Environmental Impact Report for the Harbor Refineries Recycled Water Pipeline Project

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Environmental Impact Report
Harbor Refineries Recycled Water Pipeline Project,
Los Angeles, California

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EXECUTIVE SUMMARY

Introduction

The Los Angeles Department of Water and Power (LADWP), in conjunction with the West Basin Municipal Water District (WBMWD), are working in collaboration to develop the Harbor Refineries Recycled Water Pipeline Project (project). The project will convey recycled water to various industrial, commercial, and irrigation customers in the Los Angeles Harbor Area.

Purpose and Use of This Draft EIR

This Draft Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the proposed project. The Draft EIR is intended to serve as an informational document for public agency decision-makers and the public regarding the objectives and components of the proposed project. This document will address the potentially significant adverse impacts related to construction and long-term operation of the proposed project as well as identify feasible mitigation measures and alternatives that may be adopted to reduce or eliminate these impacts.

Project Overview

Local and Regional Setting

The proposed project is located in Southern California, in the southwest portion of Los Angeles County. The approximately 60,000-foot underground-recycled water pipeline would be located in the southern portion of the City of Carson and extend into the northern portion of the City of Los Angeles neighborhood of Wilmington. The proposed pipeline would be located beneath the public right of ways and the Dominguez Channel, and would occur in a highly developed area containing mostly industrial, commercial, institutional, recreational, and residential land uses.

Proposed Project Objectives

The objectives of the project are to:

- Improve the reliability of the City of Los Angeles water supply through increased recycled water use.
- Comply with the City of Los Angeles and the Los Angeles Department of Water and Power action plan titled "Securing L.A.'s Water Supply" outlining the steps to sustain a reliable water supply to meet current and future demand.
- Construct the necessary infrastructure to convey recycled water to the various industrial and irrigation customers in the Los Angeles Harbor Area.
- Provide recycled water to some of the City of Los Angeles' largest water customers, and where feasible, switch their potable water use into recycled water use.

Proposed Project Characteristics

The proposed project includes the construction and operation of approximately 60,000 feel of 36-inch (or smaller) recycled water pipeline from West Basin Municipal Water District's Juanita Millender-McDonald Water Recycling Facility (JMMWRF), located at 21029 South Wilmington Avenue in the City of Carson. The project proposes to convey recycled water to various customers in the Los Angeles Harbor Area by late 2011. The proposed pipeline would be located beneath existing public right of ways and the Dominguez Channel; extending from the southern portion of Carson to the northern portion of the community of Wilmington. The proposed pipeline will cross the Dominquez channel twice, once towards the northern portion of the pipeline near the JMMWRF and again on the southern end of the pipeline near Anaheim Street.

Environmental Impacts

Impacts Not Considered in This EIR

The environmental issues that were determined not to be significantly affected by the proposed project and, therefore, do not require evaluation in the EIR document, per section 15063(c) of the State CEQA Guidelines, are as follows:

- Aesthetics
- Agriculture Resources
- Biological Resources
- Geology/Soils
- Hydrology and Water Quality
- Land Use/Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

The above environmental issues that were determined not to be significantly affected by the proposed project were addressed in the IS/NOP.

Impacts of the Proposed Project

Table ES-1, Summary of Environmental Impacts and Mitigation Measures for the Harbor Refineries Recycled Water Project, summarizes the detailed discussion contained in Section 3 of this Draft EIR, Environmental Impact Analysis, of project impacts and mitigation measures.

Alternatives to the Proposed Project

Alternatives Analyzed in this EIR

No Project Alternative (Alternative 1)

Under the No Project Alternative (Alternative 1), the project site would remain as an existing public right of way, and existing conditions would continue. No recycled water pipeline would be

constructed as a result of the project. Additionally, industrial and commercial water users in the project area would continue to rely solely on potable water for the majority of their water needs.

Alternative Alignment - Delores Street Alignment (Alternative 2)

Under the Delores Street Alignment Alternative, the pipeline alignment would avoid Avalon Boulevard between 223rd Street and Lomita Boulevard. At the intersection of Avalon and 223rd Street, the pipeline under this alternative would be routed west beneath 223rd Street to Delores Street, where the pipeline would continue south to Sepulveda Boulevard. At Sepulveda Boulevard, the pipeline would be routed west to Main Street where it would continue south beneath Main Street. Finally, under this alternative, the pipeline would be routed east beneath Lomita Boulevard until the intersection of Lomita Boulevard and Avalon Boulevard, where the pipeline would be routed south beneath Avalon Boulevard. In this alternative, no construction would occur along Avalon Boulevard between 223rd Street and Lomita Boulevard.

Alternative Alignment - Main Street Alignment (Alternative 3)

Under the Main Street Alignment Alternative, the pipeline alignment would avoid Avalon Boulevard between 223rd Street and Lomita Boulevard. At the intersection of Avalon and 223rd Street, the pipeline under this alternative would be routed west beneath 223rd Street to Main Street, where the pipeline would continue south to Lomita Boulevard. At Lomita Boulevard, the pipeline would be routed east beneath the roadway until the intersection of Lomita Boulevard and Avalon Boulevard, where the pipeline would be routed south beneath Avalon Boulevard. In this alternative, no construction would occur along Avalon Boulevard between 223rd Street and Lomita Boulevard.

Environmentally Superior Alternative

CEQA Guidelines § 15126(e)(2) requires an EIR to identify an "environmentally superior alternative." If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

Each of the proposed alternatives would have lesser environmental impacts relative to the proposed project. As stated previously, if the No Project Alternative is environmentally superior, the EIR must also identify another environmentally superior alternative among the remaining alternatives. Based on this consideration, Alternative 2 - Delores Street Alignment is considered the environmentally superior alternative.

This alternative has very similar impacts compared to Alternative 3, though Alternative 2 has slightly lesser impacts associated with Noise when compared to Alternative 3. Alternative 2 has slightly lesser impacts than the proposed project for transportation/traffic. Therefore, Alternative 2 - Delores Street Alignment is considered the environmentally superior alternative.

Issues to be Resolved/Areas of Controversy

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, which includes the choice among alternatives and whether or how to mitigate significant impacts. The major issues to be resolved within the proposed project include decisions by the Lead Agency as to whether:

- The Draft EIR adequately describes the environmental impacts of the proposed project;
- The recommended mitigation measures should be adopted or modified; and/or
- Additional mitigation measures need to be applied to the proposed project.

Table ES-1, Summary of Environmental Impacts and Mitigation Measures for the project, summarizes the detailed discussion contained in Section 3 of this Draft EIR, Environmental Impact Analysis, of project impacts and mitigation measures. Table ES-1 lists the environmental issues, and considers those that are significant after mitigation as issues to be resolved.

Table ES-1: Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
3.1 - Air Quality		
Impact AQ-1. The project would conflict with or obstruct implementation of the applicable air quality plan.	Implement mitigation measures AQ-2a, AQ-2b, AQ-3a, and AQ-3b	Less than significant.
Impact AQ-2. The project would violate any air quality standard or contribute substantially to an existing or projected air quality violation.	**MM AQ-2a.** In addition to compliance with SCAQMD Regulation 402 (Fugitive Dust), the Construction Manager/Contractor will implement the following dust control measures for all Excavation and shoring activities: • Expeditiously replace ground cover in disturbed areas. • Water disturbed surfaces at least 3x per day. • All stockpiles shall be covered **MM AQ-2b.** Prior to the start of construction, the LADWP will draft a Construction Emission Reduction Plan (Plan) that details implementation of this measure, including discussions on feasibility and the degree of implementation of specific Plan components. The construction manager shall keep a copy of the Plan on-site during construction and shall implement the components of the Plan. The Plan shall demonstrate a reduction in maximum daily NO_x emissions from the excavation and shoring phase such that the emissions will not exceed the SCAQMD's LST thresholds. The primary method of achieving emission reductions is reducing the maximum equipment use hours to occur on any one day at any one location of excavation and shoring. Total on-site (off-road equipment) horse power-hours (hp*h) allowed to occur at any one location to will be restricted to 13,825 or less.	Less than significant.
Impact AQ-3. The project would result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).	**MM AQ-3a.** During project construction, construction equipment will be properly maintained at an offsite location; maintenance shall include proper tuning and timing of engines. Equipment maintenance records and data sheets of equipment design specifications shall be kept at that location. **MM AQ-3b.** In addition to the requirements of MM AQ-2b, LADWP shall incorporate into the Construction Emission Reduction Plan (Plan) a demonstration that the maximum daily activity that would occur for the project in the region (a summation of all	Less than significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact AQ-3. (cont.)	construction site emissions) would not exceed the SCAQMD's regional NO_x threshold of 100 lbs/day. Below is a menu of specific measures that may be included in the Plan to reduce total daily NO_x emissions. The measures may be used singly or together to reduce the NO_x impact to less than significant: All construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1) unless LADWP determines that such engine is not available or feasible for a particular type of equipment. In the event a Tier 2 engine in not available for any off-road engine larger than 50 hp, that engine shall be a Tier 1 engine, if available and feasible. In the event a Tier I engine is not available for any off-road engine larger than 50 hp, then that engine shall be a 1996 or newer engine. The LADWP may grant relief from this requirement for that engine if compliance with this requirement is infeasible. To the extent that equipment and technology is available and cost-effective, the LADWP is encouraged to use NO_X catalyst, and retrofit existing engines in construction equipment. This measure applies to all construction equipment, including portable diesel powered equipment holding a valid permit with the SCAQMD or ARB. As to assist the construction manager in identifying engines that implement this measure, equipment that implements the measure shall have clearly visible tags. To the extent feasible, utilize alternative fueled equipment instead of diesel-powered equipment. If biodiesel is selected as an alternative fuel, the construction manager shall ensure that appropriate NO_x reduction additives are utilized, as biodiesel alone would increase NO_x emissions. During project construction, onsite electrical hook ups shall be provided to utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators. To the extent that equipment and technology is available and cost-effective, the LADWP is encouraged to use electrically driven equipment instead of fossil-fueled engines. During project construction, restrict idling of construction equipment onsite to 5 minutes or less, unless idling is necessary for equipment use.	

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact AQ-3. (cont.)	To the extent practicable, construction management techniques such as timing construction to occur outside the ozone season of May through October shall be employed, or equipment use shall be scheduled to limit unnecessary concurrent operation.	
Impact AQ-4. The project would not expose sensitive receptors to substantial pollutant concentrations	No mitigation required.	Less than significant.
Impact AQ-5. The project would not create objectionable odors affecting a substantial number of people.	No mitigation required.	Less than significant.
3.2 - Cultural Resources		
Impact CR-1. The project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.	No mitigation measures required.	Less than significant.
Impact CR-2. The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	**MM CR-2.** A cultural resources discovery plan shall be prepared and implemented prior to the start of construction. The discovery plan will consist of the following components: a.) The Contractor/Construction Manager shall ensure that a cultural and paleontological discovery plan and training program shall be implemented prior to the start of construction. The discovery plans will outline procedures for identification and treatment of either cultural resources or paleontological resources found along the routes during construction. The training program will be prepared by a trained archaeologist and paleontologist and shall consist of a brief PowerPoint presentation (or other approved presentation method) for all construction personnel. The emphasis of the training is to educate all construction personnel on the potential archaeological and paleontological resources that could be found on the project during excavation and the proper procedures for dealing with resources if encountered. Should resources be identified during construction, work shall cease in the immediate area (within 100 feet) and a qualified archaeologist shall be notified to determine if the resource is significant. Work shall not continue until the	Less than significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact CR-2. (cont.)	qualified archaeologist makes a determination. If a significant resource is encountered, the steps outlined in the archaeological discovery plan shall be followed. b.) Prior to the commencement of construction activities, a qualified archaeologist shall review all construction plans to determine the amount of subsurface disturbance in the construction right of way. This shall be accomplished through a review of existing drawings of utilities currently in place, referenced against the location of the new recycled water pipeline. If no drawings are available, the qualified archaeologist shall make assessments during construction "potholing" activities to determine if undisturbed cultural resources are present or potentially present. c.) If it is determined that intact soils are present along portions of the route with a high potential for buried archaeological resources as shown in Exhibit 3.2-1, as identified through MM CR-2.b, a qualified archaeologist shall be present for excavation activities in those specific areas. If significant resources are encountered, the procedures outlined in the archaeological discovery plan shall be followed, before construction can continue. If no significant resources are encountered after 25% of one of the high potential areas has been excavated, the project archaeologist can reduce or eliminate archaeological monitoring at the location.	
Impact CR-3. The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**MM CR-3a.** Prior to the start of construction, a qualified paleontologist shall review all construction plans to determine the amount of subsurface disturbance in the construction right of way. This shall be accomplished through a review of existing drawings of utilities currently in place, referenced against the location of the new recycled water pipeline. If no drawings are available, the qualified paleontologist shall make assessments during construction "potholing" activities to determine if undisturbed cultural resources are present or potentially present. **MM CR-3b.** If it is determined by the paleontologist that suitable intact soils are present along portions of the route with a high potential for buried paleontological resources as shown in Exhibit 3.2-1, as identified in MM CR3a, a qualified paleontologist shall be present for excavation activities in those specific areas. If significant resources are encountered, the procedures outlined in the discovery plan (MM CR2.a) shall be followed, before construction can continue. If no significant resources are encountered after 25% of one of the high potential areas has been excavated, the project paleontologist can reduce or eliminate monitoring at the location.	Less than significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact CR-3. (cont.)	**MM CR-3c.** In the case that fossil remains are encountered, all recovered fossil remains shall be prepared to the point of identification and to the lowest taxonomic level possible. The remains shall be curated, catalogued, and the corresponding geologic and geographic site data archived and all items transferred to the appropriate museum repository, preferably to the Los Angeles County Natural History Museum.	
Impact CR-4. The project would not disturb any human remains, including those interred outside of formal cemeteries.	No mitigation measures required.	Less than significant.
3.3 - Hazards and Hazardous Materials		
Impact HAZ-1. The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	No mitigation measures required.	No impact.
Impact HAZ-2. The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	No mitigation measures required.	No impact.
Impact HAZ-3. The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	No mitigation measures required.	No impact.
Impact HAZ-4: The project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment.	No mitigation measures required.	No impact.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-5: The project would not result in a safety hazard for people residing or working in the project area related to a public airport or public use airport.	No mitigation measures required.	No impact.
Impact HAZ-6: The project is not located within the vicinity of a private airstrip; therefore, the project would not result in a safety hazard for people residing or working in the project area.	No mitigation measures required.	No impact.
Impact HAZ-7: The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	No mitigation measures required.	No impact.
Impact HAZ-8: The project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	No mitigation measures required.	No impact.
3.4 - Noise		
Impact NOI-1. The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	**MM NOI-1a.** During all construction activities associated with the project, the construction Contractor/Construction Manager shall ensure that, unless granted a variance or an exemption from the applicable City, construction activities shall not occur between the hours of 8:00 p.m. and 7:00 am Monday through Friday, between the hours of 6:00 p.m. and 8:00 a.m. on Saturday, nor at any time on Sunday or a national holiday where a construction work area is within 500 feet of a noise-sensitive land use. **MM NOI-1b.** Prior to the commencement of construction activities, the Contractor/Construction Manager shall prepare a construction schedule that will ensure that construction shall be completed as rapidly as possible while minimizing potential cumulative construction noise impacts and accommodating particularly noise-sensitive periods for nearby land uses. **MM NOI-1c.** During all construction activities, the Contractor/Construction Manager	Significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact NOI-1. (cont.)	shall ensure that the quietest construction equipment available shall be used. Where possible, electric-powered equipment shall be used rather than diesel equipment and hydraulic-powered equipment shall be used rather than pneumatic power. If compressors powered by diesel or gasoline engines are used, they shall be enclosed or have baffles to help abate noise levels. **MM NOI-1d.** During all construction activities, the Contractor/Construction Manager shall ensure that all construction equipment shall be properly maintained. **MM NOI-1e.** During all construction activities, the Contractor/Construction Manager shall ensure that all equipment shall be equipped with suitable exhaust and air-intake silencers in proper working order. **MM NOI-1f.** During all construction activities, the Contractor/Construction Manager shall ensure that noisy equipment shall be operated only when necessary, and shall be switched off when not in use. **MM NOI-1g.** During all contraction activities in residential neighborhoods, the Contractor/Construction Manager shall ensure that where feasible, temporary barriers shall be employed around noisy equipment when it is located within 500 feet of a sensitive receptor. To maximize the effectiveness of the barriers they shall break the line-of site between the equipment and the noise-sensitive receptor(s) and shall be located as close as practicable to either the noise source or the receptor. Where the barrier does not enclose the equipment on multiple sides, the length of the barrier shall be substantially greater than its height to provide effective performance. The barriers shall be constructed of an acoustical blanket material that provides a minimum sound transmission class (STC) of 28. **MM NOI-1h.** During all construction activities, the Contractor/Construction Manager shall ensure that construction employees are trained in the proper operation and use of the equipment in order to minimize noise levels. **MM NOI-1i.** Prior to the commencement of construction activities, the Contractor/Construction Manager shall ensure that construction employees shall be required to participate in training programs related to project-specific noise requirements, specifications, and equipment operations. The construction employees shall also receive onsite training related to the noise-specific issues and sensitive areas adjacent to the pipeline route. **MM NOI-1j.** Staging sites shall be located on properties restricted to industrial and commercial uses only.	

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact NOI-1. (cont.)	**MM NOI-1k.** Staging sites shall not be located within 500 feet of a sensitive receptor. Where this is not possible, the Contractor/Construction Manager shall ensure that noise barriers are erected, or ensure that existing structures provide adequate noise barriers between the staging site and the sensitive receptor(s). **MM NOI-1l.** During all construction activities, the Contractor/Construction Manager shall ensure that stationary noise sources such as generators and compressors shall be positioned as far away as possible from noise sensitive areas. **MM NOI-1m.** During all construction activities, the Contractor/Construction Manager shall ensure that construction equipment is stored in the construction zone while in use in order to eliminate noise associated with repeated transportation of the equipment to and from the site. **MM NOI-1n.** Prior to the commencement of construction activities, the Contractor/Construction Manager shall ensure that public notice is given regarding construction which identifies the location and dates of construction, and the name and phone number of the contractor's contact person in case of complaints. One contact person shall be assigned to the pipeline project. The public notice shall encourage the residents to contact this person rather than the police in case of complaint. Residents shall also be kept informed of any changes to the schedule. The designated contact person shall be available on a mobile phone. If a complaint is received, the contact person shall take whatever reasonable steps are necessary to resolve the complaint. If possible, a member of the construction team shall also travel to the complainant's location to understand the nature of the disturbance. **MM NOI-1o.** Prior to the commencement of construction activities, the LADWP Waterworks Engineer shall prepare a haul route plan for the construction of the project. Haul routes shall be on major arterial roads in industrial and commercial areas. Where haul routes must occur on major arterial roads in residential areas, such routes shall be subject to the review and approval of the local jurisdiction wherein the haul route will occur.	

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact NOI-2. The project would result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.	**MM NOI-2a.** During construction activities, in order to avoid potential building damage associated with construction vibration, the Contractor/Construction Manager shall ensure that heavy equipment (backhoes, dozers, graders, loaders, etc.) shall not be operated within 15 feet of any existing building. If the required distance cannot be maintained then the following measures shall be implemented: a.) Qualified structural and/or geotechnical engineers shall review the peak particle velocities estimated in this report, and determine if there are any risks to the building, including possible risks from dynamic soil settlement induced by the vibration. If the structural or geotechnical engineers identify any potential risks, they shall take all necessary steps to protect the building including, but not limited to, photographing and/or videotaping the building in order to provide a record of the existing conditions before construction. b.) If considered appropriate by a qualified structural engineer or geotechnical engineer, an engineer shall be on-site during the construction activities and perform such tests and observations as are necessary to ensure the structural stability of the building. This may include vibration measurements obtained inside or outside of the building.	Significant.
Impact NOI-3. The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	No mitigation measures required.	Less than significant.
Impact NOI-4. The project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Implementation of Mitigation Measures NOI-1a through NOI-1o is required.	Less than significant.
Impact NOI-5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	No mitigation measures required.	Less than significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
Impact NOI-6. For a project within the vicinity of a private airstrip, the project would not expose people residing or working in the project area to excessive noise level.	No mitigation measures required.	No Impact.
3.5 - Transportation and Traffic		
Impact TRAN-1. The project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).	**MM TRAN-1a.** Directional capacity (westbound in the a.m. peak and eastbound in the p.m. peak) should be considered in roadway closure planning. The provision of the original one-way capacity of the affected roadway (in number of travel lanes) in the peak direction, while providing a reduced number of travel lane for the opposite direction of traffic flow, would help to alleviate any potential traffic impacts during construction if construction-period roadway LOS would be unacceptable. **MM TRAN-1b.** There are bicycle lanes located along Avalon Boulevard between 246th Street to the north and L Street to the south. Closure of these lanes in addition to the on-street parking could be necessary during Project construction. If these lanes are closed, direct alternates should be provided during construction. If provision of alternate routes is not feasible, bicycle route closure signs shall be posted at the next major intersections to the north and south of the construction area. **MM TRAN-1c.** Left-turn lanes and other approach lanes (as feasible) should be maintained in close vicinity to major intersections along the proposed Project route. **MM TRAN-1d.** In residential areas where roadway widths are narrow, one lane should be maintained for reversible traffic flow. Additionally, access to residential driveways should be maintained. **MM TRAN-1e.** Marked pedestrian crosswalks should be maintained, especially when a school or transit stop is located nearby. There are schools located on Avalon Boulevard, Carson Street, L Street, Mahar Avenue, and Pacific Coast Highway. All crosswalks should be relocated temporarily, immediately beyond the construction work area in accordance with applicable safety regulations. **MM TRAN-1f.** If a mid-block crosswalk would result from a temporary crosswalk replacement, the crosswalk should be closed completely and pedestrians should be routed to another intersection leg. **MM TRAN-1g.** The study area has major industrial uses that generate sizeable levels of truck traffic, especially within the southern end of the study area (adjacent to the Port of	Significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
	Los Angeles). Where physical mitigation measures cannot be provided on roadway segments that would operate at LOS E or F during construction, peak-hour restrictions (6:00 to 9:00 a.m. and 3:30 to 7:00 p.m.) on construction activity would be necessary.	
Impact TRAN-2. The project would exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.	Mitigation Measures MM TRAN-1a through MM TRAN-1g,	Significant
Impact TRAN-3. The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.	No mitigation measures required.	No Impact
Impact TRAN-4. The project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	No mitigation measures required.	No Impact
Impact TRAN-5. The project would not result in inadequate emergency access.	No mitigation measures required.	Less than significant.
Impact TRAN-6. The project would result in inadequate parking capacity.	No feasible mitigation measures are available to reduce the severity of this impact.	Significant
Impact TRAN-7. The project would conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).	Implementation of MM TRAN-1b and the following: **MM TRAN-7a**. During all construction activities, temporary replacement bus stops shall be established in portions of the project alignment where bus stop closures are required to accommodate project construction. The temporary bus stops shall be located along wide portions of the roadway where the maximum number of travel lanes can be accommodated during construction.	Less than significant.

