact on adjacent sensitive uses (although such impact may be avoidable through appropriate design) significant short-term regional air quality impacts during the construction of these facilities to the extent that these impacts occur concurrent with peak or near peak on-site construction activities, and noise impacts during construction to the extent that sensitive receptors are located in proximity to the locations of the park improvements.

To the extent that new physical facilities are developed to meet the Project's demand for public services, the development of facilities would likely be sized to meet demands greater than just that of the Project. For example, some service facilities, e.g. fire stations are built to meet area-wide needs, rather than on a project by project basis. To the extent facilities exceed the needs of the Project, the excess capacity in many cases may be needed to meet existing short-

falls in the preferred levels of service, and in some cases may be used to support further growth in the area. In such cases, the excess demand would be considered growth inducing. However, such incentive to growth would be short-term as the small increments of additional capacity would be quickly consumed by otherwise anticipated development. Further, such excess capacity could factor into people's decision to locate in an area, but would not be considered sufficient to notably alter regional growth patterns which are otherwise occurring, and are currently anticipated in SCAG projections.

4. Creation of Surplus Infrastructure Capacity not Utilized by the Project

The area surrounding the Project site is currently developed with water, wastewater, power, natural gas, telephone, and transportation infrastructure. As discussed in Section IV.J, Utilities, the Project's demand for water, sewer and solid waste services would be met through existing facilities and/or improvements otherwise planned to meet regional growth. However, at the time site plans for the Project are submitted to the utility providers, additional facilities may be required, e.g. additional off-site water lines, or an electrical substation. The provision of new utilities in an efficient manner would likely require sizing of improvements to meet the needs beyond any single project. Further, mitigation measures recommended for the Project's traffic impacts in Section IV.C are required to address the Project's traffic impacts. Implementation of those mitigation measures would add additional lanes and turning movements at the impacted intersections. Such improvements increase roadway capacity. As this capacity may be greater than that needed to offset the Project's impacts at that particular intersection, the capacity that is in excess of what is need to address the Project's impacts may be considered growth inducing as increases in traffic can occur through the intersection without degrading the intersection's level of service. Further, the proposed reconfiguration and improvement of the I-405 interchange at Avalon Boulevard would be triggered by the Project to improve mobility with regard to freeway access, to and from Avalon Boulevard. It would increase capacity of the existing ramp system to meet the demand of the Project as well as demand from population in the area. To the extent that these utility and transportation improvements would serve additional development in the Project area, beyond that required by the Project, the excess capacity would be considered growth inducing.

However, as noted in the discussion of services above, such excess capacity would add small incremental improvements to an existing system, which would accommodate a small amount of additional growth that is otherwise on-going, and anticipated. Furthermore, the new infrastructure that would be implemented for the Project would occur within the existing infrastructure network. It would not open new areas for development, whose development is only precluded by the need for an expanded infrastructure network. Thus, improvements to infrastructures systems would, therefore, support small increments of additional growth, that would occur over the near-term horizon.

5. Creation of Capacity by an Agency Not Required by the Project

In considering the infrastructure needs of the Project, public agencies could increase infrastructure capacity under their jurisdictions beyond that required by the Project in order to achieve economies of scale. Such agencies may look longer term, and beyond the services required by this Project, or needs otherwise described above. According to the discretion of the public agencies, new facilities, which would be sized larger than the requirements of the Project, may be intended to provide more efficient service to existing users, in which case, such construction would not be considered growth-inducing. However, public agencies may also choose to create additional capacity in infrastructure in anticipation of future growth, in which case, such development would be growth-inducing. However, it is not anticipated that the public service agencies would seek to create additional capacity, beyond that required for currently anticipated growth.

6. Conclusions Regarding Growth Inducing Impacts

As discussed above, the proposed Project is a component of anticipated, on-going regional growth. Further, the Project does not include features that would notably cause new growth not otherwise anticipated that would cause substantial increases in population. While the Project would consist of a mix of uses that would be attractive for potential future residents as well as retail, restaurant and entertainment uses, the Project would also capture a large portion of the existing demand for such uses in the area. Some additional capacity in existing service and utility systems beyond that required by the Project may be created. Such additional capacity would be considered growth inducing impacts. However, such capacity would be short-term, would add only small incremental enhancements to existing systems, and would not create a new capacity that would open new areas for development. Therefore, these impacts would not be substantial in nature and thus, are concluded to be less than significant.

C. POTENTIAL SECONDARY EFFECTS

1. Introduction

Section 15126.4(a)(1)(D) of the CEQA Guidelines requires that, "If a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." Therefore, the following analysis is provided to identify the extent of potential secondary, off-site impacts associated with the Project.

Most of the Project mitigation measures are intended to address the environmental impacts of proposed development within the Project site in a manner that would reduce the level of Project impacts. These measures have been discussed, and their effects on Project impacts have been noted in the analyses for each of the environmental topics in Section IV of the Draft EIR. These measures would have no off-site effects other than reducing the impact they were aimed at.

However, some mitigation measures clearly identify the need for off-site improvements, and some mitigation measures create a condition under which additional off-site improvements could occur. Mitigation Measures C-3 through C-14 require roadway improvements at 12 intersections in the Project area. Mitigation Measure C-15 limits Project development, based on anticipated improvements to the I-405 ramps on Avalon Boulevard. Development of the ramps is being pursued by the City as a separate project that would serve as an off-site improvement for the Carson Marketplace project. As a separate project, the I-405 ramp improvements at Avalon Boulevard would be subject to its own environmental review. Because of the importance of this improvement relative to area circulation patterns, the Project's traffic analysis incorporates the assumption that the ramp improvements would be implemented concurrently with the proposed Project.

In addition, there are several mitigation measures that establish requirements that could lead to off-site improvements that would have secondary impacts on the physical environment. Specifically, Mitigation Measure I.1-13 requires the Applicant to fund its fair share of fire service improvements, which may take the form of a new fire station at an off-site location. Mitigation Measure I.4-1 requires the Applicant to meet park and recreation requirements sufficient to meet a standard of three acres per 1,000 population that could be met through the provision of on-site space, on-site improvements and/or the payment of in-lieu fees. If in-lieu fees are paid, they may be used for the purchase of new parks or the construction of additional facilities at existing parks. Mitigation Measure I.5-1 requires the payment of library fees in order for facilities to be expanded to meet Project needs. Mitigation Measures J.1-3 (regarding water service), J.1-8 (regarding fire flow), J.2-2 (regarding waste water), and J.2-4 (regarding reclaimed water) address the provision of utility lines to the Project site. Specific off-site improvements have not been identified at this time, but may be required upon final site plan review. Further, it is expected that off-site work would be required to connect to the infrastructure main lines in the Project area, especially in regard to a tie-in to the existing recycled water system infrastructure.

All of the mitigation measures identified above can be grouped into four categories of off-site improvements for the purposes of analyzing their potential impacts. The four categories area s follows:. (1) intersection improvements, (2) provision of the new Avalon Boulevard ramps to the I-405 freeway, (3) public service facilities, and (4) utility improvements.

2. Off-site Impacts of Intersection Improvements

To facilitate an understanding of the potential impacts of the Project's traffic mitigation measures the following is a restatement of the intersection mitigation measures set forth in Section IV.C, Transportation and Circulation:

- Mitigation Measure C-3, Vermont Avenue and Del Amo Boulevard (Intersection No. 5), would require the re-striping of the westbound departure lanes to shift northward. The improvement would require moving the median island southward on the east leg of the intersection, but would be feasible within the existing right-of-way

- Mitigation Measure C-4, Hamilton Avenue & Del Amo Boulevard (Intersection No. 6), would require the installation of a traffic signal and re-striping the northbound approach to provide a right-turn lane. These improvements are feasible within the existing right-of-way.

- Mitigation Measure C-5, Figueroa Street & Del Amo Boulevard (Intersection No. 7), would require would require re-striping on the southbound approach; moving the median island southward and re-striping to provide the additional left-turn lane on the westbound approach; and re-striping the eastbound approach lanes. Also, the westbound departure lanes would be re-striped to shift northward. These improvements are feasible within the existing right-of-way.

- Mitigation Measure C-6, Main Street and Del Amo Boulevard (Intersection No. 8), would require and re-striping all four approaches and moving the median islands. Improvements would require roadway widening from the Project site on the east side of the Main Street, north and south of Del Amo Boulevard. The improvements would also require removal of existing underutilized curb-side parking along the west side of the north leg and the east side of the south leg.