Environmental Impact	Recommended Mitigation Measures	Level of Significance After Mitigation
3.6 - Climate Change		
Impact CC-1. The project would not significantly hinder or delay California's ability to meet the reduction targets contained in AB 32.	No mitigation measures required.	Less than significant.
Impact CC-2. The environmental impacts of climate change would not significantly impact the project.	No mitigation measures required.	Less than significant.

SECTION 1: INTRODUCTION

1.1 - Overview, Purpose, and Authority of the EIR

1.1.1 - Overview

In recent years, the City of Los Angeles's water supply has been reduced due to a number of factors, including a reduced snowpack in the Eastern Sierra, low rainfall in the City of Los Angeles, reduced water supplies from the California Delta region, and uncertain climate changes that threaten traditional water supply sources. Consequently, Los Angeles Mayor Antonio R. Villaraigosa and the Los Angeles Department of Water and Power (LADWP) released an action plan titled "Securing L.A.'s Water Supply" dated May 2008, outlining the steps the City of Los Angeles will take to sustain a reliable water supply to meet current and future demand. This long-term strategy calls for meeting all new water needs through aggressive water recycling and conservation programs. The Harbor Refineries Recycled Water Pipeline Project would contribute to the City of Los Angeles's Water Supply Plan in its efforts to provide responsible water management.

The LADWP, and the West Basin Municipal Water District (WBMWD), are collaborating to develop the Harbor Refineries Recycled Water Pipeline Project. The proposed pipeline would convey recycled water, treated to California Department of Public Health (CDPH) Title 22 water quality standards and further treated by a nitrogen purification process, to various LADWP customers in the Los Angeles Harbor area. Title 22 pertains to various aspects of drinking water and recycled water, and establishes water and treatment reliability criteria. The new recycled-water pipeline will have the capacity to supply potential customers in the Harbor Area with as much as 15,000 acre-feet (af) per year of recycled water, or enough water to supply 30,000 households. The pipeline is not only being designed to replace the current potable water use for existing customers, but the proposed pipeline is sized to offset the industrial customers' groundwater demand.

The WBMWD's Juanita Millender-McDonald Water Recycling Facility (JMMWRF), located in the City of Carson at 21029 S. Wilmington Avenue, is one of four water recycling facilities owned by WBMWD that treats and produces recycled water. The JMMWRF currently has the capacity to produce up to 5 million gallons per day (MGD) of recycled water, which is primarily used in the City of Carson to provide recycled water to the BP Refinery. The proposed project is being undertaken to conserve potable water and to provide the region with a dependable, locally controlled water supply. By replacing up to 15,000 af per year of potable demand with recycled water, the region will benefit by increased water reliability, reduce its reliance on imported water supplies, and decrease wastewater discharge into the Santa Monica Bay.

1.1.2 - Purpose and Authority

This Draft Environmental Impact Report (Draft EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts

associated with the Harbor Refineries Recycled Water Pipeline Project within the cities of Carson and Wilmington, in Los Angeles County. This Draft EIR has been prepared in accordance with the California Environmental Regulations, Title 14, Section (§) 15000 et seq; and the rules, regulations, and procedures for implementing CEQA as adopted by LADWP. This document is a Project EIR, in conformance with § 15161 of CEQA Guidelines and examines the environmental impacts associated with a specific project. As the lead agency for this project, LADWP must complete the environmental review to determine if the proposed project would create significant adverse environmental impacts.

As municipal utilities, LADWP and WBMWD will fund, construct, operate, and maintain the proposed project. As an incorporated City government, the City of Carson will issue land use approvals and other ministerial permits for the project. The proposed project, the evaluations contained in the environmental checklist, and the comments received from agencies and members of the public during review of the Notice of Preparation (NOP) for the Draft EIR, will be the focus of analysis for the Draft EIR.

The Draft EIR is intended to serve as an informational document for public agency decision-makers and the public, for the objectives and components of the proposed project. This document addresses the adverse construction and long-term operational impacts of the proposed project, as well as identify feasible mitigation measures and alternatives that may be adopted to reduce or eliminate these impacts.

This EIR is the primary reference document for the formulation and implementation of a mitigation monitoring program for the proposed project, in compliance with Public Resource Code (PRC) § 21081.6. Environmental impacts cannot always be mitigated to a level that is considered less than significant. In accordance with § 15093(b) of the CEQA Guidelines, if a lead agency approves a project that has significant impacts that are not substantially mitigated (i.e., significant unavoidable impacts), the agency shall state in writing the specific reasons for approving the project, based on the final CEQA documents and any other information in the public record for the project. This is defined in § 15093 of the CEQA Guidelines as “a statement of overriding considerations.”

1.1.3 - Lead Agency

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Attn: Shilpa Gupta

1.1.4 - Project Sponsors

Los Angeles Department of Water and Power
Water Engineering and Technical Services

111 North Hope Street, Room 1356
Los Angeles, CA 90012
Attn: Paul Liu

1.2 - Scope of the EIR

1.2.1 - EIR Focus

The EIR will address the potential environmental effects of the proposed project. The scope of the EIR includes issues identified by LADWP during preparation of the Initial Study (IS) and Notice of Preparation (NOP) for the proposed project, and issues raised by agencies and the general public in response to the IS/NOP.

In compliance with CEQA Guidelines, LADWP has taken steps to maximize public opportunities to participate in the environmental process. During the preparation of the Draft EIR, various federal, State, regional, and local governmental agencies and other interested parties were contacted to solicit comments and inform the public of the proposed project. This included the distribution of the IS/NOP in December 2008. The project was described, potential environmental effects associated with project implementation were identified, and agencies and the public were invited to review and comment on the NOP. The close of the NOP comment period was January 30, 2009. The IS/NOP is included in Appendix A1 and comment letters received during the NOP review period are included in Appendix A2 of this Draft EIR. Agencies, organizations, and interested parties not contacted or who did not respond to the request for comments about the project during the IS/NOP public review period have the opportunity to comment during the 45-day public review period on the Draft EIR.

A public scoping meeting was conducted by LADWP at Banning High School in Wilmington, California on January 14, 2009 to assist LADWP in identifying the range of actions, potentially significant effects to be analyzed in depth in the EIR, alternatives, and mitigation measures. No commentors attended the meeting; therefore, no comments or concerns were raised at the meeting.

1.2.2 - Effects Found Not to Be Significant

The environmental issues that were determined not to be significantly affected by the proposed project and, therefore, do not require evaluation in the document, per § 15063(c) of the CEQA Guidelines, are:

- Aesthetics
- Agricultural Resources
- Biological Resources
- Geology and Soils
- Hydrology and Water Quality
- Land Use Planning
- Mineral Resources
- Population and Housing
- Recreation
- Utilities and Service Systems

The above environmental issues were determined not to be significantly affected by the proposed project and were addressed in the IS/NOP (Appendix A). The IS/NOP and the following discussion are intended to provide adequate environmental documentation for the issues that will not be further addressed in the EIR. Mitigation measures for impacts found not to be significant by the IS Environmental Checklist Form are included with the IS in Appendix A of this Draft EIR, and will be included in the Mitigation Monitoring and Reporting Program (MMRP).

Aesthetics

The proposed pipeline would be located underground within existing rights-of-way, except at railroad crossings and the Dominguez Channel. The underground pipeline would not permanently affect the aesthetic environment within the project area. Therefore, the project would not result in significant impacts to aesthetics.

Agriculture Resources

The project would be constructed in a highly developed, urbanized area, which is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The project will not conflict with existing zoning for agricultural use or a Williamson Act contract. Therefore, the project would not result in significant impacts to agricultural resources.

Biological Resources

The project impacts to biological resources will be limited to the public rights-of-way and the disturbed habitat surrounding the Dominguez Channel during construction. The project will be located underground in highly developed areas surrounded by urban land uses. No suitable habitat for any sensitive species will be impacted by construction and operation of the proposed project. Therefore, the project would not result in significant impacts to biological resources.

Geology / Soils

The project site is not located within an Alquist-Priolo Earthquake Fault Zone. There are no known active faults that traverse the project site. Although the project would be subjected to moderate ground shaking from seismic events on nearby and regional faults, this shaking is not likely to cause significant damage to a buried pipeline. Erosion control measures associated with mandatory Storm Water Pollution Prevention Plan (SWPPP) and National Pollution Discharge Elimination System (NPDES) requirements would ensure that impacts associated with erosion of topsoil would be less than significant. The project would not be located in an area prone to landslides, or containing expansive soils. Therefore, the project would not result in significant impacts to geology and soils.

Hydrology and Water Quality

Construction of the proposed project will require the use of water to control fugitive dust and may include dewatering in areas with high groundwater levels. To comply with State law, water quality

standards and waste discharge requirements during construction would need to be addressed in the project design and construction phase. This would include the preparation of a SWPPP in compliance with the NPDES.

The proposed pipeline would serve to increase the reliability of the existing LADWP water supply system by transporting recycled water in an effort to reduce the use of potable water for commercial and industrial purposes. Therefore, it is unlikely the proposed pipeline would result in groundwater withdrawals that would adversely affect groundwater levels.

While the proposed project lies within the Dominguez Channel Watershed Management Area (DCWMA) and the 100-year flood area, the proposed project would not alter the course of a stream or river, but would involve horizontal directional drilling under the Dominguez Channel at two locations. The SWPPP would be required to provide measures that would be implemented prior to construction to control for erosion, siltation and minimize polluted runoff. Therefore, the project would not result in significant impacts to hydrology and water quality.

Land Use and Planning

The project would construct a subsurface recycled water pipeline and will not physically divide an established community. The project will substantially conform to the City of Los Angeles General Plan, City of Los Angeles Municipal Code, Wilmington-Harbor Community Plan, and the City of Carson General Plan. The project site is not within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. The project would not result in significant impacts related to land use and planning.

Mineral Resources

The project site does not contain any known mineral resources that would be of value to the region and the residents of the State. The project will not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Therefore, no impacts to mineral resources would occur.

Population / Housing

The proposed pipeline would occur underground, within existing street rights-of-way, and the project is consistent with land use planning for the site and would not displace existing housing or population. Construction of the proposed project at its peak would involve approximately 40 workers, and would result neither in a substantial increase to the local or regional population, nor a specific increase in demand for housing. Therefore, no impacts associated with population and housing would occur.

Public Services

Construction and operation of the proposed project and ancillary facilities would represent a negligible increase in fire potential since portions of the proposed project would be located underground. There are no residential, commercial, industrial, or recreational land uses proposed as part of the project, which could otherwise substantially increase the demand for police, schools, parks, or other public services. Therefore, the project would not result in a significant impact on public services.

Recreation

Implementation of the proposed project would not increase the use of existing neighborhood or regional parks or other recreational facilities. The proposed project does not include recreational facilities or require construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the project would not result in a significant impact on recreation.

Utilities and Service Systems

Wastewater generation and water consumption associated with the proposed project would not require or result in the construction of new water treatment facilities or the expansion of existing facilities. The proposed project would not alter existing drainage patterns or stormwater infrastructure. Construction debris would be recycled or transported to a landfill site and disposed of in accordance with Assembly Bill (AB) 939 and with all County and State solid waste diversion, reduction, and recycling mandates. Therefore, the project would not result in a significant impact on utilities and services systems.

1.2.3 - Mandatory Findings of Significance

Based on the findings of the IS/NOP, a determination was made that an EIR is required to address the potentially significant environmental effects of the proposed project. The scope of the EIR includes issues identified by the LADWP during the preparation of the IS/NOP for the proposed project, as well as environmental issues raised by agencies and the public in response to the IS/NOP. The following issues were determined to be potentially significant and will be addressed in this EIR:

- Air Quality
- Climate Change
- Cultural Resources
- Hazards and Hazardous Materials
- Noise
- Transportation and Traffic

1.3 - Organization of the EIR

This Draft EIR is organized into the following main sections:

- **Executive Summary.** This section includes a summary of the proposed project and alternatives to be addressed in the Draft EIR, including a summary table of project impacts and proposed mitigation measures.
- **Section 1: Introduction.** This section provides an introduction and overview describing the purpose of this Draft EIR, its scope and components, and its review and certification process.
- **Section 2: Project Description.** This section includes a detailed description of the proposed project, including its location, site, and project characteristics. A discussion of the project objectives, intended uses of the Draft EIR, responsible agencies, and approvals that are needed for the proposed project are also provided.
- **Section 3: Environmental Impact Analysis.** This section analyzes the environmental impacts of the proposed project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are:
  - Section 3.1 - Air Quality
  - Section 3.2 - Cultural Resources
  - Section 3.3 - Hazards and Hazardous Materials
  - Section 3.4 - Noise
  - Section 3.5 - Transportation Traffic
  - Section 3.6 - Climate Change
- **Section 4: Cumulative Impact Analysis.** This section analyzes the project's contribution to cumulative impacts.
- **Section 5: Other CEQA Considerations.** This section provides a summary of significant environmental impacts, including unavoidable, irreversible, and growth-inducing impacts.
- **Section 6: Alternatives to the Proposed Project.** This section compares the impacts of the proposed project with three alternatives, including the No Project/No Development Alternative, the Delores Avenue Alignment Alternative, and the Main Street Alignment Alternative. Among these three alternatives, an environmentally superior alternative is identified.
- **Section 7: Information Sources.** This section provides a list of the organizations, persons consulted, and the various individuals who contributed to the preparation of this Draft EIR. This section also provides a list of documents cited in the body of this Draft EIR and acronyms and abbreviations used.
- **Appendices.** The appendices contain the NOP (including agency comments) and technical studies prepared to support the Draft EIR analysis.

1.4 - Documents Incorporated by Reference

As permitted by § 15150 of the CEQA Guidelines, this Draft EIR has referenced several technical studies, analyses, and previously certified environmental documentation. Information from the documents, which have been incorporated by reference, has been briefly summarized in the

appropriate section(s). The documents and other sources that have been used in the preparation of this Draft EIR include:

- City of Los Angeles General Plan
- City of Carson General Plan
- Air Quality Analysis Report (Michael Brandman Associates)
- Environmental Noise Study for the Construction of the LADWP Harbor Refineries Recycled Water Pipeline Project (Weiland and Associates)
- Paleontological Resources Inventory Report for the LADWP Harbor Refineries Recycled Water Pipeline Project (Michael Brandman Associates)
- Phase I Cultural Resources Assessment for the LADWP Harbor Refineries Recycled Water Pipeline Project (Michael Brandman Associates)
- Traffic Study for the LADWP Harbor Refineries Recycled Water Pipeline Project (KOA Corporation)
- All documents utilized in the preparation of this Draft EIR are listed in Section 7, Information Sources. In accordance with § 15150(b) of the CEQA Guidelines, these referenced documents and other sources used in the preparation of the Draft EIR are available for review at the Los Angeles Department of Water and Power, 111 North Hope Street, Los Angeles, California, 90012.

1.5 - Documents Prepared for the Project

Several technical studies, reports, and supporting documentation were prepared in order to address environmental issues in this EIR. Some are included as technical appendices on a CD as part of this Draft EIR. These appendices and all project documentation listed in the Information Sources section of the Draft EIR, are available for review at the Los Angeles Department of Water and Power, 111 North Hope Street, Room 1044, Los Angeles, California, 90012 and at www.ladwp.com/envnotices.

1.6 - Review of the Draft EIR

This Draft EIR is distributed to responsible and trustee agencies, other affected agencies, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the 45-day public review period, the EIR, including technical appendices, is available for review at www.ladwp.com/envnotices and at the following public libraries:

Los Angeles Public Library
Central Library
630 W. 5th Street
Los Angeles, CA 90071

Los Angeles Public Library
San Pedro Regional Branch
931 S. Gaffey Street
San Pedro, CA 90731

Los Angeles Public Library
Wilmington Branch Library
1300 N. Avalon Boulevard
Wilmington, CA 90744

County of Los Angeles Public Library - Carson
Regional Library
151 E. Carson St.
Carson, CA 90745

Los Angeles Public Library
Harbor City - Harbor Gateway Branch Library
24000 S. Western
Harbor City, CA 90710

Written comments of the Draft EIR should be addressed to:

Shilpa Gupta, Project Manager
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Upon completion of the 45-day public review period, written responses to all significant environmental issues raised will be prepared and available for review at least 10 days prior to the first public hearing before the Los Angeles Department of Water and Power Board of Commissioners, at which the certification of the Final EIR will be considered. These environmental comments and their responses will be included as part of the environmental record for consideration by decision-makers for the project.

SECTION 2: PROJECT DESCRIPTION

2.1 - Project Location

The Harbor Refineries Recycled Water Pipeline Project (HRRWPP) will be constructed underground along the public rights-of-way, located in the City of Carson and the community of Wilmington. The location of the project is demonstrated on a regional and local level in Exhibit 2-1 and Exhibit 2-2. The proposed 11.4-mile pipeline route of the HRRWPP is shown on Exhibit 2-3 and is described below in detail:

- Starting from the West Basin Municipal Water District (WBMWD) Juanita Millender-McDonald Water Recycling Facility (JMMWRF), located on the corner of East Dominguez Street and South Wilmington Avenue in the City of Carson, the pipeline will head south along South Wilmington Avenue until it intersects with East Carson Street. The pipeline will then travel west along East Carson Street, where it will cross the Dominguez Channel, and continue along East Carson Street until it reaches Avalon Boulevard. From there, the pipeline will travel south along Avalon Boulevard, into the community of Wilmington, where it will then split in two directions; one portion will travel west on Pacific Coast Highway and another portion will travel east on L Street.
- Going west from Avalon Boulevard, the proposed pipeline will travel on Pacific Coast Highway until it reaches Figueroa Street. From this intersection, the pipeline will split in two directions; one portion will continue west until it terminates at Pine Creek Lane, and the other portion of the pipeline will travel south on Figueroa Street. The pipeline that will travel south along Figueroa Street will continue south until it intersects with West L Street. From there, the pipeline will travel west along L Street until it splits in three directions. One portion of the pipeline will continue west on L Street to deliver recycled water to Harbor City College, another portion will travel north on Figueroa Place to deliver recycled water to Harbor Park Golf Course, and another portion of the pipeline will continue south on Figueroa Place towards the intersection of I Street. The portion of the pipeline traveling south on Figueroa Place will turn west onto I Street and will then continue west on Anaheim Street to supply recycled water to ConocoPhillips Refinery, the Ken Malloy Harbor Regional Park, and other Department of Health (DPH) approved uses.
- Going east from Avalon Boulevard, from the intersection of East L Street and Avalon Boulevard, the pipeline will travel east on East L Street until it intersects with Coil Avenue. From the intersection of L Street and Coil Avenue, the pipeline will split in two different directions. One portion of the pipeline will travel north along Coil Avenue before turning east on Mauretania Avenue and back to Pacific Coast Highway where it will terminate at the Tesoro Refinery. Another portion of the pipeline will travel south along Coil Avenue (from the intersection of L Street and Coil Avenue), continuing south along Mahar Avenue until reaching

Anaheim Street. From this point, the pipeline will travel east along Anaheim Street, turn north onto Henry Ford Avenue, continue east along L Street and then in will cross the Dominguez Channel. After crossing the Channel, the pipeline will continue east along I Street where it will then turn south onto Sampson Avenue. The pipeline will travel south a few feet until it terminates at the intersection of Anaheim and Sampson Avenue to supply recycled water to Air Products Plant and Valero Refinery.

2.2 - Project Characteristics

Construction of all approximately 60,000 feet of pipeline is expected to start in late 2009 and be completed by the end of the year 2011. The following discussion describes the various project components associated with the proposed project.