- Mitigation Measure C-7, Hamilton Avenue & I-110 Southbound Ramps (Intersection No. 11), would require re-striping the southbound approach. The improvement is feasible within the existing right-of way.

- Mitigation Measure C-8, Figueroa Street & I-110 Northbound Ramps (Intersection No. 12) could require a combination of partial widening on the west side of the north leg of the intersection, along with modifying the median islands and re-striping the lanes on both the north and south legs to shift them easterly;

and re-striping on the eastbound approach to provide for the addition of a right-turn lane. These improvements are feasible within the existing right-of-way.

- Mitigation Measure C-9, Figueroa Street & Torrance Boulevard (Intersection No. 15), would require moving the median islands and re-striping the lanes on the north and south legs of the intersection. The improvement would also require removal of existing curb-side parking along the east side of the north leg. This improvement is feasible within the existing right-of-way.

- Mitigation Measure C-10, Main Street & Torrance Boulevard (Intersection No. 16), would require restriping of the roadway and is feasible within the existing right-of-way.

- Mitigation Measure C-11, Vermont Avenue & Carson Street (Intersection No. 22), would require re-striping the westbound departure lanes and possible removal of the existing curb-side parking provided on the north side of the west leg to about 350 feet west of the intersection. This parking is currently prohibited during peak periods.

- Mitigation Measure C-12, Figueroa Street and Carson Street (Intersection No. 23), would require moving the median island and re-striping on the north leg of the intersection. The improvement would also require removal of existing curb-side parking along the west side of the north leg. This improvement is feasible within the existing right-of-way.

- Mitigation Measure C-13, Main Street & Carson Street (Intersection No. 24), would require the removal of the median islands on the east and west approaches and re-striping on the east and west legs of the intersection.

- Mitigation Measure C-14, Avalon Boulevard & Carson Street (Intersection No. 25), would require dedication and possible reduction or removal of median island and roadway widening on the west side of the north leg of the intersection; dedication and possible reduction or removal of median island and roadway widening on the north side of the east leg of the intersection; dedication and possible reduction or removal of the median island and roadway widening on the east side on the south leg of the intersection; and dedication and possible reduction or removal of the median island and roadway widening on the south side on the west leg of the intersection.

These improvements are not, feasible within the existing right-of-way and would require acquisition or roadway widening of right-of-way from adjacent parcels. The adjacent land uses include the Carson City Hall on the northeast corner of the intersection and commercial uses on the remaining three corners of the intersection. The necessary width can be obtained adjacent to City Hall on the north side of Carson Street through reduction of a portion of the existing landscaped area, allowing construction of the right-turn lane on the westbound Carson Street approach. Information from the City of Carson indicates that the parcels on the southeast and northwest corners may redevelop, at which point it may be possible to obtain the necessary right-of-way on the east side of Avalon Boulevard south of Carson Street and on the west side of Avalon Boulevard, north of Carson Street, allowing construction of the right-turn lanes on the northbound and southbound Avalon Boulevard approaches.

Implementation of these mitigation measures would require minor construction activities at each of the mitigated intersections identified above. Proposed improvements would consist of relocated medians and roadway widening that would require the demolition of existing pavement and curbs, clearing and grubbing of vegetated areas, the laying of roadbed and new pavement, the construction of new curbs and sidewalks. Related re-striping of roadways would involve removal of the old striping by sandblasting, if necessary, and then provision of new striping. All of this work would be done at the near surface, without a need for deep excavation.

Some of the roadway modifications may also include installation or modification of traffic signals required, with a combination of new signage, controller cabinets, poles, mast arms, detectors, and/or signal heads. In addition, the modifications could involve relocation of existing utility features, storm drains, signage, planters, streetlights etc.

The intersection improvements identified above would offer enhanced traffic flows and would otherwise operate under the same general conditions that occurred prior to implementation of the improvements. The air quality and noise analyses presented in Section IV of this Draft EIR address the potential impacts at those locations where potential impacts are most likely to occur. As such, no further analysis is required. Through compliance with existing regulations, all other potential impacts associated with long-term operations of these improvements are addressed and result in less than significant impacts. However, construction of these intersection improvements would have short-term construction impacts on several of the environmental issues that are analyzed in Section IV of this Draft EIR. Foremost among these topics are air quality and noise. To the extent that these intersection improvements occur concurrent with peak or near peak on-site construction activity, the construction of these intersection improvements would incrementally add to the Project's significant impact on regional air quality emissions. Localized air quality impacts are not anticipated to be significant since the magnitude and location of the construction (including earthwork) of these intersection improvements would not

be of a sufficient magnitude to cause or contribute to the Project's impacts. To the extent that sensitive noise receptors are located within proximity of these intersection improvements, the construction of these improvements may cause significant short-term noise impacts.

Construction of these improvements would also have impacts on traffic at the indicated intersections. For example, in some cases the construction of the intersection improvements would disrupt intersection operations and/or create congestion. However, such impact would be short-term and mitigated via standard, work management procedures for reducing travel impacts during construction; and would therefore be less than significant. Disruptions to traffic flows could also cause impacts on emergency access for fire and police services. Such disruptions would also be short term and reduced through the implementation of the work management procedures. These impacts would also be further reduced through coordination with the service providers; and again would be less than significant.

Construction impacts associated with the physical changes at the intersections would be limited. Impacts on geology/soils, hydrology, and hazards would be addressed through compliance with regulations that control construction activities that maintain the integrity of the infrastructure and protect the public. Likewise, if utilities should require relocation at any of the indicated intersections, standard engineering practices would be followed. Compliance with existing regulations and standard construction practices would avoid significant impacts relative to this group of environmental issues.

Construction impacts on the remaining environmental issues analyzed in this EIR would be minor, and less than significant. Specifically, there would be no impacts on land use or public services, i.e. schools, libraries, parks, police or fire services, except in regard to emergency access, as discussed above. Changes to the aesthetic setting during the construction of these improvements would be apparent due to equipment and debris, but not cause a substantial change in aesthetic conditions, and again would be of short duration. Thus, impacts with regard to this set of issues would also be less than significant.

3. Off-site Impacts of the Avalon/I-405 Ramp Improvements

Mitigation Measure C-15 requires that no Certificate of Occupancy shall be issued for commercial development in District 2, or for commercial development in Districts 1 and 3 that is greater than the amount of commercial development shown in the Applicant's Conceptual Plan, (i.e., 150,000 square feet and 50,000 square feet, respectively) prior to the completion of the I-405 ramp improvements at Avalon Boulevard. While this mitigation measure does not directly require physical changes to the environment, the actual implementation of the ramp improvements would result in a range of potential impacts to the physical environment, and as such warrant acknowledgment in this Draft EIR. It is important to note that the implementation of the ramp improvement program is being pursued by the City as a separate Project that will be

subject to its own environmental review. That review will be conducted in accordance with all applicable requirements including identifying mitigation measures to reduce potential significant impacts, as necessary. At this time only a conceptual design for the ramp improvements is available. Based on this conceptual design, the proposed interchange improvements include the following: (1) the extension of Lenardo Drive; (2) realignment and reconfiguration of the I-405 southbound on/off-ramps that currently intersect with Avalon Boulevard; (3) a new I-405 southbound on-ramp on the east leg of the new Avalon Boulevard/Lenardo Drive intersection, and (4) reconfiguration of the I-405 northbound off-ramp to allow left-turn movements to southbound Avalon Boulevard.

Implementation of these new roadways would require physical widening and realignment of the existing ramps, with construction of a bridge over the Torrance Lateral, as well as modifications to structural elements necessary to accommodate the anticipated improvements. Structural work would be required on the I-405 bridge over Avalon Boulevard, with modifications to the bridge and its supports. Structural work would also be required on the bridge over 213th Street to accommodate the proposed southbound on-ramp improvements. While it is anticipated that all potential environmental impacts associated with these ramp improvements would be mitigated to less than significant levels, the absence of sufficient details regarding the actual design requires the conservative conclusion that implementation of the ramp improvement program would result in potential significant impacts on the environment.

4. Off-site Impacts of New Public Service Facilities

Mitigation Measures I.1-13, I.1-14 and I.5-1 require the Applicant to fund its fair share of public service improvements. Such funding could result in the construction of new a fire station; new park space, or additional facilities at an existing park or additional facilities at the Carson Library. Any such infrastructure improvements would become projects of the implementing agencies. It is also anticipated that these improvements would be developed per standard design guidelines of those agencies; and would likely be subject to CEQA review. For the purposes of this analysis, at this time it is unknown how or where these improvements might occur. However, there is a potential for the location of such facilities adjacent to sensitive populations, such as residential areas or schools. Provided below is an overview of the impacts that could occur with the addition of new public service facilities.