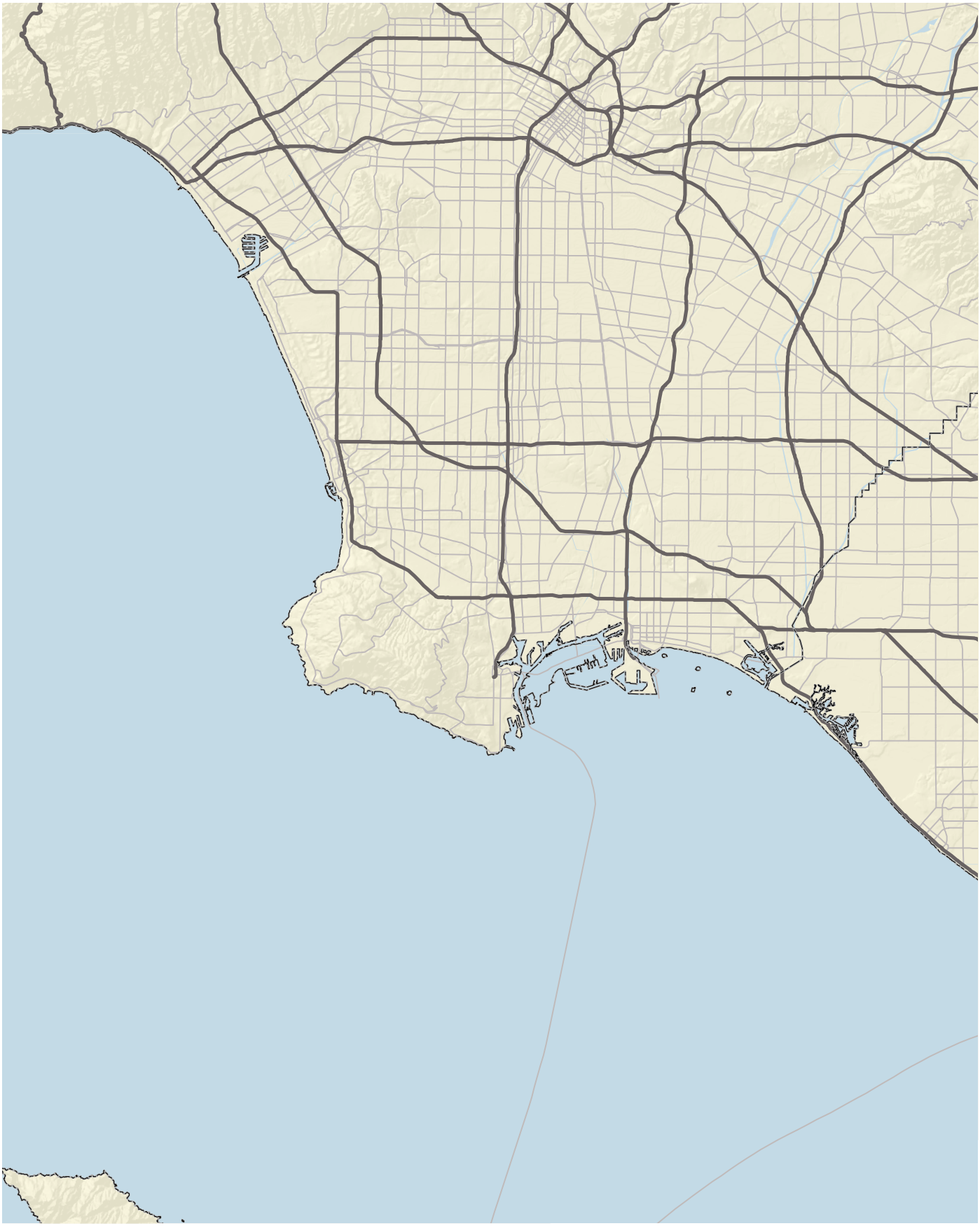
2.2.1 - Pipeline Construction Methods

The HRRWPP would consist of a 36-inch (or smaller) diameter pipeline installed in the ground beneath city streets. Installation of the pipeline would be accomplished primarily using open trench excavation. However, in areas where trenching is not possible such as the Dominguez Channel, railroad crossings and at certain major street intersections, construction of the pipeline will involve pipe jacking and/or directional drilling. The locations where the pipe jacking and/or directional drilling construction methods may be used are shown on Exhibit 2-4. As shown, pipe jacking will be utilized at various locations and the directional drilling method will be used to cross the Dominguez Channel. However, depending on the underground constraints and conditions, the number and location of the pipe jacking sites may vary during construction, including the addition of up to two additional pipe jacking locations beyond those identified in this section. It can be assumed that open trench excavation will be used for all other areas of the pipeline route.

Existing underground pipelines and other underground infrastructure such as electrical conduits, telephone conduits, sewer mains, water mains, storm drains, gas lines, and oil lines will be located within the right-of-way and crossed by the proposed pipeline. All shared and crossed utility lines will be located prior to any ground disturbance so as to identify any potential constraints prior to construction.

Open Trench Excavation

Open-trench excavation is a construction method typically utilized to install pipelines and their appurtenant structures. The process generally consists of excavation and shoring, pipe installation and backfilling with slurry followed by street restoration (where applicable).



NORTH

Michael Brandman Associates

Construction would progress along the alignment with the maximum length of open trench at one time being approximately 300 feet long with a total work area of approximately 1,000 linear feet. The entire width of the construction zone would be approximately 20 to 24 feet wide.

The following is a description of the phases of construction for trenching:

- **Site Preparation.** Traffic control plans, where necessary, would be first prepared in coordination with the Los Angeles Department of Transportation and/or local agency coordination, as applicable, to detour and delineate the traffic lanes around the work area. The approved plans would then be implemented. The existing pavement along the pipeline alignment would be cut with a concrete saw or otherwise broken and then removed using jackhammers, pavement breakers, and loaders. Other similar equipment may be used. The pavement would be removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

- **Excavation and Shoring.** A trench would be excavated along the alignment using backhoes, excavators, or other types of excavation equipment. Portions of the trench adjacent to some utilities may be manually excavated. The excavated soil may be temporarily stored in single rows adjacent to the trenches, stored at off-site staging areas, or immediately hauled away off-site.

  The size of the trench for the proposed pipeline would be approximately 48 inches wide and approximately 300 feet long at any given time for each section that is being constructed. In addition, depending on the depth of adjacent substructures along the alignment, the depth of the trench would range from approximately 5 to 10 feet below the ground surface. As the trench is excavated, the trench walls would be supported, or shored, typically with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used for shoring. Other similar shoring methods may be utilized. Utilities not relocated prior to trenching would be supported as excavation and shoring occurs. If construction occurs in areas with high groundwater, the groundwater would be removed during excavation of the trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before being discharged to the storm drain system under a permit issued by the RWQCB.

- **Pipe Installation and Backfilling.** Once the trench has been excavated and shored, pipe laying would begin. Bedding material (such as sand or slurry) would be placed on the bottom of the trench. Pipe segments would covered with a 0.008 inch-thick polyethylene sleeve and then would be lowered into the trench and placed on the bedding. If pipeline segments used do not include push-on joints, the segments would be welded to one another at the joints. The amount of pipe installed in a single day would vary, but is expected to range from 40 to 300 feet per day for the proposed pipeline. The recycled water line would be fully isolated from

existing potable water lines in accordance with Department of Health and Safety (DHS) regulations. Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench would be immediately backfilled with slurry backfill. Any open trench at the end of each work day would be covered with steel plates so traffic could resume use of the lanes.

- **Street Restoration.** Any portion of the roadway or landscaped areas damaged as a result of construction activities would be repaved and/or restored in accordance with all applicable City of Los Angeles Department of Public Works standards. Once the pavement has been restored, traffic delineation (striping) would also be restored.

Pipe Jacking

Jacking and boring will be used at most of the constrained locations such as major street intersections and railroad crossings. Exhibit 2-4 identifies nine jacking locations, but it is possible that up to 11 jacking locations may be required due to existing field conditions. The jack-and-bore limits surface disruption by using an auger to bore the pipeline underground and across to a specified location on the other side known as a receiving pit. Pipe jacking is an operation in which the soil ahead of the steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal, hydraulic jack, which is placed at the rear of the casing. The jacking equipment utilized for this operation is placed in the jacking pit. Once the casing is placed, the pipe is installed inside the casing. At the receiving pit, the pipe is welded to the next length of pipe to be installed. The jack and bore method will allow the pipeline to be installed without disrupting traffic in heavily traveled areas and without disrupting rail service. The entire width of the construction zone would be approximately 20 to 30 feet wide, depending on the size of the jacking pits. As with open trench excavation, the four primary phases for pipe jacking are site preparation, excavation and shoring, pipe installation, and site restoration as described below.

- **Site Preparation.** Where necessary, traffic control plans detailing methods for detour and delineation of traffic lanes around the work areas would be prepared and implemented. The Traffic Control Plans would be coordinated with the Los Angeles Department of Transportation, Caltrans, and all appropriate agencies. In preparing to construct the jacking and receiving pits, first the pavement would be cut using a concrete saw or pavement breaker. As with open-trench excavation, the pavement would be removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.
- **Excavation and Shoring.** A jacking pit and a receiving pit are generally used for each jacking location, one at each end of the pipe segment. The distance between the pits would be approximately 100 feet, but may be longer or shorter depending on site conditions. The average depth of construction would be 15 to 25 feet below the grade surface. The pits would be excavated with backhoes, cranes, and other excavation equipment. The excavated soil

would be immediately hauled away. As excavation occurs, the pits would be shored utilizing a beam and plate shoring system.

- **Pipe Installation.** Once the pits are constructed and shored, a horizontal hydraulic jack would be placed at the bottom of the jacking pit. The steel casing would be lowered into the pit with a crane and placed on the jack. A simple cutting shield would be placed in front of the pipe segment to cut through the soil more easily. As the jack pushes the steel casing and cutting shield into the soil, soil would be removed from within the leading casing with an auger or boring machine, either by hand or on a conveyor. Once the segment has been pushed into the soil, a new segment would be lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 10 feet per day. Once the casing has been installed, the carrier pipe would then be lowered and placed on the jacks, which would push the pipe into the steel casing. Installation of the pipeline is expected to progress at approximately 10 linear feet per day. Per County of Los Angeles Department of Health Services requirements, the pipeline would be covered with purple plastic containing lettering identifying the pipe as recycled water pipeline to prevent any potential potable use.
- **Street Restoration.** After completion of the pipe installation along the jacking location, the shoring system would be disassembled as the pits are backfilled, the soil compacted, and the pavement or landscaping above replaced. Once the pavement has been restored, traffic delineation (striping) would also be restored.

In sequence, the general process for both the open trench excavation and pipe jacking methods consists of site preparation, excavation, pipe installation and backfilling, and then site restoration. Both construction methods would require an off-site staging area to temporarily store equipment, supplies, and materials. It is anticipated that multiple staging areas will be required at various locations. While the exact locations of all staging areas are currently unknown, all staging areas are anticipated to take place within Los Angeles Department of Water and Power (LADWP) or WBMWD property. The primary staging areas will likely be at the LADWP's Harbor District Yard. Lane closures will occur along the pipeline route as needed. It is anticipated that construction of the proposed pipeline may result in the closing of up to three travel lanes where construction would be taking place. No complete street closures are anticipated. All traffic facility closures will have prior notice and approval from the Los Angeles Department of Transportation, Caltrans, and/or any other local transportation agency with jurisdiction.

Directional Drilling

The directional drilling method will be used at two different locations to install a portion of the pipeline across the Dominguez Channel. However, depending on the underground constraints and conditions, the number and location of the directional drilling sites may vary slightly during construction. This method requires drilling across and under the Channel using a drill head attached

to a 4-inch steel cable. The stringed pipe on the exit point of the drill is attached to the end of the steel cable and is pulled back with the pipe through the bore and out in the drill entry point. Required fittings are installed at each end of the pipe for connection to the pipeline installed by trenching method. This operation may require up to three lane closures.

As with open trench excavation and pipe jacking, the four primary phases for directional drilling can be defined as site preparation, excavation and shoring, pipe installation, and site restoration as described below.

- **Site Preparation.** Where necessary, traffic control plans detailing methods for detour and delineation of traffic lanes around the work areas would be prepared and implemented. The Traffic Control Plans would be coordinated with the Los Angeles Department of Transportation, Caltrans, and all appropriate agencies.
- **Excavation and Shoring.** This method requires drilling across and under the channel and/or freeway, using a drill head attached to a 4-inch steel cable (may require several passes until required bore is attained). The stringed pipe on the exit point of the drill is attached to the end of the steel cable and is pulled back with the pipe through the bore and out through the drill entry point. Required fittings are installed at each end of the pipe for connection to the pipeline installed by trenching method. The average depth of construction would be 20 to 60 feet below the grade surface.
- **Pipe Installation.** Once the pilot bore hole under the Channel is complete, a reamer will be attached to the drill stem to increase the size of the bore hole. Once the appropriate size is achieved, the pipe will be attached to the cable and the pipe will be pulled back through the hole. Installation of the pipeline is expected to progress at approximately 5 to 50 linear feet per day.
- **Street Restoration.** After completion of the pipe installation along the directional drilling location, the pavement or landscaping as necessary will be replaced. Once the pavement has been restored, traffic delineation (striping) would also be restored.

2.2.2 - Construction Timing and Equipment

Construction activities would occur between 6:00 a.m. and 4:00 p.m. Monday through Friday along the majority of the proposed pipeline route. However, nighttime construction (i.e., between 8:00 p.m. and 6:00 a.m.) may occur in both Carson and Los Angeles, to avoid traffic congestion, per Caltrans and other agency requirements.

Construction would typically require three to four crews of approximately eight workers each, daily, On a typical workday, an average of 15 to 30 workers (up to a maximum of 40 workers) would travel directly to one of the predetermined staging areas (primarily the Harbor District Yard) nearest the work site, where they would gather equipment and proceed in work crews, to the construction site along the alignment. Additionally, construction activities would include truck trips associated with

supply delivery (including pipeline sections), transport of excavated soil from trenching (soil would be transported to the closest appropriate LADWP facility, as is standard LADWP practice, for reuse or ultimate disposal), and transport of backfill and paving materials to the site. Exported material would be transported to the closest appropriate facility. Contaminated material, if encountered, will likely be hauled to an LADWP contractor facility located in Buttonwillow, California, or a similar facility in compliance with applicable federal, State, and local regulations. No existing or abandoned pipeline or utility infrastructure will be removed or replaced; therefore, no other material is expected to be removed during construction.

Table 2-1 lists the construction equipment required for the project along with the equipment's fuel type and the number of hours the equipment would be in service each day. For a maximum level of impact analysis contained in this Draft EIR, a worst-case scenario is assumed in that all equipment identified in Table 2-1 would be used at all times everyday of the construction period.

Table 2-1: Construction Equipment by Stage of Construction

Equipment	Quantity	Type of Fuel	Hours per Day
All Phases			
Construction Worker Vehicles	8	Light Gasoline	8
Site Preparation			
End Dump Trucks	6	Heavy Diesel	8
5-cyd Dump Truck	3	Medium Diesel	6
Jackhammers	3	Light Gasoline	8
Concrete Saws	3	Light Gasoline	8
Loaders	4	Light Gasoline	8
Fork-Lift	2	Light Gasoline	8
Excavating and Shoring			
End Dump Trucks	6	Heavy Diesel	8
5-cyd Dump Truck	4	Medium Diesel	6
Backhoe	4	Medium Diesel	6
Loader	4	Light Gasoline	6
Excavator	4	Medium Diesel	6
15-ton Crane	4	Heavy Diesel	8
Water Trunk	2	Heavy Diesel	8

Table 2-1 (cont.): Construction Equipment by Stage of Construction

Equipment	Quantity	Type of Fuel	Hours per Day
Pipe Installation & Backfilling			
Loader	4	Light Gasoline	6
15-ton Crane	4	Heavy Diesel	8
Backhoe	4	Medium Diesel	6
Compactor	4	Medium Diesel	4
Hydraulic Jack	3	Light Diesel	6
Auger Machine	3	Light Diesel	6
Welding truck with Generator	3	Light Gasoline	4
40 kW Generator	3	Light Gasoline	6
Drill/Bore Rig	1	Light Gasoline	8
Mud Rig	1	Light Gasoline	8
Water Truck	2	Heavy Diesel	8
Street Restoration			
Paver	2	Light Diesel	2

Notes:
cyd = cubic yards kW = kilowatt
Source: LADWP, 2009.

2.2.3 - Operations and Maintenance

Prior to the operation of the pipeline, two tests would be performed. A Hydrostatic Pressure Test would be performed to demonstrate that the pipeline, fittings, and welded section maintain mechanical integrity without failure or leakage under pressure and a Cross Connection Test (as defined by the California Code of Regulations) would be performed to ensure that an absolute separation exists between the recycled and potable water systems. Upon the successful completion of these tests the project would become operational. Operation of the proposed pipeline would not require any new permanent staff at either WBMWD or LADWP. Recycled water would be moved through the pipeline by pumps at the JMMWRF. The pumps would be electronically controlled and operated from either WBMWD or LADWP's operational control center.

The amount of recycled water pumped through the pipeline would be regulated to closely match demand in order to avoid stagnant water in the pipeline. Therefore, the quantity of water pumped would vary with maximum flows coinciding with peak demand for irrigation water in summer and minimum flows during winter.

In the event of pipe failure during operation, safety valves throughout the water distribution system may be shut off in response to a loss of pressure and to isolate any line breakage. The type of recycled water that will be delivered is generally referred to as Nitrified Title 22 recycled water. This water is treated in accordance the requirements established by the State of California Department of Public Health.

2.3 - Project Objectives

The objectives of the project are to:

- Improve the reliability of the City of Los Angeles water supply through increased recycled water use.
- Comply with the City of Los Angeles and the Los Angeles Department of Water and Power action plan titled "Securing L.A.'s Water Supply" outlining the steps to sustain a reliable water supply to meet current and future demand.
- Construct the necessary infrastructure to convey recycled water to the various industrial and irrigation customers in the Los Angeles Harbor Area.
- Provide recycled water to some of the City of Los Angeles' largest water customers, and where feasible, switch their potable water use into recycled water use.

2.4 - Intended Uses of This Draft EIR

This EIR has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code section 21000, et seq), and the California CEQA Guidelines. This report also complies with the rules, regulations, and procedures for implementation of CEQA as adopted by LADWP. LADWP is responsible for project approvals and supervision. Therefore, the LADWP will serve as the Lead Agency for the proposed project. The EIR may be used for City discretionary approvals and permits, which include, but are not necessarily limited to those identified below.

2.4.1 - State Agencies

California Regional Water Quality Control Board	• National Pollution Discharge Elimination System (NPDES) Permit for Construction Storm Water: Applicant is required to submit a Notice of Intent (NOI) to the RWQCB, Los Angeles Region, for coverage under the General Construction Permit. • NPDES Permit for Construction Dewatering. • NPDES Permit for Hydrostatic Test Water Discharge. • Clean Water Act, Section 402 General Construction Activity Storm Water Permit. • Storm Water Pollution Prevention Plan (SWPPP): The SWPPP is a standard requirement for development under the General Construction Permit. The SWPPP shall be developed and

	implemented throughout the entire project. The SWPPP shall contain the elements required by the General Construction Permit and illustrate the protective measures that would be taken during construction to control storm water runoff and erosion and siltation on site. The SWPPP is to remain on site throughout construction and be available for inspection if requested by the RWQCB or County.
California Department of Transportation	• Right-of-Way Encroachment Permit is required for trenching activities on Pacific Coast Highway and on-and-off ramps at Highway 101.
California Department of Public Health	• Coordination of design and construction involving activities that might potentially affect water supplies. • Approval for Recycled Water Pipeline Construction
California Division of Occupational Safety and Health	• Construction permit is required for construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend.

2.4.2 - Local Agencies

County of Los Angeles Department of Public Health	• Approval for regulatory requirements such as the Separation Criteria of Water Main and Non Potable Pipeline.
County of Los Angeles Flood Control District	• Right of Way Easement for construction and maintenance of pipeline under the Dominguez Channel. • A discharge permit is needed for construction dewatering water discharge into the storm system and channels.
County of Los Angeles Department of Public Works	• Coordination of jacking activities beneath various intersections (utility locations).
City of Los Angeles, Department of Water and Power (CEQA Lead Agency)	• Certification by the Board of Commissioners that the EIR was prepared in accordance with CEQA and other applicable codes and guidelines (discretionary). • Approval by the Board of Commissioners of the proposed project (discretionary).
City of Carson Planning Commission	• CEQA Compliance and approval to construct the proposed project.
City of Los Angeles Department of Transportation	• Temporary lane closures and traffic related issues during construction.
City of Los Angeles Department of Parks and Recreation	• Coordination of construction activities near the Ken Malloy Harbor Regional Park.
City of Los Angeles Police Department	• Security and street clearance needed for nighttime construction.

City of Los Angeles Department of Public Works, Bureau of Street Services	• Planning for street closures.
City of Los Angeles Department of Public Works, Bureau of Engineering	• Excavation Permits. • Haul Route Permits.
City of Los Angeles Department of Building and Safety	• General building permits for grading, electrical, and mechanical work would be needed. • Haul Route Permits.
City of Los Angeles Department of Planning	• Conditional Use Permit.
City of Los Angeles Department of Public Works, Flood Control	• Discharge Permit for construction dewatering and hydrostatic test water discharge in storm system and channel.
City of Los Angeles Department of Public Works, Bureau of Sanitation	• Approval for discharging hydrostatic test water to the sewer system is required.

SECTION 3: ENVIRONMENTAL IMPACT ANALYSIS

Introduction to Environmental Analysis

Sections 3.1 through 3.6 of the Draft EIR contain discussion of the potential environmental impacts related to the implementation of the proposed project.

Environmental Topics

Project characteristics include the construction of approximately 60,000 feet of pipeline starting in late 2009, to be completed by approximately December 2011. Pipeline construction will include the use of open trench excavation, pipe jacking and directional drilling.

The potential environmental effects of the project are analyzed in the following topical environmental issue areas:

- Air Quality
- Cultural Resources
- Hazards and Hazardous Materials
- Noise
- Transportation and Traffic
- Climate Change

Format Used for Impact Analysis

Each of the environmental impact analysis sections contains the following components:

- **Environmental Setting** identifies and describes the existing onsite physical environmental conditions associated with each of the impact sections.
- **Regulatory Framework** provides an understanding of the regulatory environment associated with the project.
- **Thresholds of Significance** identifies thresholds from Appendix G of the CEQA Guidelines that assist in a determination of whether an impact is significant. Unless specifically identified within each environmental issue section of this document, the thresholds of significance used are those contained in Appendix G of the Guidelines.
- **Project Impacts** describes environmental changes to the existing physical conditions that may occur if the proposed project is implemented, and evaluate these changes with respect to the thresholds of significance.