Potential Fire Station

The development of a fire station within the Project area would be typical of fire stations located throughout the City of Carson. As an essential public service, it is anticipated that such a facility would be an acceptable land use that would occur, if actually constructed, without altering existing land use patterns. Furthermore, it is also anticipated that a fire protection facility would be a relatively small structure, designed pursuant to standard practices for

appearance and landscaping. As a result, aesthetic impacts would be less than significant. The new fire protection facility, if one is constructed, would generate very few vehicle trips, and those that it did generate would be, to some extent, a shift of trips on the transportation network from other locations. Thus, transportation impacts would be less than significant. Furthermore, the new facility would be developed in accordance with all engineering, building and safety standards to avoid potential hazards and to reduce potential geotechnical and hydrology impacts to less than significant levels. The operation of the facility would not have notable impacts on air quality and noise impacts, except for possible adverse affects of sirens, would similarly be less than significant. Such occurrences, on an occasional emergency basis are anticipated and considered acceptable for public safety. Construction of the fire station would enhance the quality of fire protection services offered and not have adverse affects on other public services. Utility service would be provided in accordance with standard practice and with the imposition of standard mitigation measures, impacts would be reduced to less than significant levels.

Construction impacts would be limited to those that would be expected with the development of a stand alone building. To the extent that construction occurs in proximity to sensitive receptors, significant impacts relative to noise could occur, although these impacts are not anticipated to be additive to those of the Project due to distance and presence of intervening structures between the Project site and the location of the new facility. To the extent construction of this facility occurs concurrent with the Project, regional air quality emissions would be slightly increased over the significant levels noted for the Project. However, localized air quality impacts are not anticipated to be significant since the magnitude and location of the construction (including earthwork) would not be of sufficient magnitude to cause or contribute to the Project's impacts. Other construction impacts via compliance with applicable regulations would be less than significant.

Potential Park and Library Improvements

Development of park and recreation facilities, as well as libraries, are typically considered neighborhood amenities and encouraged in land use planning, as important community resources. By providing open space and landscaping, parks offer relief from development, and are typically considered attractive environmental features. Structural facilities, when they are present within park sites, are typically elements of a larger site, and are integrated into the site design. Libraries tend to be conservative in their design and would not detract from the aesthetics of their surroundings. Therefore, the impacts of new park and library facilities on aesthetics would be less than significant. Vehicle trips associated with these facilities generally occur during non-peak travel periods. Furthermore, these vehicle trips are accounted for in the trip generation rates for the Project's residential uses and thus would not generate traffic impacts beyond those identified in Section IV.C., Transportation and Circulation, of this Draft EIR. Therefore, these uses would not cause significant impacts beyond those associated with the proposed Project. New park and library facilities would also be developed in accordance with all

engineering, building and safety standards to avoid potential hazards and to reduce geotechnical and hydrology impacts to less than significant levels. As these facilities would not generate traffic volumes greater than those identified in Section IV of this Draft EIR, regional air quality impacts associated with the operations of these facilities would be less than significant. Local air quality impacts for the Project are less than significant, as would be the local air impacts associated with the park and library trips. Libraries by their nature tend to sensitive to noise, so it is not anticipated that there would be operational noise impacts due to potentially expanded library facilities. However, noise from park facilities could result in a significant impact if there are sensitive uses located in close proximity to the new park facilities. However, it is anticipated that such impacts would be addressed via the design of the facilities. Notwithstanding, it is conservatively concluded that the creation of new off-site park facilities, should such facilities be actually constructed, could result in significant noise impacts if the new park facilities are located immediately adjacent to sensitive uses. Impacts of parks on and libraries on public services are less then significant as both types of improvements offer direct enhancements to the quality of public services, although they may result in incremental, and less than significant impacts with regard to increased demand for police and fire protection services. Utility services for parks and libraries would be provided in accordance with standard practices and with the imposition of standard mitigation measures, impacts would be reduced to less than significant levels.