- **Mitigation Measures** are those specific measures that may be required of the project by the Lead Agency in order to: 1) avoid an impact; 2) minimize an impact; 3) rectify an impact by restoration; 4) reduce or eliminate an impact over time by preservation and maintenance operations; or 5) compensate for the impact by replacing or providing substitute resources.
- **Level of Significance After Mitigation** describes the level of impact significance remaining after mitigation measures have been implemented.

3.1 - Air Quality

3.1.1 - Introduction

This section describes air quality and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Air Quality Analysis Report prepared in May 2009, by Michael Brandman Associates, included in this Draft EIR's Appendix B, Air Quality.

3.1.2 - Environmental Setting

The Project is located within the Cities of Carson and Los Angeles, in Los Angeles County. The project is within the South Coast Air Basin (Basin). The Basin is bounded on the west by the Pacific Ocean and on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains. The southern limit of the Basin is the San Diego County line. The Basin consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County.

Regional and local air quality in the Basin is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day.

Regional Air Quality

Climate and Meteorology

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas. Air stagnation may occur during the early evening and early morning during periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the Air Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas where the project site is located.

The majority of the annual rainfall in the Air Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thunderstorms in the coastal regions and slightly heavier showers in the eastern portion of the Air Basin along the coastal side of the mountains.

Temperature inversions limit the vertical depth through which pollution can be mixed. Among the most common temperature inversions in the basin, radiation inversions form on clear winter nights when cold air off mountains sink to the valley floor while the air aloft over the valley remains warm. These inversions, in conjunction with calm winds, trap pollutants near the source. Other types of temperature inversions include marine, subsidence, and high-pressure inversions.

Summers are often periods of hazy visibility and occasionally unhealthful air, while air quality impacts in the winter tend to be highly localized and can consist of odors from agricultural operations.

Emissions Inventory

Background

An emissions inventory is an account of the amount of air pollution generated by various emissions sources. To estimate the sources and quantities of pollution, the California Air Resources Board (ARB), in cooperation with local air districts, other government agencies, and industry, maintains an inventory of California emission sources. Sources are subdivided into the four major emission categories: mobile, stationary, area-wide, and natural sources.

Mobile sources include on-road sources and off-road mobile sources. The on-road emissions inventory, which includes automobiles, motorcycles, and trucks, is based on an estimation of population, activity, and emissions of the on-road motor vehicles used in California. The off-road emissions inventory is based on an estimate of the population, activity, and emissions of various off-road equipment, including recreational vehicles, farm and construction equipment, lawn and garden equipment, forklifts, locomotives, commercial marine ships, and marine pleasure craft.

Stationary sources are large, fixed sources of air pollution, such as power plants, refineries, and manufacturing facilities. Stationary sources also include aggregated point sources. These include many small point sources, or facilities, that are not inventoried individually but are estimated as a group and reported as a single-source category. Examples include gas stations and dry cleaners. Each of the local air districts estimates the emissions for the majority of stationary sources within its jurisdiction. Stationary source emissions are based on estimates made by facility operators and local air districts. Emissions from specific facilities can be identified by name and location.

Area-wide sources include source categories associated with human activity that take place over a wide geographic area. Emissions from area-wide sources may be either from small, individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products, and dust from unpaved roads or farming operations (such as tilling).

Natural, or non-anthropogenic, sources include source categories with naturally occurring emissions such as geogenic (e.g., petroleum seeps), wildfires, and biogenic emissions from plants.

Los Angeles County Emissions Inventory

The 2008 emissions inventory for the County of Los Angeles is available in ARB's 2009 Almanac Emission Projection Data. Table 3.1-1 summarizes the estimated 2008 emissions for the main pollutants of concern in the Basin.

Table 3.1-1: Los Angeles County Inventory

Emission Category	Tons per Day					
	ROG	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Stationary Sources	67	37	39	15	25	12
Area-wide Sources	87	51	16	0	135	31
Mobile Sources	220	1,871	504	33	29	24
Natural Sources	41	65	2	1	7	6
Total	414	2,023	561	49	196	72
Source: ARB 2009a.						

Pollutants of Concern

The criteria pollutants of greatest concern for the basin are ozone, PM10, and PM2.5. In addition, carbon monoxide (CO) is a criteria pollutant of concern in the Basin due to the potential for CO hotspots on congested roadways and at congested intersections. Toxic air contaminants (TACs) make up a category of pollutants that cause adverse health effects. In addition, greenhouse gases (GHG) are a concern.

Ozone

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and NOx, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Often, the effects of emitted ROG and NOx are felt a distance downwind of the emission sources. Ozone is subsequently considered a regional pollutant.

Ozone is a regional pollutant, as the reactions forming it take place over time, and it materializes downwind from the sources of the emissions. As a photochemical pollutant, ozone is formed only during daylight hours under appropriate conditions, but it is destroyed throughout the day and night. Thus, ozone concentrations vary, depending upon both the time of day and the location. Even in pristine areas, some ambient ozone forms from natural emissions that are not controllable. This is

termed background ozone. The average background ozone concentrations near sea level are in the range of 0.015 to 0.035 parts per million (ppm), with a maximum of about 0.04 ppm.

Reactive Organic Gases (ROG)

ROG, also known as volatile organic compounds (VOCs), are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participate in atmospheric photochemical reactions. ROG consist of nonmethane hydrocarbons and oxygenated hydrocarbons. Hydrocarbons are organic compounds that contain only hydrogen and carbon atoms. Nonmethane hydrocarbons are hydrocarbons that do not contain the unreactive hydrocarbon methane. Oxygenated hydrocarbons are hydrocarbons with oxygenated functional groups attached.

There are no state or national ambient air quality standards for ROG because they are not classified as criteria pollutants. They are regulated, however, because a reduction in ROG emissions reduces certain chemical reactions that contribute to the formulation of ozone. ROG is also transformed into organic aerosols in the atmosphere, which contribute to higher PM10 levels and lower visibility.

Nitrogen Oxides (NO_x)

During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides or NO_x. This occurs primarily in motor vehicle internal combustion engines, fossil fuel-fired electric utility facilities, and industrial boilers. The pollutant NO_x is a concern because it is an ozone precursor, which means that it helps form ozone. When NO_x and ROG are released in the atmosphere, they can chemically react with one another in the presence of sunlight and heat to form ozone. NO_x can also be a precursor to PM_{10} and $PM_{2.5}$.

Because NO_x and ROG are ozone precursors, the health effects associated with ozone (as discussed above) are also indirect health effects associated with significant levels of NO_x and ROG emissions.

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope.

Particle pollution includes “inhalable coarse particles,” with diameters larger than 2.5 micrometers and smaller than 10 micrometers and “fine particles,” with diameters that are 2.5 micrometers and smaller. For reference, $PM_{2.5}$ is approximately one-thirtieth the size of the average human hair.

Carbon Monoxide (CO)

CO is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. Other non-road engines and vehicles (such as construction equipment and boats)

contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential woodburning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors.

Toxic Air Contaminants (TAC)

A toxic air contaminant (TAC) is defined as an air pollutant which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

The CARB has designated almost 200 compounds as TACs. Additionally, the CARB has implemented control strategies for a number of compounds that pose high health risk and show potential for effective control.

Diesel Particulate Matter (DPM)

The CARB identified the PM emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. In California, diesel engine exhaust has been identified as a carcinogen. Most researchers believe that diesel exhaust particles contribute the majority of the risk.

DPM is emitted from both mobile and stationary sources. In California, on-road, diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction (except highway) manufacturers of asphalt paving materials and blocks, and electrical generation.

Local Air Quality

Climate and Meteorology

The Long Beach Weather Service Contract Meteorological Office (WSCMO) is located approximately 5 miles east of the northern portion of the Project. Weather data from this station shows an annual average temperatures in the area from an average monthly high of 83.9 degrees ºF in August to an average monthly low of 45.3 ºF in December. The average annual rainfall in the Project

area, as recorded between 1958 and 2007, is 12.01 inches. Most (approximately 86 percent) of the annual rainfall occurs between November and March.

Air Quality

Existing local air quality, historical trends, and projections of air quality are best evaluated by reviewing relevant air pollutant concentrations from near the Project area. ARB operates an air monitoring station on Long Beach Boulevard in north Long Beach, approximately 3 miles east of the northern portion of the Project. The north Long Beach ambient air monitoring station (North Long Beach Station) measures 1 hour and 8-hour ozone, daily PM_{10}, 8-hour CO, NO_2, SO_2, and $PM_{2.5}$. Table 3.1-2 summarizes 2006 through 2008 published monitoring data for the North Long Beach Station.

Table 3.1-2: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Metric	Year		
			2006	2007	2008
Ozone	1 Hour	Max 1 Hour (ppm)	0.081	0.099	0.089
		Days > CAAQS (0.09 ppm)	0	1	1
	8 Hour	Max 8 Hour (ppm)[1]	0.059	0.074	0.074
		Days > CAAQS (0.07 ppm)	0	1	1
		Days > NAAQS (0.075 ppm)	0	0	0
Carbon Monoxide	1 Hour[2]	Max 1 Hour (ppm) [2]	4.80	3.70	3.56
	8 Hour	Max 8 Hour (ppm)	3.36	2.59	2.49
		Days > CAAQS (9.0 ppm)	0	0	0
		Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide	1 Hour	Max 1 Hour (ppm)[1]	0.102	0.107	0.084
		Days > CAAQS (0.18 ppm)	0	0	0
Sulfur Dioxide		Max 24 Hour (ppm)	0.010	0.010	0.012
		Days > CAAQS (0.04 ppm)	0	0	0
		Days > NAAQS (0.14 ppm)	0	0	0
Particulate Matter (PM_{10})	24 Hour	Est. Annual Average ($\mu g/m^3$) [1]	30.9	*	*
		Max 24 Hour ($\mu g/m^3$)	78.0	232.0	41.0
		Est. Days > CAAQS (50 $\mu g/m^3$)	29.3	*	*
		Est. Days > NAAQS (150 $\mu g/m^3$)	0	6.1	*
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	Annual Average ($\mu g/m^3$)[3]	14.1	14.6	*
		Max 24 Hour ($\mu g/m^3$)	58.5	82.8	39.4
		Measured Days > NAAQS (35 $\mu g/m^3$)	5	12	2

Table 3.1-2 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Metric	Year		
			2006	2007	2008
Abbreviations: > = exceed ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter * = Insufficient/No Data Max = maximum Est. = Estimated CAAQS = California Ambient Air Quality Standards NAAQS = National Ambient Air Quality Standards [1] From the California Measurement [2] The CARB does not report 1-hour average CO concentrations in its database, only 8-hour CO concentrations. Therefore, the 1-hour CO concentration was derived by dividing the 8-hour concentration by 0.7 (UCD 1997) [3] Federal Annual Average Source: California Air Resources Board (ARB 2009b).					

Local Sources of Air Pollution

Within about two miles from the project, there are numerous warehouses, industrial facilities, tank farms and rail spurs, as well as a portion of the 3,200-acre Port of Long Beach.

Highways within approximately 2 miles of the project include Interstate 710, Interstate 405, Interstate 110, Highway 47 (Harbor Freeway and West Ocean Boulevard), Highway 103 (Terminal Island Freeway), Highway 1 (West Pacific Coast Highway).

Sensitive Receptors

Certain populations, such as children, the elderly, and persons with preexisting respiratory or cardiovascular illness, are particularly sensitive to the health impacts of air pollution. For purposes of CEQA, the South Coast Air Quality Management District (SCAQMD) considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors for those purposes.

The closest sensitive receptors are existing residential dwellings in the immediate vicinity of the proposed pipeline route. Residences are located in close proximity to Wilmington Avenue, East Carson Street, Avalon Boulevard, East L Street, Coil Avenue, E. Mauretania, Mahar Avenue, and East Anaheim Street. Schools within 0.25 miles of the project include (approximate miles in parentheses):

- Del Amo Elementary School - 21228 Water Street Carson, CA 90745 (0.10 mile)
- Carson Montessori Academy - 812 East Carson Street Carson, CA 90745 (0.01 mile)
- Carson Christian School - 21828 Avalon Boulevard Carson, CA 90745 (0.03 mile)

- Carnegie Middle School - 21820 Bonita Street Carson, CA 90745 (0.15 mile)
- Bonita Street Elementary School - 21929 Bonita Street Carson, CA 90745 (0.22 mile)
- Broad Avenue Elementary School - 24815 Broad Avenue Wilmington, CA 90744 (0.10 mile)
- Wilmington Christian School - 24910 S Avalon Boulevard Wilmington, CA 90744 (0.01 mile)
- Small World Learning Center - 1749 N Avalon Boulevard Wilmington, CA 90744 (0.01 mile)
- Avalon High School - 1425 N Avalon Boulevard Wilmington, CA 90744 (0.01 mile)
- First Baptist Christian School - 1360 Broad Avenue Wilmington, CA 90744 (0.14 mile)
- Fries Avenue Elementary School - 1301 N Fries Avenue Wilmington, CA 90744 (0.014 mile)
- Holy Family Grammar School - 1122 E Robidoux Street Wilmington, CA 90744
- Wilmington Park Early Education Center - 1419 E Young Street Wilmington, CA 90744 (0.05 mile)
- Wilmington Park Elementary - 1140 Mahar Avenue Wilmington, CA 90744 (0.00 mile)
- Happy Harbor Preschool - 1530 N Wilmington Boulevard Wilmington, CA 90744 (0.20 mile)
- Pacific Harbor Elementary School - 1551 N Wilmington Boulevard Wilmington, CA 90744 (0.24 mile)
- Holy Family Grammar School - 1122 East Robidoux Street Wilmington, CA (0.04 mile)
- Vermont Christian School - 931 Frigate Avenue Wilmington, CA 90744 (0.10 mile)

3.1.3 - Regulatory Framework

Air pollutants are regulated at the national, State, and air basin level; each agency has a different degree of control. The United States Environmental Protection Agency (EPA) regulates at the national level. ARB regulates at the state level. SCAQMD regulates at the air basin level.

Federal and State

EPA handles global, international, national, and interstate air pollution issues and policies. EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans (SIPs), provides research and guidance in air pollution programs, and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are NAAQS for six common air pollutants, called criteria air pollutants, which were identified resulting from provisions of the Clean Air Act of 1970. The six criteria pollutants are:

- Ozone
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide

The NAAQS were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

The SIP for the State of California is administered by ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. A SIP is prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain NAAQS. The SIP incorporates individual federal attainment plans for regional air districts. Federal attainment plans prepared by each air district are sent to ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

ARB also administers California Ambient Air Quality Standards (CAAQS) for the ten air pollutants designated in the California Clean Air Act (CCAA). The ten state air pollutants are the six criteria pollutants listed above as well as visibility reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

Federal and state ambient air quality standards and the most relevant effects are summarized in Table 3.1-3.

Table 3.1-3: Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard
Ozone	1-hour	0.09 ppm	—
	8-hour	0.070 ppm	0.075 ppm
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9.0 ppm	9 ppm
Nitrogen dioxide (NO_2)	1-hour	0.18 ppm	—
	Mean	0.030 ppm	0.053 ppm
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	—
	24-hour	0.04 ppm	0.14 ppm
	Mean	—	0.030 ppm
Particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3
	Mean	20 µg/m^3	—
Particulate matter ($PM_{2.5}$)	24-hour	—	35 µg/m^3
	Mean	12 µg/m^3	15.0 µg/m^3

Table 3.1-3: Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard
Hydrogen sulfide	1-hour	0.03 ppm	—
Sulfates	24-hour	25 µg/m^3	—
Lead	30-day	1.5 µg/m^3	—
	Quarter	—	1.5 µg/m^3

Abbreviations:
ppm = parts per million (concentration)
Mean = Annual Arithmetic Mean
Quarter = Calendar year quarter
µg/m^3 = micrograms per cubic meter
30-day = 30-day average
Sources: ARB 2008a

Applicable Toxic Air Contaminant Regulation

ARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, Beginning in 2008, would require that new 2008 and subsequent model-year heavy-duty diesel engines shall be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged. If the parking brake is not engaged, then the engine shutdown system shall shut down the engine after 900 seconds of continuous idling operation once the vehicle is stopped and the transmission is set to "neutral" or "park."

ARB's Land Use Handbook

ARB adopted the Air Quality and Land Use Handbook: A Community Health Perspective (Land Use Handbook) in 2005. The Land Use Handbook provides information and guidance on siting sensitive receptors in relation to sources ofTACs. The sources of TACs identified in the Land Use Handbook are high-traffic freeways and roads, distribution centers, rail yards, ports, refineries, chrome plating facilities, dry cleaners, and large gasoline dispensing facilities. If the project involves siting a sensitive receptor or source of TAC discussed in the Land Use Handbook, siting mitigation may be added to avoid potential land use conflicts, thereby reducing the potential for health impacts to the sensitive receptors. The Project would not construct a source of TACs or a location of sensitive receptors.

South Coast Air Quality Management District

The agency for air pollution control for the South Coast Air Basin (basin) is the SCAQMD. SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the basin. SCAQMD, in coordination with the SCAG, is also responsible for developing, updating, and implementing the AQMP for the basin.

Attainment Status

There are three terms used to describe if an air basin is exceeding or meeting federal and state standards: Attainment, Nonattainment, and Unclassified. Air basins are assessed for each applicable standard and receive a designation based on that assessment. Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring value exceeds the threshold per year. In contrast, the federal annual PM2.5 standard is met if the 3-year average of the annual average PM2.5 concentration is less than or equal to the standard.

Areas are designated attainment or nonattainment on a per-pollutant basis. If an air basin exceeds the "form" of a federal or state standard, the air basin is designated as "nonattainment" for that air pollutant. An air basin is designated as "attainment" for pollutant if all the standards for that pollutant are met. If there is inadequate or inconclusive data to make a definitive attainment designation for a pollutant, the air basin is considered "unclassified."

The current attainment designations for the Basin are shown in Table 3.1-4. The Basin is designated as nonattainment for the State and federal ozone, PM_{10}, and $PM_{2.5}$, standards.

Table 3.1-4: Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
Source: State Status from California Air Resources Board (ARB 2006). National Status from U.S. Environmental Protection Agency (EPA 2009).		

Air Quality Management Plan (AQMP)

The 2007 AQMP is the current plan to lead the basin into compliance of the national 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards.

The 2007 AQMP was adopted by the SCAQMD on June 1, 2007 (SCAQMD 2007b). On July 13, 2007, the SCAQMD Board adopted the 2007 Final AQMP Transportation Conformity Budgets and directed the Executive Officer to forward them to ARB for its approval and subsequent submittal to the U.S. EPA. On September 27, 2007, ARB adopted the State Strategy for the 2007 State Implementation Plan (SIP) and the 2007 AQMP as part of the SIP.

The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling. The 2007 AQMP outlines a detailed strategy for meeting the federal health-based standards for $PM_{2.5}$ by 2015 and 8-hour ozone by 2024 while accounting for and accommodating future expected growth. Most of the reductions will be from mobile sources, which are currently responsible for about 75 percent of all smog and particulate forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including measures to reduce emissions from new commercial and residential developments, more reductions from industrial facilities, and reductions from wood-burning fireplaces and restaurant charbroilers.

Rules and Regulations

The AQMP for the basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the State and national ambient air quality standards. The rules and regulations that apply to this Project include, but are not limited to, the following:

- SCAQMD Rule 402 prohibits a person from 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, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices (BMPs), such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.
- SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the Project must comply with SCAQMD Rule 1108.

Local

City of Carson

The City of Carson General Plan, adopted in 2007), establishes the following goals and policies in the Air Quality Element that are applicable to the proposed project:

Issue: Dust Generation

Goal: AQ-1 Reduce particulate emissions from paved and unpaved surfaces during building construction

Policies: AQ-1.1 Continue to enforce ordinances which address dust generation and mandate the use of dust control measures to minimize this nuisance

City of Los Angeles (Community of Wilmington)

The City of Los Angeles establishes the following goals and policies in the Air Quality Element of the General Plan, adopted in 1992, that are applicable to the proposed project:

Objective 1.3:

It is the objective of the City of Los Angeles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites.

Policies

1.3.1 Minimize particulate emissions from construction sites.

3.1.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to air quality are significant environmental effects, the following questions are analyzed and evaluated.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a.) Conflict with or obstruct implementation of the applicable air quality plan?

b.) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c.) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

d.) Expose sensitive receptors to substantial pollutant concentrations?

e.) Create objectionable odors affecting a substantial number of people?

While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), the SCAQMD recommends that its

quantitative air pollution thresholds be used to determine the significance of project emissions. These thresholds are discussed under each impact section below.

3.1.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Air Quality Plan

Impact AQ-1	The project would not conflict with or obstruct implementation of the applicable air quality plan.

Threshold

This assessment uses the following criteria for determining Project consistency with the current AQMP.

Project's Contribution to Air Quality Violations

According to the SCAQMD (1993), a project is consistent with the AQMP if a project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (SCAQMD 1993, Page 12-3). The project's potential to contribute to an air quality standard violation is assessed in Impact AQ-2.

Control Measures

The next criterion is compliance with the control measures in the current AQMP. The 2007 AQMP aims to attain the national $PM_{2.5}$ and 8-hour ozone standards by 2015 and 2024, respectively. This is done by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that $PM_{2.5}$ is formed primarily secondarily. Therefore, instead of reducing fugitive dust, the strategy for reducing $PM_{2.5}$ focuses on reducing precursor emissions of SOx, directly-emitted $PM_{2.5}$, NO_x, and VOC. The Final 2007 AQMP control measures consist of four components: 1) the SCAQMD's Stationary and Mobile Source Control Measures; 2) the ARB's Proposed State Strategy; 3) the SCAQMD Staff's Proposed Policy Options to Supplement the ARB's Control Strategy; and 4) Regional Transportation Strategy and Control Measures provided by SCAG.

Compliance with SCAQMD Regional Thresholds

Although there is no known guidance that correlates AQMP consistency with the SCAQMD regional thresholds, it is common to use the SCAQMD thresholds in assessing AQMP compliance. The project's regional impact is assessed in Impact AQ-3.

Impact Analysis

Project's Contribution to Air Quality Violations

As shown in the analysis for Impact AQ-2 below, the Project could violate an air quality standard or contribute substantially to an existing or projected local air quality violation. Therefore, the Project does not meet the first indicator.

Control Measures

Compliance with applicable rules and regulations is a requirement. Therefore, the Project would comply with all of the SCAQMD's applicable rules and regulations. The Project complies with this criterion.

Compliance with SCAQMD Regional Thresholds

The regional significance analysis of construction emissions demonstrated that without mitigation, emissions during construction would exceed the SCAQMD regional thresholds. Therefore, without mitigation, the Project is not consistent with the SCAQMD regional thresholds.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Refer to MM AQ-2a, AQ-2b, AQ-3a, and AQ-3b.

Level of Significance After Mitigation

Less than significant impact after mitigation incorporated.

Air Quality Standards / Violations

Impact AQ-2	**The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Threshold

Construction-Generated Criteria Pollutants

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (LSTs), which is consistent with SCAQMD's Environmental Justice Enhancement Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable state or national ambient air quality standard. The LSTs are developed based on the ambient concentrations of each pollutant of concern (NO_x, CO, PM_{10}, and $PM_{2.5}$) for each source receptor area. LSTs were developed in recognition of the fact that criteria pollutants such as CO, NO_x, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts as well as regional impacts. LSTs were set to protect sensitive receptors near the on-site project emissions. Therefore, LSTs apply only to on-site emissions that occur in any one location.

To facilitate the localized assessment process, the SCAQMD LST methodology (SCAQMD 2003) provides a series of emission rate look-up tables for projects up to 5 acres in size. If onsite construction emissions are above the emission rates listed in the look-up tables (LST), then the project would be considered to have a significant air quality impact. The current look-up tables cover the years 2005 through 2007. The applicable LSTs were obtained from the look-up tables in the SCAQMD Final LST Methodology (2003) for a 1-acre project in SRA 4 with the distance to the nearest receptor as 25 meters. The LSTs are summarized in Table 3.1-5.

Table 3.1-5: SCAQMD Localized Thresholds

Pollutant	Localized Significance Threshold (lbs/day)
Nitrogen Dioxide (NOx)	46
Carbon Monoxide (CO)	574
PM_{10}	4
$PM_{2.5}$	3
Source: South Coast Air Quality Management District (SCAQMD 2003 and SCAQMD 2006).	

Operational CO Hotspot

Project concentrations may also be considered significant if a carbon monoxide (CO) hotspot intersection analysis determines that project generated CO concentrations cause a localized violation of the state or federal CO standards.

Impact Analysis

Construction-Generated Criteria Pollutants

On-site construction-generated emissions were estimated per the methodology contained in Appendix B, and are presented in Table 3.1-6. As shown in the table the excavation and shoring phase would exceed the SCAQMD's LST for the project location. Paving and pipe installation and backfill would not exceed the LST.

Table 3.1-6: Localized Significance Analysis (Construction)

Phase	Onsite Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Paving	2.83	1.47	0.25	0.23
Excavation and Shoring	82.90	38.54	9.84	5.45
Pipe Installation and Backfill	24.18	10.71	1.33	1.23
Localized Significance Threshold	46	574	4	3
Exceed Threshold?	Yes	No	Yes	Yes
Note: Excludes off-site emission such as employee trips. Each phase assumed to occur at a different location Source: MBA 2009, URBEMIS2007.				

Operational CO Hotspot

This analysis follows guidelines recommended by the CO Protocol (UCD 1997) and the SCAQMD. According to the CO Protocol, project-impacted intersections with Level of Service (LOS) E or F require detailed analysis. In addition, project-impacted intersections that operate under LOS D conditions in areas that experience meteorological conditions favorable to CO accumulation require a detailed analysis. The SCAQMD recommends that a local CO hotspot analysis be conducted if the intersection meets one of the following criteria:

1) The intersection is at Level of Service (LOS) D or worse and where the project increases the volume to capacity ratio by 2 percent, or
2) The project decreases LOS at an intersection from C to D.

The proposed Project is the construction of a recycled water pipeline, and would not result in changes to the existing wastewater processing facilities or otherwise increase or decrease on-going roadway traffic. Although the project would generate a short-term increase in roadway traffic associated with materials and soils hauling, the project would not generate a significant number operational trips. Therefore, the project is less than SCAQMD's screening threshold.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AQ-2a In addition to compliance with SCAQMD Regulation 402 (Fugitive Dust), the Construction Manager/Contractor will implement the following dust control measures for all Excavation and shoring activities:

a.) Expeditiously replace ground cover in disturbed areas.
b.) Water disturbed surfaces at least 3x per day.
c.) All stockpiles shall be covered

MM AQ-2b Prior to the start of construction, the LADWP will draft a Construction Emission Reduction Plan (Plan) that details implementation of this measure, including discussions on feasibility and the degree of implementation of specific Plan components. The construction manager shall keep a copy of the Plan on-site during construction and shall implement the components of the Plan. The Plan shall demonstrate a reduction in maximum daily NO_x emissions from the excavation and shoring phase such that the emissions will not exceed the SCAQMD's LST thresholds. The primary method of achieving emission reductions is reducing the maximum equipment use hours to occur on any one day at any one location of

excavation and shoring. Total on-site (off-road equipment) horse power-hours (hp*h) allowed to occur at any one location to will be restricted to 13,825 or less.

Level of Significance After Mitigation

Less than significant impact after mitigation incorporated.

The air quality analysis assumes the following activity would occur at one location for excavation and shoring—22 diesel-powered off-road equipment units running for a total of 136 hours on any one day (a total of 25,136 hp*h). This equipment mix excludes end dump truck and 5 cy dump truck emissions and activity, as they are mobile and associated with pipe and materials hauling. A reduction daily hours of equipment use that would occur at any one location on any one day would result in a reduction of daily emissions. Restricting hp*h to 13,825 or less at any one location reduces the total hp*h by 45 percent, thereby reducing exhaust emissions by a near-equal amount. Examples of fleet mixes and hours of equipment use for excavation and shoring that would meet the mitigation requirement are provided in Table 3.1-7 for illustrative purposes. The mitigation is a reduction in activity at any one site. Therefore, excavation and shoring activities may occur at multiple construction sites, and the total fleet in use may exceed 13,825 hp*h without generating a localized impact. Mitigated emissions are presented below in Table 3.1-8.

Table 3.1-7: Examples of Daily Fleet Use

Equipment	Number	HP	Daily Hours	HP*H
Example Scenario 1				
Backhoe	3	6	108	1,944
Loader	3	6	108	1,944
Excavator	3	6	168	3,024
Compactor	4	4	8	128
15-Ton Crane	1	8	399	3,192
Water Truck	2	8	189	3,024
			Total HP*H Scenario 1	13,256
Example Scenario 2				
Backhoe	3	4	108	1,296
Loader	3	4	108	1,296
Excavator	4	6	168	4,032
Compactor	4	4	8	128
15-Ton Crane	2	6	399	4,788
Water Truck	2	6	189	2,268
			Total HP*H Scenario 2	13,808

Table 3.1-8: Localized Significance Analysis (Mitigated Construction)

Emissions Source	Onsite Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Dust	—	—	1.13	0.24
Equipment Exhaust*	45.60	23.51	2.62	2.41
Total Excavation and Shoring	45.60	23.51	3.75	2.41
Localized Significance Threshold	46	574	4	3
Exceed Threshold?	No	No	No	No
Note:* 39 percent reduction in equipment exhaust applied. Source: MBA 2009, URBEMIS2007				

Criteria Pollutant

Impact AQ-3 **The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).**

Threshold

The following regional significance thresholds have been established by SCAQMD. Projects within the South Coast Air Basin region with construction or operation related emissions in excess of any of the thresholds presented in Table 3.1-9 are considered significant. Regional thresholds were set to protect air resources within the Basin.

The project is construction of a pipeline to deliver existing recycled water to existing water users, essentially offsetting the use of potable water. There are no operational emissions or increase in on-going existing activities anticipated to result from the implementation of the project. Therefore, this analysis is restricted to construction-generated impacts.

Table 3.1-9: SCAQMD Regional Thresholds

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Nitrogen Oxides (NO_x)	100	55
Volatile Organic Compounds (VOC)	75	55
Particulate Matter (PM_{10})	150	150
Particulate Matter ($PM_{2.5}$)	55	55
Sulfur Oxides (SO_x)	150	150
Carbon Monoxide (CO)	550	550
Source: South Coast Air Quality Management District, SCAQMD 2008.		

Impact Analysis

Short-term impacts refer to emissions generated during construction because they occur on a short-term basis. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from onsite and offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, VOC, PM_{10}, and $PM_{2.5}$, and CO_2) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Additionally, paving operations and application will release VOC emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

Although the project construction will extend into 2010 and 2011, the 2009 model year has the most conservative emission factors and, therefore, has higher emissions estimates than the later model years. In addition, it should be noted that the worst-case day scenario used for emissions modeling assumes that all construction equipment for all phases will be utilized on the same day and for the maximum duration. Therefore, this analysis is highly conservative. Table 3.1-10 summarizes the construction-related emissions for 2009. As described in Appendix B, site preparation emissions are incorporated into the excavation and shoring phase.

The information shown in Table 3.1-10 indicates that the SCAQMD regional emission thresholds would be exceeded for NO_x emissions. The single largest source of NO_x is the excavation and shoring phase. Specifically, the off-road diesel activities for excavation and shoring would contribute 75.21 lbs per day. Therefore, without mitigation, the short-term emissions are considered to have a potentially significant regional impact.

Table 3.1-10: Construction Emissions (2009)

Phase	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Paving	0.50	2.86	2.03	—	0.25	0.23
Jacking (Hauling)	0.18	2.46	0.94	—	0.11	0.10
HDD (Hauling)	0.39	5.13	1.97	0.01	0.24	0.20
Materials Hauling	1.16	15.39	5.90	0.02	9.93	5.51
Excavation and Shoring	15.56	83.27	44.74	0.01	9.89	5.47
Pipe Installation and Backfill	3.31	24.33	13.24	—	1.35	1.23
Maximum Daily Emissions	21.10	133.44	68.82	0.04	12.55	7.84
Significance Threshold	75	100	550	150	150	55
Significant Impact?	No	**Yes**	No	No	No	No

Table 3.1-10 (cont.): Construction Emissions (2009)

Phase	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$

Note:
The analysis assumes all construction equipment for all phases of construction will be fully utilized on the same day.
VOC = volatile organic compounds NO_x = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
Source: MBA 2009, URBEMIS2007.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AQ-3a During project construction, construction equipment will be properly maintained at an offsite location; maintenance shall include proper tuning and timing of engines. Equipment maintenance records and data sheets of equipment design specifications shall be kept at that location.

MM AQ-3b In addition to the requirements of MM AQ-2b, LADWP shall incorporate into the Construction Emission Reduction Plan (Plan) a demonstration that the maximum daily activity that would occur for the project in the region (a summation of all construction site emissions) would not exceed the SCAQMD's regional NO_x threshold of 100 lbs/day. Below is a menu of specific measures that may be included in the Plan to reduce total daily NO_x emissions. The measures may be used singly or together to reduce the NO_x impact to less than significant:

- All construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1) unless LADWP determines that such engine is not available or feasible for a particular type of equipment. In the event a Tier 2 engine in not available for any off-road engine larger than 50 hp, that engine shall be a Tier 1 engine, if available and feasible. In the event a Tier I engine is not available for any off-road engine larger than 50 hp, then that engine shall be a 1996 or newer engine. The LADWP may grant relief from this requirement for that engine if compliance with this requirement is infeasible.
- To the extent that equipment and technology is available and cost-effective, the LADWP is encouraged to use NO_X catalyst, and retrofit existing engines in construction equipment. This measure applies to all construction equipment, including portable diesel powered equipment holding a valid permit with the

SCAQMD or ARB. As to assist the construction manager in identifying engines that implement this measure, equipment that implements the measure shall have clearly visible tags.

- To the extent feasible, utilize alternative fueled equipment instead of diesel-powered equipment. If biodiesel is selected as an alternative fuel, the construction manager shall ensure that appropriate NO_x reduction additives are utilized, as biodiesel alone would increase NO_x emissions.
- During project construction, onsite electrical hook ups shall be provided to utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators. To the extent that equipment and technology is available and cost-effective, the LADWP is encouraged to use electrically driven equipment instead of fossil-fueled engines.
- During project construction, restrict idling of construction equipment onsite to 5 minutes or less, unless idling is necessary for equipment use.
- To the extent practicable, construction management techniques such as timing construction to occur outside the ozone season of May through October shall be employed, or equipment use shall be scheduled to limit unnecessary concurrent operation.

Level of Significance After Mitigation

Less than significant impact after mitigation incorporated.

The air quality analysis assumes 36 diesel-powered off-road equipment units running for a total of 206 hours on any one day. The mitigation measure allows flexibility for the construction manager to modify the type and use of the construction fleet, while ensuring that the mix and use of the equipment does not result in an exceedance of the SCAQMD's regional NO_x threshold.

Sensitive Receptors

Impact AQ-4	The project would not expose sensitive receptors to substantial pollutant concentrations

Threshold

The SCAQMD has also defined health risk thresholds as follows:

- Maximum Incremental Cancer Risk: 10 in 1 million at the nearest sensitive receptor or offsite worker;
- Hazard Index (project increment) 1.0 or greater.

Cancer risk represents the probability (in terms of risk per million individuals) that an individual will contract cancer because of exposure to toxic air contaminants (TAC) continuously over a period of 70 years. Thus, an individual located in an area with a cancer risk of one will experience a one chance in one million of contracting cancer over a 70-year period assuming that individual lives in that area continuously for the entire 70-year period or works in the area for a 40-year period.

Impact Analysis

Construction activities would also involve the use of diesel-powered construction equipment, which emit Diesel Particulate Matter (DPM). Risk assessments for residential areas exposed to TACs are generally based on a 70-year period of exposure. Construction emissions were modeled under 2009 conditions to provide a worst-case scenario. Since the use of construction equipment would a) be temporary and would not be close to the 70-year timeframe, and b) not occur in a single location, but be spread out geographically, exposure of sensitive receptors to TACs would not be substantial. Emissions of DPM would not be substantial enough to be considered a significant health risk. Therefore, health risks from construction-related DPM would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required

Level of Significance After Mitigation

Less than significant impact.

Odors

Impact AQ-5	**The project would not create objectionable odors affecting a substantial number of people.**

Threshold

A project may be considered to have a significant impact if it creates and odor nuisance pursuant to SCAQMD Rule 402 (Nuisance). Rule 402 states:

> A person shall not discharge 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, or which cause, or have a natural tendency to cause, injury or damage to business or property.
>
> The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

Impact Analysis

The proposed project does not contain land uses typically associated with emitting objectionable odors. Diesel exhaust and ROG would be emitted during construction-type activities of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and, therefore, should not be at a level to induce a negative response.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required

Level of Significance After Mitigation

Less than significant impact.

3.2 - Cultural Resources

This section describes cultural resources and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Paleontological Resources Inventory Report prepared in March 2009 by ArchaeoPaelo Resource Management Inc, as well as the Phase I Cultural Resources Assessment for the Harbor Refineries Recycled Water Pipeline Project City of Carson and City of Los Angeles, Los Angeles County, California. Both reports are included in Appendix C, Cultural Resources.

3.2.1 - Environmental Setting

The following discussion provides a description of the environmental setting for the project site, as it relates to paleontological, cultural, and historic resources.

Paleontological Setting

Topographically, the project area is located within the current Los Angeles Basin, an originally deep but now mainly marine-sediment-filled, relatively flat, wedge-shaped, basin between the Transverse and Peninsular Mountain Ranges. The eastern edge of the basin is defined by the Repetto Hills, western Puente Hills and the Santa Ana Mountains and their western foothill; the western edge, by the Santa Monica Bay, the Pacific Ocean and the Palos Verdes Peninsula; the north edge, by the Santa Monica Mountains; and the southern edge, by San Pedro Bay, Pacific Ocean, and the San Joaquin Hills, an uplifted area whose exposed sediments indicate shallow to deep marine environments of origin reflecting a past continuation with the now restricted basin. The part of the Los Angeles Basin that lies west of the Newport-Inglewood-Rose Canyon fault zone is considered to be part of the Inner Continental Borderland geomorphic province, while the part east of that fault zone is considered part of the Peninsular Ranges province, partially because of a difference in the geographic directional trend of the geological structures. Specifically, the Project's Area of Potential Effect (APE) is generally confined to the earthwork disturbance area within the street right-of-way (ROW) of the proposed pipeline alignment, which stretches across part of the western side of the basin, that is, the southern part of the Dominguez Channel watershed. The Dominguez Channel watershed is defined on the southwest by the Palos Verdes Peninsula, on the west by the raised sand dunes of El Segundo, Manhattan Beach, Hermosa Beach and Redondo Beach, on the east and northeast by the series of hills (the Baldwin Hills, the Dominguez Hills, etc.) marking the Newport-Inglewood fault zone in that area and to the south, by the Los Angeles Harbor. Since the Project lies west of the Newport-Inglewood fault zone, it is considered to be within the Inner Continental Borderland province.

Prehistoric Cultural Background

The following discussion provides a background to each of the established time periods by which human activity in Southern California is commonly described, in sequential order. A more detailed description of the cultural background is provided in Appendix C, Cultural Resources, in this Draft EIR.

Early Period (before 6000 B.C.)

Beginning with the first human presence in California, prehistoric artifacts and cultural activities appear to represent a big-game hunting tradition. Of the Early Period sites that have been excavated and dated, most exhibit a refuse assemblage suggesting short-term occupation. Such sites have been detected in caves and around fluvial lakes fed by streams that existed near the end of the last glaciation. Chipped stone tools at these sites are surmised to reflect a specialized tool kit used by hunters. Large-stemmed bifaces are common.

Millingstone Period (6000 to 3000 B.C.)

The onset of the Millingstone Period appears to correspond with an interval of warm and dry weather known as the Altithermal. Artifact assemblages begin to reflect an emphasis on plant foods and foraging subsistence systems, as evidenced by the grinding tools found at these sites, and including choppers and scraper planes. Notably, there is a reduced number of large bifaces in the excavated assemblages. Sites are occupied for a greater duration than Early Period sites, based on an increase in occupational debris. The regional distribution of Millingstone sites reflects the theory that aboriginal groups may have followed a modified central-based wandering settlement pattern. Under this model, large groups would have occupied a base camp for a portion of the year, with smaller bands occupying subsidiary camps in order to exploit resources not generally available near the base camp. Sedentism apparently increased in areas possessing an abundance of resources that were available for longer periods. Flaked lithic tools are slightly larger and cruder than in later periods, and cogstones begin to appear.

Intermediate Period (3000 B.C. to A.D. 500)

Dating between roughly 3000 B.C. and A.D. 500, the Intermediate Period represents a slow technological transition. A higher percentage of projectile points occur and smaller chipped stone tools are used. The duration and intensity of occupation at base camps increased during this period. Generally, the Intermediate Period artifact assemblage in the Los Angeles basin is vague, including elements of the Late Prehistoric Period and Millingstone Period, such as heavy grinding implements.

Late Prehistoric Period (A.D. 500 to A.D. 1769)

Extending from about A.D. 500 to Spanish contact in A.D. 1769, the Late Prehistoric Period reflects an increased sophistication and diversity in technology. Late assemblages characteristically contain small projectile or dart points, which imply the use of the bow and arrow. In addition, assemblages include steatite bowls, asphaltum artifacts, grave goods, and elaborate shell ornaments. Use of bedrock milling stations is purported to have been widespread during this period. Increased hunting efficiency and widespread exploitation of acorns provided reliable and storable food resources. Pottery, previously traded into the area, is made locally during the latest stage of this period.

Native American Background

The project area is situated within an area that has been ethnographically mapped as the Gabrieliño traditional use area. The Gabrieliño tribal territory is mapped as extending north from Aliso Creek (in southern Orange County) to just beyond Topanga Canyon (in the now San Fernando Valley area) along the Pacific Coast, and inland to the City of San Bernardino. Their territory would have included portions of the Santa Ana River, and several islands, such as Catalina. It is likely that these tribal boundaries were fluid, and allowed for contact, trade, and diffusion of ideas between neighboring groups, such as the Juaneño to the south.

The Gabrieliño

Kroeber (1925) and Bean and Smith (1978), as cited in Appendix C, form the primary historical references for this tribal group. The arrival of Spanish explorers and the establishment of missions and outposts during the 18th century ended the prehistoric period in California. At that time, traditional Gabrieliño society began to fragment as a result of foreign diseases and the mass removal of local Indian groups to the Mission San Gabriel and Mission San Juan Capistrano.

The Gabrieliño spoke a language that belongs to the Cupan group of the Takic subfamily of the Uto-Aztecan language family (a language family that includes the Shoshonean groups of the Great Basin). The total Gabrieliño population in about A.D. 1770 was roughly 5,000 persons, based on an estimate of 100 small villages, with approximately 50 to 200 people per village. Their range is generally thought to have been located along the Pacific coast from Malibu to San Pedro Bay, south to Aliso Creek, then east to Temescal Canyon, then north to the headwaters of the San Gabriel River. Also included were several islands, including Catalina. This large area encompasses the City of Los Angeles, much of Rancho Cucamonga, Corona, Glendale, and Long Beach. By 1800, most traditional Gabrieliños had either been killed, or subjugated by the Spanish.