Construction impacts for park and library facilities would be limited to those that would be expected with the typical development of such uses. To the extent that construction occurs in proximity to sensitive receptors, significant impacts relative to noise could occur. To the extent construction occurs concurrent with the Project, regional air quality emissions would be slightly increased over the significant levels noted for the Project. However, localized air quality impacts are not anticipated to be significant since the magnitude and location of the construction (including earthwork) would not be of sufficient magnitude to cause or contribute to the Project's impacts. Other construction impacts (i.e., geotechnical, hydrology, hazardous materials, etc.) would be reduced to less than significant levels via compliance with applicable regulations.

5. Off-site Impacts of Utility Connections

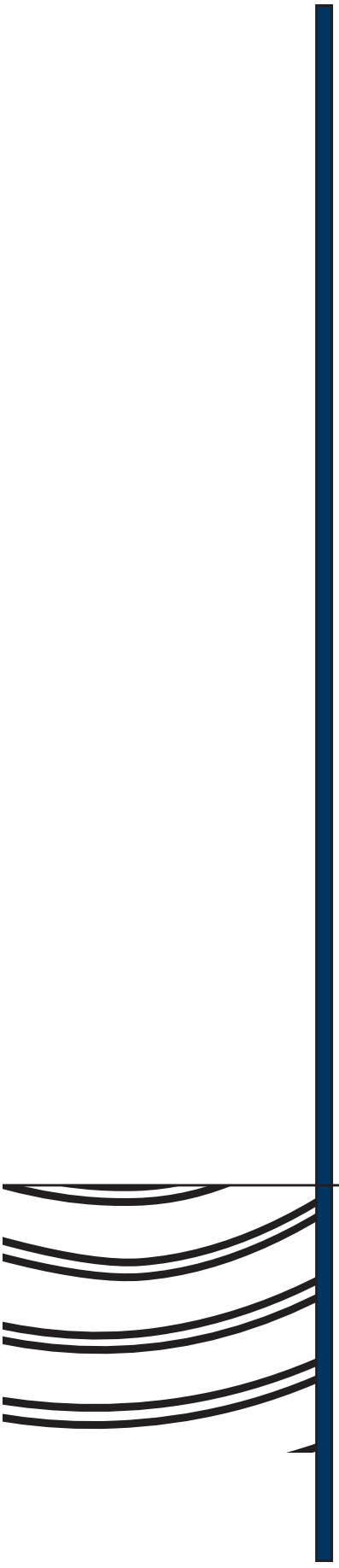
Mitigation measures J.1-3 (regarding water service), J.1-8 (regarding fire flow), J.2-2 (regarding waste water), and J.2-4 (regarding reclaimed water) address the provision of utility lines to the Project site. These measures require site plan review and final identification of connections to the existing infrastructure network in the Project vicinity. Depending on final design, it may be necessary to add new infrastructure connections to the water and sewer lines located in Main Street and Del Amo Boulevard. The service agencies have indicated that other off-site infrastructure, such as by-pass lines are not anticipated at this time. However, upon final review they may require additional line improvements. Further, the Project site may connect to a

reclaimed water system. The nearest reclaimed water line location is on the northern side of the I-405 Freeway and Dominguez Channel.

The implementation of connections between the Project site and these off-site utility lines would involve minor, short-term construction activities. It would require trenching in the streets, making the connections, backfilling of the trenches, and repaving the roadways. If other line work is required, although not currently expected, the construction process would be similar, but more extensive street paving could be required. Some roadway trenching would also be required along Del Amo Boulevard adjacent to the Project site.

Impacts of all of these activities would be similar to those described for the intersections above. Upon completion of construction activities, roadways would be restored to their former operating characteristics. During construction, temporary, short-term construction impacts on air quality, noise, and transportation would result from the surficial excavation, shallow trenching, and paving activities. These impacts would occur from construction activity within the roadways, and the operations of heavy equipment such as backhoes and jackhammers. The impacts would be typical of such activities encountered regularly in urban areas and would be of extremely short duration

In addition, there may be additional impacts associated with connecting the Project site to the existing reclaimed water system. Within the Project area, the reclaimed water system currently extends to the Goodyear Blimp site. Thus, the line would need to be extended southward along Main Street and easterly on Del Amo Boulevard before it would connect to the Project site. A design for this extension has not been completed. As such, impacts with the extension of this line to the Project site would be the same as those described above.



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