Located in an area of extreme environmental diversity, large villages may have been permanent, such as that found on or near Red Hill in Rancho Cucamonga, with satellite villages utilized seasonally. Their living structures were large, domed, and circular thatched rooms that may have housed multiple families. The society exhibited ranked individuals, possibly chiefs, who possessed a much higher level of economic power than unranked persons.

Historic Background

The earliest European explorers to enter the Alta California region were the Spanish who navigated along the Pacific coast during the 17th and 18th centuries. When the first European explorers set foot on Southern California soil in the 1760s, a Spanish soldier named Juan Jose Dominguez was part of the Portola expedition. In 1782, Senor Dominguez was rewarded with a retirement gift from the Spanish Governor of California with the first land grant in the state, which was 75,000 acres of land known as Rancho San Pedro. It stretched from the Los Angeles River all the way west to the Pacific

Ocean, encompassing what today would be the cities of Carson, Torrance, Redondo Beach, Lomita, Wilmington, and parts of San Pedro.

The center of this vast land hold was the Dominguez Rancho homestead, located in the modern eastern portion of Carson, known as Dominguez Hills. The Dominguez Hills area is located approximately 2.5 miles east of Carson. It is here that Juan Jose Dominguez's nephew built the historic Dominguez Ranch Adobe in 1826, which still stands as a monument to Carson's past and is open to visitors as an historical museum.

City of Carson

George and Victoria Carson moved into the Dominguez Rancho's Victorian home next to the adobe home on the Dominguez Ranch Adobe Museum site, where they lived until the beginning of the 20th century. The City of Carson is named after their son, John Manuel Carson, a key figure in the development of the South Bay in the 20th Century and the head of the Dominguez Water Corporation (City of Carson Website).

In the early 20th century, a large, open, and relatively flat area known as Dominguez Field, was on part of one of the original Spanish land grants, Rancho San Pedro (City of Carson Website). At the time it was readily accepted for the Great Air Meet, which was the first air show in the United States. More than 175,000 people had gathered at a site near the present-day location of California State University, Dominguez Hills, to see aircraft from around the world race and perform what appeared to be daring feats.

In the last years of the 19th century, and into the next, the Dominguez heirs gradually leased or sold off portions of the ranch to European immigrants and migrants from other parts of the United States, many of whom set up small farms. The post World War II years brought a frenzy of residential building, as well as an increasing number of commercial and industrial operations, and the agricultural character of the community faded. By the 1920s, oil had been discovered in the Carson area and companies such as Shell Oil were extremely active during World War II, increasing jobs in the community and lending to the subsequent post-war population surge. In the 1960s, oil company executives became influential in organizations that impeded then helped propel, efforts to win the incorporation of Carson as a City.

City of Los Angeles - Wilmington Area

The land was also originally part of the 1784 Spanish land grant of Rancho San Pedro. It was known as New San Pedro when the town was founded in September 1858. It was located at the site of a wharf, known as Banning's Landing, built by Phineas Banning. The name was changed in 1863 in honor of Wilmington, Delaware, Banning's birthplace. The post office, which opened in 1864, was the second in Los Angeles County.

In 1864, Phineas Banning built a Greek Revival style home for himself and his family in Wilmington, California. The location of this residence is within 0.25 mile of the pipeline route and is now a museum listed in the National Register of Historic Places.

The first railroad in Southern California was built in 1869, and ran from Banning's Landing up to the City of Los Angeles. Following the choice of San Pedro as the official location for the Port of Los Angeles in the 1890s, the town continued to grow with increased federal spending in the area. The city was annexed by the City of Los Angeles in 1909.

The Drum Barracks, a US Military Headquarters from the Civil War, in Wilmington was established in 1862 and is now the last remaining original Civil War facility in the Los Angeles area. It was named after Adjutant General Richard Coulter Drum, and originally designated Camp Drum. In addition to housing the Army during the Civil War, it also served as a supply and main training base for the southwest throughout the 1860s. The remaining wooden frame structure has been designated a California Historic Landmark and is listed on the National Register of Historic Places. It is located 0.25 miles east of Avalon Boulevard, between Dennis and Opps Streets.

3.2.2 - Regulatory Framework

The principal State regulations relating to preserving historic and archaeological properties are Public Resources Code Section (§) 5020, et seq; California Environmental Quality Act (CEQA) § 21083.2 and 21084.1; and CEQA Guidelines § 15064.5.

For purposes of CEQA, "historical resources" include: a resource listed in, or determined eligible for listing in, the California Register of Historical Resources; a resource included in a local register of historical resources adopted pursuant to a local ordinance or resolution, or included in a historical resource survey, meeting the requirements of California Public Resource Code § 5024.1 (g); or any resource that the lead agency deems to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

Sites are evaluated in accordance with § 15064.5 (a)(2)-(3) of CEQA Guidelines, using the criteria outlined in § 5024.1 of the California Public Resource Code. Under this section, an important historical property is one which (1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (2) is associated with the lives of persons important in our past; or (3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic value; or (4) has yielded, or may likely yield, information important in prehistory or history. Such Properties are considered eligible to the State Register of Historical Resources.

Under § 21083.2, a "unique" archaeological resource is an object, artifact, or site that can be clearly shown to contain (1) information needed to answer important scientific research questions and that

there is a demonstrable public interest in that information; or (2) has a special and particular quality such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historic even or person. Criterion 4 deals with the potential for a resource to contain additional scientific information.

Typically, historic-era properties are evaluated under criteria 1 through 3; while prehistoric properties are evaluated under Criterion 4 only. Guidelines for CEQA require identification of project effects on cultural resources (historic-era and prehistoric archaeological sites, buildings, and traditional cultural properties) that are determined to be legally important. Such resources are defined by CEQA as those eligible for listing in the California Register of Historical Resources using Criteria for Evaluating the Significance of Historical Resources (Assembly Bill [AB] 2881, signed into law on September 27, 1992). The project policy will be to avoid impacts to cultural resources whenever possible. Where avoidance is not feasible, further investigations may be needed. If buried cultural materials are encountered during construction, work will be required to stop in that area until a qualified archaeologist can evaluate the nature and significance of the find.

Human remains are considered under CEQA Guidelines for cultural resources. These remains may consist of historic-period burials or cemeteries and Native American remains that occur as isolated features or in archaeological site contexts. Native American-sanctified cemeteries, places of worship, ceremonial and religious sites, or sacred shrines situated on public property must be protected from vandalism and damage under Public Resource Code 5097.9.

Procedures for the treatment and protection of Native American remains are outlined in Public Resource Code 5097.98, as follows: notify county coroner to examine the remains; if coroner determines the remains are Native American, notify the Native American Heritage Commission; Commission notifies the Most Likely Descendant, who will recommend the proper treatment and handling of the remains and any associated grave offerings. In addition, California State Health and Safety Code 7050.5 has established protocol to be used upon the discovery of human remains, and requires that appropriately designated, local Native Americans be included in both the treatment and reburial of the human remain and any associated artifices.

3.2.3 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to cultural resources are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a.) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b.) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c.) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d.) Disturb any human remains, including those interred outside of formal cemeteries?

3.2.4 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Historic Resource

Impact CR-1	**The project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.**

Impact Analysis

A records search conducted pursuant to the project-specific Phase I Cultural Resources Assessment determined that 53 Historic Resources Inventory (HRI) designated historic-age properties are located within 0.25 mile of the pipeline route, including one National Register of Historic Places (NRHP) structure located approximately 0.25 mile from the alignment. Only two of the historic structures are on the National Register and none of the others are considered eligible. The structures identified as historic-age resources are more fully described in Appendix C. The HRI maintained by California State Office of Historic Preservation (OHP) includes only information on historical resources that have been identified and evaluated through one of the programs that OHP administers under the National Historic Preservation Act or the California Public Resources Code. The HRI includes data on:

- Resources evaluated in local government historical resource surveys partially funded through certified Local Government grants or in surveys which local governments have submitted for inclusion in the statewide inventory.
- Resources evaluated and determinations of eligibility (DOEs) made in compliance with Section 106 of the National Historic Preservation Act.
- Resources evaluated for federal tax credit certifications.
- Resources considered for listing in the National and California Registers or as California State Landmarks or Points of Historical Interest.

Also, a large number of historic age structures in addition to the HRI-designated properties occur along the project alignment. These resources have not been evaluated. In addition to above-ground structures, the potential exists that historic-age resources will occur below the ground surface. These resources could consist of trash pits for activities before streets were placed in the area, old building foundations, early utilities, etc.

The proposed project would construct an underground pipeline within the existing public ROW for streets, and would not require any above-ground structures and therefore would not directly affect historic structures located adjacent to the alignment.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Archaeological Resource

Impact CR-2	**The project would cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.**

Impact Analysis

The results of a survey for archeological resources conducted pursuant to the project-specific Phase I Cultural Resources Assessment determined that 29 cultural resources are known for the half-mile of the project area (a detailed description of the cultural resources is in Appendix C). Of these, seven are prehistoric archaeological, ten are historic age archaeological, three are undescribed sites, and one is a multi-component site. One of the prehistoric age resources, the Suangna Indian Village, is a California Place of Historic Interest, and it is located less than 0.25 mile from the project area, east of Avalon Boulevard, between 223rd Street and Lomita Boulevard. The Village is designated in the Watson Industrial Center in Carson, with a bronze plaque near the southeast corner of 230th Street and Utility Way, next to the Pioneer building. 230th Street is a short, one-mile long, L-shaped street that runs between Sepulveda Boulevard on the south and Wilmington Avenue on the east. The marker is on the south side of 230th Street, just east of Utility Way, about a quarter-mile west of Wilmington Avenue. The marker was erected by the Carson Indian Historical Committee and Watson Industrial Properties, and this plaque is known as Los Angeles Historical marker No. 13. This plaque commemorates the discovery of relics from the city's history that began long before the arrival of the Spanish and other European explorers of the Southern California coastline.

The Suangna Indian Village site consisting of burials, shell midden, stone pipes, and other material cultural items, and was first recorded in 1939. The site is located approximately 0.25 mile to the east of Avalon Boulevard on the pipeline route. The exact boundaries of the site are undefined with at least three loci plotted on the map. One of the loci is located west of Avalon Boulevard. As a result, there is potential that portions of the site may be present beneath the streets constituting the project alignment. Another series of sites recorded in the 1950s and 1960s occurs along the Anaheim Street

portion of the pipeline route, within the southern portions of Harbor Regional Park. The exact boundaries of the sites are not known because the sites records do not have many details.

The potential for impacts to significant cultural resources is considered high within certain portions of the project area, due to the presence of previously recorded resources within the immediate vicinity of the project area. Areas of high potential for subsurface prehistoric resources include the area along Avalon Boulevard between Carson Street and Sepulveda Boulevard and the area along Anaheim Street between the Harbor Freeway and Vermont Avenue (Exhibit 3.2-1). Both of these areas have a high concentration of prehistoric sites with no surface visibility. During construction activities, there is a high probability that intact subsurface deposits could be uncovered, though any of these resources could have been significantly damaged by previous construction activities. This potential is high within undisturbed or minimally disturbed portions of the project area and significantly lower in areas that have been subject to extensive historic-utility construction. Because of the likeliness that intact subsurface prehistoric cultural deposits could be encountered during construction, impacts related to this issue would be potentially significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CR-2 A cultural resources discovery plan shall be prepared and implemented prior to the start of construction. The discovery plan will consist of the following components:

1. The Contractor/Construction Manager shall ensure that a cultural and paleontological discovery plan and training program shall be implemented prior to the start of construction. The discovery plans will outline procedures for identification and treatment of either cultural resources or paleontological resources found along the routes during construction. The training program will be prepared by a trained archaeologist and paleontologist and shall consist of a brief PowerPoint presentation (or other approved presentation method) for all construction personnel. The emphasis of the training is to educate all construction personnel on the potential archaeological and paleontological resources that could be found on the project during excavation and the proper procedures for dealing with resources if encountered. Should resources be identified during construction, work shall cease in the immediate area (within 100 feet) and a qualified archaeologist shall be notified to determine if the resource is significant. Work shall not continue until the qualified archaeologist makes a determination. If a significant resource is encountered, the steps outlined in the archaeological discovery plan shall be followed.

2. Prior to the commencement of construction activities, a qualified archaeologist shall review all construction plans to determine the amount of subsurface disturbance in the construction right of way. This shall be accomplished through a review of existing drawings of utilities currently in place, referenced against the location of the new recycled water pipeline. If no drawings are available, the qualified archaeologist shall make assessments during construction "potholing" activities to determine if undisturbed cultural resources are present or potentially present.

3. If it is determined that intact soils are present along portions of the route with a high potential for buried archaeological resources as shown in Exhibit 3.2-1, as identified through MM CR-2.b, a qualified archaeologist shall be present for excavation activities in those specific areas. If significant resources are encountered, the procedures outlined in the archaeological discovery plan shall be followed, before construction can continue. If no significant resources are encountered after 25 percent of one of the high potential areas has been excavated, the project archaeologist can reduce or eliminate archaeological monitoring at the location.

Level of Significance After Mitigation

Less than significant.

Paleontological Resource or Geologic Feature

Impact CR-3	**The project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.**

Impact Analysis

Paleontological resources include vertebrate, invertebrate, and plant fossil remains, as well as the specimen and geologic site data that may be associated with the remains. A literature review/records search conducted pursuant to the project-specific Paleontological Resources Inventory Report identified that paleontological resources had previously been encountered in several locations within the project vicinity. Each of these resources is summarized below, a more detailed description of these resources is provided in Appendix C, Cultural Resources.

Close to the terminus of the southern sub-branch of the LADWP proposed pipeline around Harbor Park and Golf Course, at or near the intersection of Anaheim Street and Vermont Avenue/Gaffey Street), a fossil bird (class Aves) was found (site LACM 1809). Nearby, vertebrate fossils, including fossil horse (genus *Equus*) and bison (genus *Bison*) as well as invertebrate fossils were discovered (site LACM 1158). Both these sites were within Palos Verdes Sand deposits. Additionally, north of this terminus, also within the Palos Verdes Sand deposits, a specimen of the extinct flightless goose *Chendytes lawi* was recovered (site LACM 1055).

Mammoth (*Mammuthus*) and horse fossil specimens were located within Palos Verdes Sand deposits south of this terminus a little further along Gaffey Street (sites LACM 3268 and 4205).

Directly north of the park and golf course area near the intersection of 253rd Street and Petroleum Avenue in Harbor City, within a well core from unstated depth were found specimens of the fossil lampfish and herring. The marine nature of the specimens indicated San Pedro Sand deposits at that unspecified depth (site LACM (CIT) 363).

On the far eastern project alignment, near the Air Products plant and near the intersection of Anaheim Street and North Henry Ford Avenue, a fossil bison specimen was previously found (site LACM 1163).

An assessment of the rock unit underlying portions of the project alignment identified that older strata underlying portions of the project present a high potential for the recovery of paleontological resources. Because paleontological resources had been previously discovered in the project vicinity, and because certain project area soils have the potential to contain such resources, construction-related earth-moving activities associated with the proposed project may impact undiscovered paleontological resources. Therefore, potentially significant impacts to paleontological resources could result from construction activities.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CR-3a Prior to the start of construction, a qualified paleontologist shall review all construction plans to determine the amount of subsurface disturbance in the construction right of way. This shall be accomplished through a review of existing drawings of utilities currently in place, referenced against the location of the new recycled water pipeline. If no drawings are available, the qualified paleontologist shall make assessments during construction "potholing" activities to determine if undisturbed cultural resources are present or potentially present.

4. **MM CR-3b** If it is determined by the paleontologist that suitable intact soils are present along portions of the route with a high potential for buried paleontological resources as shown in Exhibit 3.2-1, as identified in MM CR3a, a qualified paleontologist shall be present for excavation activities in those specific areas. If significant resources are encountered, the procedures outlined in the discovery plan (MM CR2.a) shall be followed, before construction can continue. If no significant resources are encountered after 25 percent of one of the high potential areas has been excavated, the project paleontologist can reduce or eliminate monitoring at the location.

MM CR-3c In the case that fossil remains are encountered, all recovered fossil remains shall be prepared to the point of identification and to the lowest taxonomic level possible. The remains shall be curated, catalogued, and the corresponding geologic and geographic site data archived and all items transferred to the appropriate museum repository, preferably to the Los Angeles County Natural History Museum.

Level of Significance After Mitigation

Less than significant.

Human Remains

Impact CR-4	**The project would not disturb any human remains, including those interred outside of formal cemeteries.**

Impact Analysis

There is always the small possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. Should this occur, Federal laws and standards apply including Native American Graves Protection and Repatriation Act (NAGPRA) and its regulations found in the Code of Federal Regulations at 43 CFR 10.

In the event of an accidental discovery or recognition of any human remains, California State Health and Safety Code § 7050.5 dictates that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to CEQA regulations and Public Resource Code (PRC) § 5097.98.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

3.3 - Hazards and Hazardous Materials

3.3.1 - Introduction

This section describes hazards and hazardous materials, and potential effects from project implementation on the site and surrounding area.

3.3.2 - Environmental Setting

A material is considered to be hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. Factors that influence the health effects of exposure to hazardous material include the dose to which the person is exposed, the frequency of exposure, the exposure pathway, and individual susceptibility.

The California Code of Regulations (CCR) defines a hazardous material as a substance that, because of physical or chemical properties, quantity, concentration, or other characteristics, may either 1) cause an increase in mortality or an increase in serious, irreversible, or incapacitating, illness; or 2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of, or otherwise managed (CCR, Title 22, Division 4.5, Chapter 10, Article 2, Section 66260.10).

Hazardous wastes are defined in the same manner. Hazardous wastes are hazardous materials that no longer have practical use, such as substances that have been discarded, discharged, spilled, contaminated, or are being stored prior to proper disposal. Hazardous materials and hazardous wastes are classified according to four properties: toxic, ignitable, corrosive, and reactive (CCR, Title 22, Chapter 11, Article 3). Toxicity, ignitability, corrosivity, and reactivity are defined in the CCR, Title 22, Sections 66261.20-66261.24.

3.3.3 - Regulatory Framework

Federal

Federal regulatory agencies include the Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), the Department of Transportation (DOT) and the National Institute of Health (NIH). The following represents some of the federal laws and guidelines governing hazardous substances.

- Federal Water Pollution Control Act (Clean Water Act, CWA) (33 USC Section 1251, et seq./40 Code of Federal Regulations [CFR])
- Clean Air Act (CAA) (42 US Code Section 7401, et seq./40 CFR)
- Occupational Safety and Health Act (29 US Code Sections 651, et seq./29 CFR)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 US Code Section 136, et seq./40 CFR)

- Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (42 US Code Section 9601, et seq./29, 40 CFR)
- Guidelines for Carcinogens and Biohazards
- Superfund Amendments and Reauthorization Act Title III (42 USC Section 11001, et seq./29, 40 CFR)
- Resource Conservation and Recovery Act (RCRA) (42 US Code Section 6901, et seq./40 CFR)
- Safe Drinking Water Act(42 US Code Section 300f, et seq./40 CFR)
- Toxic Substances Control Act (15 US Code Section 2601, et seq./40 CFR)
- Hazardous Materials Transportation Act (49 U.S.C. 1801, et seq.) and regulations issued under that Act by the DOT
- Oil Pollution Act (33 US Code Section Sections 2701-2761/30, 33, 40, 46, 49 CFR)
- Pollution Prevention Act (42 US Code Section 13101, et seq/40 CFR)

Federally, the principal agency regulating the generation, transport, and disposal of hazardous substances is the EPA, under the authority of RCRA. The EPA regulates hazardous substance sites under CERCLA. Applicable federal regulations are contained primarily in Titles 29, 40, and 49 of the CFR.

Hazardous Substances Worker Safety Requirements

The Federal Occupational Safety and Health Administration (Fed/OSHA) is the agency responsible for ensuring worker safety. Fed/OSHA sets federal standards for implementation of training in the work place, exposure limits, and safety procedures in the handling of hazardous substances, as well as other hazards. Fed/OSHA also establishes criteria by which each state can implement its own health and safety program.

Hazardous Materials Transportation

The U.S. DOT regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This Act specifies driver training requirements, load labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA.

Hazardous Substances Handling Requirements

RCRA established a federal hazardous substance "cradle-to-grave" regulatory program that is administered by the EPA. Under RCRA, the EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances.

RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle-to-grave" system of regulating hazardous substances. The HSWA specifically prohibits the use of certain techniques for the disposal of certain hazardous substances.

Asbestos

The EPA has declared asbestos to be a hazardous air pollutant under the CAA and has issued National Emissions Standard for Hazardous Air Pollutants (NESHAP) that regulates the demolition and renovation of facilities containing asbestos. In California, most of the State's air districts are delegated by EPA to implement the federal NESHAP requirements. The California Air Resources Board enforces the NESHAP in air districts not delegated by EPA. The NESHAP imposes procedures for demolition and renovation activities involving regulated asbestos containing materials. The NESHAP also imposes additional restrictions on asbestos waste disposal.

State

Statewide, the California Department of Health Services - Toxic Substances Control Division (DTSC) regulates the generation, handling, storage, disposal, and transportation of hazardous waste, oversees the remediation of contaminated sites, and seeks to reduce the hazardous waste produced in California. While DTSC activities primarily focus upon commercial and industrial operations, DTSC also oversees waste evaluation programs and assists in waste determinations to identify what substances and what concentrations are harmful. The California Hazardous Substances Control Law establishes regulations and incentives, which ensure that the generators of hazardous waste employ technology and management practices for the safe handling, treatment, recycling, and destruction of hazardous wastes prior to disposal.

The State Hazardous Material Management Act (HMMA) requires that any business that handles hazardous material in excess of specified threshold quantities (500 pounds of solid material, 55 gallons of liquids, or 200-cubic feet of compressed gas) prepare a business plan that includes an inventory of stored hazardous materials. The plan must also include a map showing the location of hazardous materials, and must contain a training program for employees in handling hazardous materials.

Local

The Carson General Plan Safety Element contains the following policies to address issues related to hazardous materials:

SAF-4.1: Strictly enforce federal, State and local laws and regulations relating to the use, storage, and transportation of toxic, explosive, and other hazardous and extremely hazardous materials to prevent unauthorized discharges.

SAF-4.4: Explore the possibility of identifying specific routes for the transport of hazardous materials, to include both railroad and street systems.

SAF-4.5: As truck routes within the City are altered, inform Caltrans and transporters of hazardous materials of the changes.

The City of Los Angeles General Plan Safety Element contains the following policies to address issues related to hazardous materials:

1.1-4: Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect City water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation.

3.1-2: Health/safety/environment. Develop and establish procedures for identification and abatement of physical and health hazards, which may result from a disaster. Provisions shall include measures for protecting workers, the public, and the environment from contamination or other health and safety hazards associated with abatement, repair and reconstruction programs.

3.3.4 - Thresholds of Significance

According to CEQA Guidelines' Appendix G Environmental Checklist, to determine whether hazards and hazardous materials impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

a.) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b.) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c.) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d.) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e.) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f.) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g.) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h.) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

3.3.5 - Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Routine Use

Impact HAZ-1	**The project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.**

Impact Analysis

Construction activities may involve limited transport, storage, use, or disposal of hazardous materials, such as the use of petroleum products for fueling/servicing of construction equipment. This activity would occur in the short-term for brief periods during the construction of the proposed project. This short-term construction activity will be required to comply with federal, State, and local health and safety requirements. The use of hazardous materials during construction would cease upon project completion and all such hazardous materials would be removed from the project site and disposed of pursuant to applicable federal, State, and local regulations. Because the construction activities are required to comply with the applicable regulations and laws pertaining to the transport, storage, and disposal of potentially hazardous materials associated with the project, impacts associated with these hazardous materials from construction activities would be less than significant.

During project construction, contaminated soils are anticipated to be encountered within the project alignment, requiring offsite disposal. The disposal of contaminated soils would occur within an approved hazardous waste disposal facility, and would be required to comply with all applicable federal, State, and local regulations regarding the disposal of contaminated soil. Accordingly, compliance with all applicable regulations would ensure that impacts associated with contaminated soil disposal would be less than significant.

The operation of the pipeline would involve the conveyance of treated recycled water to customers through the pipeline which is below the ground surface. No hazardous waste would be associated with the operation of the pipeline, and no impacts related to hazardous waste would occur during operational activities.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Accident Conditions

Impact HAZ-2	**The project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.**

Impact Analysis

As discussed in the impact analysis for Impact HAZ-1 above, the construction of the proposed project would involve the routine short-term use of hazardous materials on the project site during construction activities. Additionally, the need to export contaminated soil originating from excavated portions of the project alignment to an approved hazardous waste facility is anticipated. Though unlikely, during the transport and use of hazardous materials, an accidental release of these materials could occur. However, the probability of such an occurrence would be low. Additionally, the concentrations of the hazardous materials would not present an unusual risk to the public or the environment. The low probability of an upset or accident condition resulting in the release of hazardous materials into the environment coupled with the mandatory compliance with all applicable federal, State, and local regulations would ensure that impacts related to this issue during construction would be less than significant.

Due to the location of the project alignment in an area where petroleum extraction and processing activities occur, or have historically occurred, soils contaminated with petroleum and other related contaminates are expected to occur. As a result, the project proposes, as a component of the project description, to haul contaminated soils to an approved hazardous waste disposal facility using diesel trucks. Although unlikely, it is reasonably foreseeable that through accident or upset conditions a spillage of contaminated soils could occur associated with the hauling of the soils to the facility. However, such a spillage of contaminated soils poses a very limited risk to the environment, and the clean up and disposal of spilled soils in compliance with applicable federal, State, and local regulations would ensure that the associated impact of this unlikely occurrence would be less than significant.

Based on information contained in a comment letter received from the County of Los Angeles Department of Public Works (contained in Appendix A2) regarding the Initial Study/Notice of Preparation for the proposed project, the project site is located on, or within 1,000 feet of the former Gardena Valley Landfill. Due to this proximity, potential exists that the pipeline would be exposed to subsurface migration of landfill gas. However, because the proposed project does not include any enclosed structures, and because the pipeline would be wrapped in a polyethylene sleeve and backfilled with slurry, the pipeline would be fully encased and protected against any potential exposure to landfill gas. Therefore, impacts associated with landfill gas would be less than significant.

During excavation, activities would take place in areas where existing utility pipelines occur, including those transporting natural gas. In the unlikely event that such a pipeline is ruptured by excavation activities, a leakage of natural gas could occur. However, extensive exploratory "potholing" would be conducted throughout the alignment and coordination with other utility providers would occur prior to excavation activities to ensure that pipelines are identified and avoided. Additionally, the placement of the proposed pipeline within each existing right of way will take into account the existence of underground utilities and would avoid construction near such improvements to the extent feasible. As such, no significant impacts would occur related to this issue would occur.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Schools

Impact HAZ-3	**The project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.**

Impact Analysis

The project would construct a pipeline along an 11.4 mile alignment beneath public roadways adjacent to several schools, and within 0.25 miles of a total of 17 existing schools, each identified below in Table 3.3-1.

Table 3.3-1: Nearby School Locations

School Name	School Street and City Location	Approximate Distance from Project Site
Del Amo Elementary School	21228 Water Street, Carson	0.10 mile
Carson Montessori Academy	812 East Carson Street, Carson	0.01 mile
Carnegie Middle School	21820 Bonita Street, Carson	0.15 mile
Bonita Street Elementary School	21929 Bonita Street, Carson	0.22 mile
Carson Christian School	21828 Avalon Boulevard, Carson	0.03 mile
Broad Avenue Elementary School	24815 Broad Avenue, Wilmington	0.10 mile

Table 3.3-1 (cont.): Nearby School Locations

School Name	School Street and City Location	Approximate Distance from Project Site
Wilmington Christian School	24910 South Avalon Boulevard., Wilmington	0.01 mile
Small World Learning Center	1749 North Avalon Boulevard, Wilmington	0.01 mile
Avalon High School	1425 North Avalon Boulevard, Wilmington	0.01 mile
Fries Avenue Elementary School	1301 North Fries Avenue, Wilmington	0.14 mile
First Baptist Christian School	1360 Broad Avenue, Wilmington	0.14 mile
Happy Harbor Preschool	1530 North Wilmington Boulevard, Wilmington	0.20 mile
Pacific Harbor Elementary School	1551 North Wilmington Boulevard, Wilmington	0.24 mile
Wilmington Park Early Education Center	1419 East Young Street, Wilmington	0.05 mile
Wilmington Park Elementary	1140 Mahar Avenue, Wilmington	0.00 mile
Vermont Christian School	931 Frigate Avenue, Wilmington	0.10 mile
Holy Family Grammar School	1122 East Robidoux Street, Wilmington	0.04 mile
Source: Michael Brandman Associates, 2009.		

As discussed in Impact HAZ-1 and Impact HAZ-2, hazardous materials would be used during construction of the proposed project, and contaminated soils where detected would be removed from the site for disposal at an offsite facility. Although these activities would occur within one-quarter mile of existing schools, the probability of the release of hazardous materials during construction is low, and the concentrations of the hazardous materials would not present an unusual risk to nearby schools. Additionally, compliance with mandatory federal, State, and local regulations would ensure that impacts to nearby schools related to this issue would be less than significant during construction.

During operation of the project, the pipeline would convey recycled water below the ground surface. As discussed above in Impact HAZ-2, the recycled water is not regarded as a hazardous material. Therefore, impacts associated with the long term operation of the pipeline near schools would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Hazardous Materials Site Listing

Impact HAZ-4	**The project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would not create a significant hazard to the public or the environment.**

Impact Analysis

A review of the sites in the project vicinity which are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 determined that no portion of the proposed pipeline project would occur on a site identified as a hazardous materials site. As discussed previously, due to the location of the project alignment in an area where petroleum extraction and processing activities occur, or have historically occurred, soils contaminated with petroleum and other related contaminants are expected to occur. As a result, the project proposes, as a component of the project description, to haul contaminated soils to an approved hazardous waste disposal facility using diesel trucks. The project also proposes to backfill the excavated trenches associated with pipeline construction with slurry and the new pipeline will be wrapped with a polyethylene sleeve. These two barriers will fully encase the pipeline and protect it from future contact with contaminated soils, which would avoid issues of contaminated soils affecting the proposed pipeline.

Portions of the proposed pipeline are located adjacent to highly industrialized developments that are known to utilize hazardous materials. However, as discussed above, backfill material would consist of slurry which would fully encase the pipeline and protect it from contact with any hazardous materials associated with nearby facilities. Additionally, the construction and operation of the proposed pipeline would be limited to the public right-of-way and would not be otherwise affected by nearby facilities associated with hazardous materials. Therefore, impacts associated with this issue would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Airports

Impact HAZ-5	**The project would not result in a safety hazard for people residing or working in the project area related to a public airport or public use airport.**

Impact Analysis

The nearest airports to the project site are Torrance Municipal Airport and Long Beach Municipal Airport, located 3.5, and 6.5 miles from the project site, respectively. The project would include the construction and operation of an underground recycled water pipeline. Pipeline would occur below the ground surface; therefore, the project would not result in a safety hazard associated with airports for people residing or working in the project area. No impacts would occur.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No impact.

Private Airstrip

Impact HAZ-6	**The project is not located within the vicinity of a private airstrip; therefore, the project would not result in a safety hazard for people residing or working in the project area.**

Impact Analysis

The proposed project is not located in the vicinity of a private airstrip; therefore, there would be no associated safety hazard related to people residing or working in the project area.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No impact.

Emergency Plans

Impact HAZ-7	**The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.**

Impact Analysis

The proposed project would construct 11.4 miles of pipeline beneath existing public streets, some of which may function as evacuation routes during an emergency. Construction of the proposed pipeline would result in temporary lane closures and limited access to residences and businesses that may cause short-term impacts to the existing evacuation routes. The lane closures would be temporary in duration and would occur within a limited segment of each roadway for any given period of

construction. Additionally, no full closures would occur during project construction and two-way traffic flow would be provided along all project roadways. As part of standard construction procedures, the LADWP and WBMWD would provide advanced notification to emergency responders including appropriate police and fire prevention departments of lane closures. Therefore, impacts related to this issue would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Wildland Fires

Impact HAZ-8	**The project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.**

Impact Analysis

The proposed pipeline is located within highly urbanized areas and is primarily surrounded by residential, commercial, and industrial developments. The proposed pipeline will be located beneath the public rights-of-way and therefore would have no risk of wildland fire. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, no impacts would occur.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No impact.

3.4 - Noise

3.4.1 - Introduction

This section describes noise and potential effects from project implementation on the site and its surrounding area. This section begins with a description of the general characteristics of noise, followed by a discussion of the applicable federal, state, and local noise regulations. A quantitative analysis of potential noise-related effects associated with the proposed Project is provided in this section. Descriptions and analysis in this section are based on information contained in the Environmental Noise Study for the Construction of the Los Angeles Department of Water and Power (LADWP) Harbor Refineries Recycled Water Pipeline Project prepared in July 2009 by Wieland Acoustics, included in this EIR as Appendix D, Noise.

Fundamentals of Sound

Noise is generally defined as unwanted sound. In its most basic form, a sound can be described by its frequency and its amplitude. As a sound wave propagates past a point in the air, it causes the air to alternate from a state of compression to a state of rarefaction. The number of times per second that the wave passes from a state of maximum compression through a period of rarefaction and back to a state of maximum compression is the frequency. The amplitude describes the maximum pressure disturbance caused by the wave, that is, the difference between the "resting" pressure in the air when no sound is present and the pressure during the state of maximum compression or rarefaction caused by the sound wave.

Frequency is expressed in cycles per second, or Hertz (Hz). One Hertz equals one cycle per second. High frequencies are sometimes more conveniently expressed in units of kilohertz (kHz) or thousands of Hertz. The extreme range of frequencies that can be heard by the healthiest human ear spans from 16 to 20 Hz on the low end to about 20,000 Hz on the high end. Frequencies are heard as the pitch or tone of sound. High frequencies produce high-pitched sounds; low frequencies produce low-pitched sounds. Very-low-frequency airborne sound of sufficient amplitude may be felt before it can be heard, and is often confused with groundborne vibration.

Noise Descriptors

Decibels

The magnitude of a sound is typically described in terms of sound pressure level (SPL), which refers to the root-mean-square (rms) pressure of a sound wave and can be measured in units called microPascals (μPa). However, expressing sound pressure levels in terms of μPa would be very cumbersome since it would require a very wide range of numbers (from 0 to approximately 20,000,000 μPa over the entire range of human hearing). For this reason, sound pressure levels are stated in terms of decibels (dB). The decibel is a logarithmic unit that describes the ratio of the actual sound pressure to a reference pressure (20 μPa is the standard reference pressure level for acoustical

measurements in air). Since decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means.

A-Weighting

While sound pressure level defines the amplitude of a sound, this alone is not a reliable indicator of loudness. Human perception of loudness depends on the characteristics of the human ear. In particular, the frequency or pitch of a sound has a substantial effect on how humans will respond. Human hearing is limited not only to the range of audible frequencies, but also in the way it perceives sound pressure levels in that range. In general, the healthy human ear is most sensitive to sound between 1,000 Hz and 5,000 Hz, and perceives both higher and lower frequency sounds of the same magnitude as being less loud. In order to better relate noise to the frequency response of the human ear a frequency-dependent rating scale, known as the A-Scale, is used to adjust (or weight") the sound level measured by a sound level meter. The resulting sound pressure level is expressed in A-weighted decibels or dBA. When people make relative judgments of the loudness or annoyance of most ordinary everyday sounds, their judgments correlate well with the A-scale sound levels of those sounds. A range of noise levels associated with common indoor and outdoor activities is shown in Table 3.4-1 below

Table 3.4-1: Noise Compatibility for Interior and Exterior Noise

Noise Level (dBA)	Common Indoor Noise Levels	Common Outdoor Noise Levels
110	Rock Band	
100	Inside Subway Train	Jet Flyover at 1,000 feet Gas Lawn Mower at 3 feet
90	Food Blender at 3 feet	Diesel Truck at 50 feet Noisy Urban Daytime
80	Garbage Disposal at 3 feet Shouting at 3 feet	
70	Vacuum Cleaner at 10 feet	Gas Lawn Mower at 100 feet Commercial Area
60	Normal Speech at 3 feet Large Business Office	Heavy Traffic at 300 Feet
50	Dishwater next room	Quiet Urban Daytime
40	Small Theater/Conference Room (background)	Quiet Urban Nighttime Quiet Suburban Nighttime
30	Library Bedroom at Night	

Table 3.4-1: Noise Compatibility for Interior and Exterior Noise

Noise Level (dBA)	Common Indoor Noise Levels	Common Outdoor Noise Levels
20	Concert Hall (background) Broadcast & Recording Studio	Quiet Rural Nighttime
10		
0	Threshold of Hearing	
Source: City of Los Angeles General Plan - Noise Element.		

Equivalent Sound Level (L_{eq})

Many noise sources produce levels that fluctuate over time; examples include mechanical equipment that cycles on and off, or construction work which can vary sporadically. The equivalent sound level (L_{eq}) describes the average acoustic energy content of noise for an identified period of time, commonly 1 hour. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy over the duration of the exposure. For many noise sources, the L_{eq} will vary depending on the time of day; a primary example is traffic noise which rises and falls depending on the amount of traffic on a given street or freeway.

Maximum Sound Level (L_{max})

The maximum sound level refers to the maximum rms level that occurs during a noise measurement. More specifically, L_{max} is the rms sound level that corresponds to the noisiest 1-second interval during the measurement.

3.4.2 - Environmental Setting

The project occurs within a highly urbanized area, along roadways that experience a high volume of vehicular traffic. Additionally, noise sensitive residential land uses and schools are located at various points along the proposed pipeline. In order to document the existing noise environment, measurements were obtained at eight locations along the proposed pipeline route. At two of the locations, a 24-hour noise measurement was obtained. At the remaining six locations, the measurement was obtained for a period of at least 20 minutes. The measured ambient noise L_{max} levels exceed the daytime significance criterion of 75 dBA and the nighttime significance criterion of 60 dBA at every measurement location. The locations of the noise measurements are depicted in Exhibit 3.4-1, and the measurements from each location are summarized in Table 3.4-2 below.

Table 3.4-2: Summary of Noise Measurements on the Proposed Pipeline Route

Location #	Location Description	Jurisdiction	Measurement Period	Measured Noise Levels, dBA
1	Adjacent to Doubletree Hotel on East Carson Street	Carson	9:24 a.m. to 9:44 a.m.	L_{eq}: 68.6 L_{max}: 80.0
2	Adjacent to Residence at 21702 Acarus Avenue	Carson	4:24 p.m. to 4:52 p.m.	L_{eq}: 69.5 L_{max}: 80.0
3[a]	Backyard of residence at 701 East 222nd Street	Carson	Daytime (7 a.m. to 9 p.m.)	L_{eq}: 63.6 - 67.7 L_{max}: 77.6 - 94.1
			Nighttime (9p.m. to 7 a.m.)	L_{eq}: 55.0 - 64.3 L_{max}: 71.1 - 82.7
4	Adjacent to Residence at 558 East Lincoln Street	Carson	10:26 a.m. to 10:56 a.m.	L_{eq}: 66.7 L_{max}: 85.3
5	Adjacent to Crescent Inn motel, 1104 West Pacific Coast Highway	Los Angeles	4:55 p.m. to 5:15 p.m.	L_{eq}: 69.1 L_{max}: 88.5
6	Adjacent to residence at 1335 West Papeete Street	Los Angeles	2:33 p.m. to 2:53 p.m.	L_{eq}: 69.9 L_{max}: n/a
7[a]	Casa Milagro Apartments on East L Street	Los Angeles	Daytime (7 a.m. to 9 p.m.)	L_{eq}: 53.5 - 60.7 L_{max}: 67.5 - 87.9
			Nighttime (9 p.m. to 7 a.m.)	L_{eq}: 48.7 - 59.8 L_{max}: 63.1 - 86.4
8	Adjacent to residence at 1333 East Opp Street	Los Angeles	1:20 p.m. to 1:43 p.m.	L_{eq}: 59.7 L_{max}: 78.9

Notes:
[a] 24-hour measurement location. Therefore, data is reported as the range of hourly values over the entire measurement.
Source: Wieland Acoustics, 2009.

Noise generated by the proposed project would be primarily associated with the construction of the pipeline. Construction activities such as blasting, pile driving, and operation of heavy construction equipment induce ground and structure vibrations.

3.4.3 - Regulatory Framework

State

Office of Noise Control Standards

The former California Office of Noise Control has set the land use compatibility noise standards and encouraged local jurisdictions to adopt them. Noise/land use compatibility standards for various classes of land uses are generally expressed in the community's General Plan Noise Element to insure that noise exposure is considered in any development decisions.

The State of California has developed a noise and land use compatibility matrix for recommended incorporation into local general plan noise elements. The City of Los Angeles and Carson have incorporated specific components of these guidelines into their municipal codes.

Caltrans Vibration Guidance

Construction vibration is regulated in accordance with standards established by the Transportation and Construction-Induced Vibration Guidance Manual, issued by the California Department of Transportation (Caltrans).

Local

The proposed project will traverse two jurisdictions: the cities of Los Angeles and Carson. The most stringent noise standards of the two cities will be used to assess impacts throughout the study area.

Noise due to construction work is regulated by Section 41.40 of the City of Los Angeles Municipal Code. Section 41.40 prohibits the use of any "power driven drill, riveting machine, excavator or any other machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence" between the hours of 9:00 p.m. and 7:00 a.m.; it further states that "the operation, repair or servicing of construction equipment and the job-site delivering of construction materials in such areas shall be prohibited" during these hours. Section 41.40 also prohibits any construction work—including the operation, repair or servicing of construction equipment and the job-site delivering of construction materials—within 500 feet of residential buildings before 8:00 a.m. or after 6:00 p.m. on Saturday or national holidays or at any time on Sunday. However, this prohibition does not apply to major public works construction by the City of Los Angeles and its proprietary Departments, including all structures and operations necessary to regulate or direct traffic due to construction activities. Within the permitted construction times and distances, there are no noise limits. Construction noise intruding onto property zoned for manufacturing or industrial uses is exempted from the Section 41.40 standards.

Section 112.05 of the City of Los Angeles Municipal Code states that between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet. This limit applies to construction equipment, including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment. This limit shall not apply where compliance is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that the noise limit cannot be complied with despite the use of

mufflers, shields, sound barriers and/or other noise reduction devices or techniques during the operation of the equipment.

While Sections 41.40 and 112.05 of the Los Angeles Municipal Code refer only to construction impacts on residential areas, they will be also applied in this study to other noise-sensitive land uses such as hospitals and schools.

The City of Carson's noise ordinance is based primarily on the County of Los Angeles noise criteria, which are incorporated by reference, along with a number of amendments. The resulting noise ordinance provides both time restrictions and specific noise criteria for construction activities. It limits the "operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays, such that the sound there from creates a noise disturbance across a residential or commercial real-property line". The noise limits depend on the duration of the construction activities, as described in two categories:

1. Mobile Equipment, defined as "nonscheduled, intermittent, short-term operation of twenty (20) days or less for construction equipment"; and,
2. Stationary Equipment, defined as "repetitively scheduled and relatively long-term operation of twenty-one (21) days or more for construction equipment."

The City of Carson noise ordinance also requires that "all mobile or stationary internal-combustion-engine powered equipment or machinery shall be equipped with suitable exhaust and air-intake silencers in proper working order" and prohibits "creating or causing the creation of any noise disturbance within any noise-sensitive zone… provided that conspicuous signs are displayed indicating the presence of the zone… in at least three separate locations within 164 meters (one-tenth mile) of the institution or facility" where noise-sensitive zones are designated by the health officer.

Another restriction that applies to construction noise is contained in Chapter 1 of the City of Carson Municipal Code, which prohibits "the operation between the hours of 6:00 p.m. and 7:00 a.m. of any pile driver, steam shovel, pneumatic hammer, derrick, hoist or other appliance, the use of which is attended by loud or unusual noise."

3.4.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether noise impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project result in:

a.) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b.) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c.) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d.) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e.) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f.) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

3.4.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Noise Levels in Excess of Standards

Impact NOI-1	**The project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

Impact Analysis

This impact discussion analyzes the potential for project construction noise and operational noise to cause noise levels in excess of established City of Los Angeles and City of Carson noise standards. Noise levels in the project area relevant to the implementation of the proposed project would be primarily influenced by temporary construction activity in the short term. For purposes of this analysis, a potentially significant impact would occur related to noise levels in excess of standards if daytime construction activity generates maximum noise levels in excess of 75 dBA at a noise sensitive use, or nighttime construction activity generates maximum noise levels in excess of 60 dBA at a noise sensitive use. Long-term operation of the pipeline would generate only minimal noise associated with occasional maintenance activities, which would not result in significant impacts.

Implementation of the proposed project would require the short-term use of heavy equipment within the construction area, which would result in the exposure of persons to noise levels in excess of the standards established in the local noise ordinances. The noise levels estimated during construction would exceed the daytime maximum noise threshold of 75 dBA at all sensitive receptors within 211 feet of the work area. Additionally, the nighttime threshold of 60 dBA will be exceeded at all sensitive receptors within approximately 1,186 feet of the work area. As there are sensitive receptors within these distances at points along the pipeline route, a significant impact would occur.

Although potentially significant impacts are assessed for construction noise, it is noted that the existing ambient noise levels already exceed the significance criteria of 75 dBA during the daytime hours and 60 dBA during the nighttime hours at sensitive locations along the proposed pipeline route, as well as along the two alternatives routes.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-1a During all construction activities associated with the project, the construction Contractor/Construction Manager shall ensure that, unless granted a variance or an exemption from the applicable City, construction activities shall not occur between the hours of 8:00 p.m. and 7:00 am Monday through Friday, between the hours of 6:00 p.m. and 8:00 a.m. on Saturday, nor at any time on Sunday or a national holiday where a construction work area is within 500 feet of a noise-sensitive land use.

MM NOI-1b Prior to the commencement of construction activities, the Contractor/Construction Manager shall prepare a construction schedule that will ensure that construction shall be completed as rapidly as possible while minimizing potential cumulative construction noise impacts and accommodating particularly noise-sensitive periods for nearby land uses.

MM NOI-1c During all construction activities, the Contractor/Construction Manager shall ensure that the quietest construction equipment available shall be used. Where possible, electric-powered equipment shall be used rather than diesel equipment and hydraulic-powered equipment shall be used rather than pneumatic power. If compressors powered by diesel or gasoline engines are used, they shall be enclosed or have baffles to help abate noise levels.

MM NOI-1d During all construction activities, the Contractor/Construction Manager shall ensure that all construction equipment shall be properly maintained.

MM NOI-1e During all construction activities, the Contractor/Construction Manager shall ensure that all equipment shall be equipped with suitable exhaust and air-intake silencers in proper working order.

MM NOI-1f During all construction activities, the Contractor/Construction Manager shall ensure that noisy equipment shall be operated only when necessary, and shall be switched off when not in use.

MM NOI-1g During all construction activities in residential neighborhoods, the Contractor/Construction Manager shall ensure that where feasible, temporary barriers

shall be employed around noisy equipment when it is located within 500 feet of a sensitive receptor. To maximize the effectiveness of the barriers they shall break the line-of site between the equipment and the noise-sensitive receptor(s) and shall be located as close as practicable to either the noise source or the receptor. Where the barrier does not enclose the equipment on multiple sides, the length of the barrier shall be substantially greater than its height to provide effective performance. The barriers shall be constructed of an acoustical blanket material that provides a minimum sound transmission class (STC) of 28.

MM NOI-1h During all construction activities, the Contractor/Construction Manager shall ensure that construction employees are trained in the proper operation and use of the equipment in order to minimize noise levels.

MM NOI-1i Prior to the commencement of construction activities, the Contractor/Construction Manager shall ensure that construction employees shall be required to participate in training programs related to project-specific noise requirements, specifications, and equipment operations. The construction employees shall also receive onsite training related to the noise-specific issues and sensitive areas adjacent to the pipeline route.

MM NOI-1j Staging sites shall be located on properties restricted to industrial and commercial uses only.

MM NOI-1k Staging sites shall not be located within 500 feet of a sensitive receptor. Where this is not possible, the Contractor/Construction Manager shall ensure that noise barriers are erected, or ensure that existing structures provide adequate noise barriers between the staging site and the sensitive receptor(s).

MM NOI-1l During all construction activities, the Contractor/Construction Manager shall ensure that stationary noise sources such as generators and compressors shall be positioned as far away as possible from noise sensitive areas.

MM NOI-1m During all construction activities, the Contractor/Construction Manager shall ensure that construction equipment is stored in the construction zone while in use in order to eliminate noise associated with repeated transportation of the equipment to and from the site.

MM NOI-1n Prior to the commencement of construction activities, the Contractor/Construction Manager shall ensure that public notice is given regarding construction which identifies the location and dates of construction, and the name and phone number of the contractor's contact person in case of complaints. One contact person shall be assigned to the pipeline project. The public notice shall encourage the residents to

contact this person rather than the police in case of complaint. Residents shall also be kept informed of any changes to the schedule. The designated contact person shall be available on a mobile phone. If a complaint is received, the contact person shall take whatever reasonable steps are necessary to resolve the complaint. If possible, a member of the construction team shall also travel to the complainant's location to understand the nature of the disturbance.

MM NOI-1o Prior to the commencement of construction activities, the LADWP Waterworks Engineer shall prepare a haul route plan for the construction of the project. Haul routes shall be on major arterial roads in industrial and commercial areas. Where haul routes must occur on major arterial roads in residential areas, such routes shall be subject to the review and approval of the local jurisdiction wherein the haul route will occur.

Level of Significance After Mitigation

Although the mitigation measures identified above would reduce the severity of the impact associated with construction noise, the resulting noise level after the incorporation of the mitigation would still exceed the daytime and nighttime thresholds of significance. Therefore, the impact will remain significant and unavoidable.

Excessive Groundborne Vibration

Impact NOI-2	**The project would result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.**

Impact Analysis

This impact discussion analyzes the potential for short-term construction and long-term operational activities to cause excessive levels of groundborne vibration. The long term operation of the project as a pipeline would not produce significant levels of vibration and no significant impacts associated with vibration would occur.

During construction, the use of heavy equipment operations during pavement breaking, trenching, and earth movement would produce the heaviest levels of vibration. Heavy equipment would be used during construction of the project, regardless of the construction method employed (i.e., open trench excavation, pipe jacking, or directional drilling). Therefore, the following discussion applies to all three construction methods.

A significant impact associated with vibration impacts would occur where project construction activity causes the vibration velocity level (L_v) to exceed 72 VdB at an adjacent residential building or 75 VdB at an adjacent institutional building. Additionally, a significant impact would occur if the PPV exceeds 0.20 in/sec (in/s) at any existing residential building or 0.30 in/sec at any existing institutional building. In the existing condition, measured ambient vibration levels exceed the

significance criterion of 72 VdB at all locations along the pipeline route, though the measured PPV levels are well below the significance criteria of 0.20 to 0.30 in/sec at these locations.

The heavy equipment that would be used during the construction of the project would produce an estimated L_v of up to 87 VdB and a PPV of up to 0.089 in/s at a distance of 25 feet from the source of the vibration. It is estimated that the L_v threshold of 72 VdB would be exceeded at existing residential buildings within 79 feet of the equipment. At existing institutional buildings within 63 feet of the equipment, the L_v threshold of 75 VdB would be exceeded. The exceedance of these thresholds would result in a potentially significant impact associated with vibration. Moreover, it is estimated that the PPV threshold of 0.20 in/s would be exceeded at distances of 15 feet or less from heavy equipment. LADWP has determined that the only portion of the project where it is expected that pipeline construction would occur within 15 feet of a building is at the intersection of Alameda Street and Mauretania Street. However, refinement of the construction plans may result in a slight shift in the location of the pipeline within the project roadways, which may result in additional areas where project construction would occur within 15 feet of existing or proposed buildings. It should be noted that these impacts would be temporary and intermittent during the construction period.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM NOI-2a During construction activities, in order to avoid potential building damage associated with construction vibration, the Contractor/Construction Manager shall ensure that heavy equipment (backhoes, dozers, graders, loaders, etc.) shall not be operated within 15 feet of any existing building. If the required distance cannot be maintained then the following measures shall be implemented:

a. Qualified structural and/or geotechnical engineers shall review the peak particle velocities estimated in this report, and determine if there are any risks to the building, including possible risks from dynamic soil settlement induced by the vibration. If the structural or geotechnical engineers identify any potential risks, they shall take all necessary steps to protect the building including, but not limited to, photographing and/or videotaping the building in order to provide a record of the existing conditions before construction.

b. If considered appropriate by a qualified structural engineer or geotechnical engineer, an engineer shall be on-site during the construction activities and perform such tests and observations as are necessary to ensure the structural stability of the building. This may include vibration measurements obtained inside or outside of the building.

Level of Significance After Mitigation

Significant and unavoidable.

Permanent Increase in Ambient Noise Levels

Impact NOI-3	**The project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.**

Impact Analysis

The proposed project would involve the operation of a recycled water pipeline that will be located underneath the existing public rights-of-way. The operation of the pipeline will not create a substantial permanent increase in ambient noise levels in the project vicinity. Therefore, impacts associated with the long term operation of the project would be less than significant, and no mitigation would be required.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant.

Temporary or Periodic Increase in Ambient Noise Levels

Impact NOI-4	**The project would result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

Impact Analysis

This impact discussion analyzes the potential for project construction noise to cause a substantial temporary increase in ambient noise levels in the project vicinity. Construction noise represents a short-term increase in ambient noise levels. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, the sensitivity of nearby land uses, and the timing and duration of the construction noises.

As discussed in the impact discussion for Impact NOI-1, the construction of the project would result in construction noise that would affect sensitive receptors in the project area. For purposes of this analysis, a potentially significant impact would occur related to a temporary or periodic increase in ambient noise if daytime construction activities exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use, or nighttime construction activities exceed existing ambient noise levels by 5 dBA or more at a noise sensitive use.

The combined (ambient plus construction) noise levels will vary along the pipeline route depending on the existing ambient noise levels and the exact distance from the pipeline to a receptor. Based on the noise modeling conducted in Noise Study prepared for the project, it is estimated that the combined noise levels will be at least 26 dB higher than existing ambient levels at all of the measurement locations along the proposed pipeline route. As these increases exceed the thresholds of 10 dB for daytime construction and 5 dB for nighttime construction, a potentially significant impact associated temporary or periodic noise increases would occur. Although mitigation measures MM NOI 1-a through MM NOI 1-o would reduce the severity of this impact, with the implementation of the mitigation measures this impact would remain significant and unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implementation of Mitigation Measures NOI-1a through NOI-1o is required.

Level of Significance After Mitigation

Less than significant.

Airport Noise Levels

Impact NOI-5	**For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.**

Impact Analysis

This impact discussion analyzes the potential for nearby airports to expose people residing or working the project area to excessive noise levels. The nearest airport to the proposed pipeline is Long Beach Municipal Airport. This airport is approximately 5.05 miles from the proposed pipeline. Noise from aircraft activity is not a primary source of noise in the project area. Torrance Municipal Airport also occurs within the project vicinity, but due to the relatively small size of the airport and the volume of aircraft it serves, excessive noise levels would not occur.

Based on distance to nearby airports, and the expected noise level from those facilities, aircraft noise would not result in excessive noise at the project site, and therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant.

Private Airstrip Noise Levels

Impact NOI-6	**For a project within the vicinity of a private airstrip, the project would not expose people residing or working in the project area to excessive noise level.**

Impact Analysis

There are no private airstrips in the project vicinity. Therefore, aircraft noise from private airstrips would not result in excessive noise at the project site. Therefore, there would be no associated impacts.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

No impact.

3.5 - Transportation and Traffic

3.5.1 - Introduction

This section describes transportation and traffic and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Traffic Study for the LADWP Harbor Refineries Recycled Water Pipeline Project prepared in May 2009 by KOA Corporation, included as Appendix E, Traffic. Agencies with jurisdiction over transportation and traffic circulation are identified under the Regulatory Framework heading, below.

3.5.2 - Environmental Setting

Traffic Characteristics

The project site is located in the City of Carson and the community of Wilmington within the City of Los Angeles. Regional access to the site is provided by the I-405 and I-110. The proposed project route is comprised of five-lane to two-lane roadways along commercial, industrial, school, and residential land uses. The majority of the construction route would be located within road rights-of-way that front commercial and industrial land uses. Table 3.5-1, shows the existing roadway characteristics of the roadways along the proposed project alignment.

Construction Assumptions

A typical construction spread (width of the work area) for this project would require the closure of up to three travel lanes. Intersections where open trench construction is used would be affected for approximately four weeks with turning traffic affected considerably longer. Active trenching per segment would take 30 days, including restoration of roadway surface paving and striping. Work areas for tunneling and jacking shafts would remain active for three to six months (longer duration for tunnel shafts). Section 2, Project Description, provides the proposed pipeline route's construction phase details, pipeline length, pipeline diameter, and general construction method(s).

Construction activities will be occur between the hours of 9:00 a.m. and 3:30 p.m. per the City of Los Angeles Mayor's Directive for Road Construction. However, if additional time is required, LADWP and West Basin Municipal Water District (WBMWD) will adhere to the proper protocols such as requesting an exemption to the directive from The City of Los Angeles' Department of Public Works and City of Los Angeles Department of Transportation (LADOT) and the City of Carson. In addition, LADWP and WBMWD will obtain the appropriate nighttime construction permits from the City of Los Angeles' Department of Public Works, LADOT, CalTrans, and the City of Carson. LADWP will provide notices to residents one week prior to road construction and closures pursuant to the provisions of the City of Los Angeles and the City of Carson.

Staging Areas

The construction methods to be utilized will require both on- and off-site staging area for the storage of equipment, supplies and materials. The LADWP Harbor District yard located would be the primary staging area for the portion of the pipeline that lies within the City of Los Angeles boundaries. In the City of Carson, the Construction Contractor will determine the primary staging area to be utilized.

Methodology for Traffic Analysis

The project involves the construction and operation of an underground recycled water pipeline. Because the nature of the project involves extensive construction within public rights-of-way and the long-term operation of the project would generate only a marginal amount of traffic associated with maintenance, the analysis within this section is focused on the short-term impacts associated with construction.

The analysis contained in this section of potential traffic circulation and area access impacts were analyzed based on typical roadway closures anticipated by LADWP during the construction of the project. The required dimensions of construction work areas were applied to the surveyed width of roadway cross-sections. Roadway width that would remain during closures was then analyzed to determine what capacity could remain (available travel lane width, on-street parking area width, etc.). Trips that would be generated by employee vehicles and construction haul/delivery trucks were not analyzed in a quantitative manner as these trips would be generated from various points throughout the construction process, which would entail a set of moving work areas and varying supply/equipment storage yards.

Impact thresholds defined by the LADOT and the County of Los Angeles Congestion Management Program (CMP) were not utilized for the project traffic analysis. These standards define significant impacts to traffic operations and the long-term mitigation of such impacts through the provision of additional traffic signal or roadway capacity. Construction activities will constrict roadway capacity and have a limited capability to provide more capacity in affected segments. The analysis is based on the capacity that can be provided during construction and any alternative/detour routes that may be necessary. Therefore, the impact analysis is based on roadway flow during construction, pedestrian and bicycle access, and generalized application of volume-to-capacity calculations.

Table 3.5-1: Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Wilmington Avenue								
Boiler Street - Dominguez Street	2	2	Raised	No Signage	NPAT	Commercial	40	79 feet
Dominguez Street - 213th Street	2	2	Raised	NPAT	NPAT	Commercial	40	80 feet
213th Street - Carson Street	2	2	Raised and Striped	No Signage	No Signage	Commercial/ Residential	40	82 feet
Carson Street - 218th Street	2	2	Raised	No Signage	NPAT	Commercial/ Residential	40	82 feet
Carson Street								
Grace Avenue - Avalon Boulevard	2	2	Raised	NP Monday 5AM - 8AM/NSAT	NP Monday 10AM - 1PM	Commercial/ Residential	35	83 feet
Avalon Boulevard - Civic Center Drive	2	2	Raised	NPAT	NS 7AM - 9AM, 3PM - 6PM	Commercial	40	83 feet
Civic Center Drive - Bonita Street	2/3	2	Raised	NPAT	NS 7AM - 9AM, 3PM - 6PM	Commercial	40	83 feet
Bonita Street - I-405 S on/off ramps	3	2	Raised	NPAT/No truck parking	NS 7AM - 9AM, 3PM - 6PM/NSAT	Commercial/ School	25/40	83 feet
I-405 S on/off ramp - I-405 N on/off ramps	3	2	Raised	No Signage	No truck parking	Freeway	40	87 feet
I-405 N on/off ramps - Perry Street	3	2	Raised	No Signage	NPAT	Commercial	40	83 feet
Perry Street - Vera Street	2	2	Raised	NP Wednesday 8AM - 11AM/ 1 hour truck parking	NPAT	Commercial/ Residential	40	81 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Carson Street (cont.)								
Vera Street - Martin Street	2	2	Raised	NP Wednesday 8AM - 11AM	NP Monday 8AM - 11AM	Residential	40	84 feet
Martin Street - Wilmington Avenue	2	2	Raised	NP Wednesday 8AM - 11AM	NP Monday 8AM - 11 AM/1 hour truck permitted parking	Commercial/ Residential	40	84.5 feet
Wilmington Avenue - Arnold Center Rd	2	2	Raised and Striped	1 hour truck parking	1 hour truck parking/ NPAT	Commercial	45	79 feet
Avalon Boulevard								
Desford Street - Carson Street	3	3	Raised	No Signage/Red Curb	No Signage/Red Curb	Commercial/ Residential	35	85 feet
Carson - 219th Street	2	2	Raised	30 minute 8AM - 6PM/ 1 hour truck parking	NS 7 AM - 9AM, 3PM - 6PM	Commercial	35	85 feet
219th Street - 220th Street	2	2	Raised	30 minute 8AM - 6PM/ 1 hour truck parking	NS 7 AM - 9AM, 3PM - 6PM	Commercial/ Residential	35	84 feet
220th Street - 221st Street	2	2	Raised	30 minute 8AM - 6PM	No Signage	Commercial/ Residential	35	81 feet
221st Street - 222nd Street	2	2	Raised	No Signage	No Signage	Commercial/ Residential	35	81 feet
222nd Street - 223rd Street	2	2	Raised	No Signage	1 hour truck parking	Commercial/ Residential	35	84 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Avalon Boulevard (cont.)								
223rd Street - 226th Street	2	2	Raised	No Signage	NP Friday 5AM - 8AM/No truck parking	Commercial/ Residential	40	83 feet
226th Street - Watson Center Road	2	2	Raised	No Signage	NP Friday 5AM - 8AM	Commercial/ Residential	40	83 feet
Watson Center Road - 228th Street	2	2	Raised	No Signage	NP Friday 5AM - 8AM	Commercial/ Residential	40	83 feet
228th Street - Bayport Street	2	2	Raised	NP Friday 5AM - 8AM/2 hour parking 7AM - 6PM	NP Friday 5AM - 8AM	Commercial/ Residential	40	83 feet
Bayport Street - Colony Park Drive	2	2	Raised	NP Friday 5AM - 8AM/2 hour parking 7AM - 6PM	NP Friday 5AM - 8AM	Residential	40	83 feet
Colony Park Drive - Scottsdale Drive	2	2	Raised	NP Friday 5AM - 8AM	NP Friday 5AM - 8AM	Residential	40	85 feet
Scottsdale Drive - Idabell Avenue	2	2	Raised	NP Friday 5AM - 8AM	NP Friday 5AM - 8AM	Commercial/ Residential	40	85 feet
Idabell Avenue - 238th Place	2	2	Raised	NP Friday 5AM - 8AM	NP Friday 5AM - 8AM	Commercial/ Residential	40	80 feet
238th Place - Sepulveda Boulevard	2	2	Raised	NP Friday 5AM - 8AM	NP Friday 5AM - 8AM/ 1hour truck parking	Commercial/ Residential	40	84 feet
Sepulveda Boulevard - Lincoln Street	2	2	Striped	1 hour parking	1 hour parking 7AM - 6PM	Commercial/ Residential	40	84 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Avalon Boulevard (cont.)								
Lincoln Street - Pacific Street	2	2	Striped	No Signage	1 hour parking 7AM - 6PM	Commercial/ Residential	40	84 feet
Pacific Street - Realty Street	2	2	Striped	No Signage	1 hour truck parking	Commercial/ Residential	40	85 feet
Realty Street - Bonds Street	2	2	Striped	No Signage	1 hour truck parking	Residential	40	83 feet
Bonds Street - 246th Street	2	2	Raised and Striped	NP Tuesday 10AM - 12PM/NPAT	NP Monday 10AM - 12PM/NSAT	Commercial/ Residential	35	59 feet
246th Street - 247th Street	2	2	Striped	NP Tuesday 10AM - 12PM/NPAT	NP Monday 10AM - 12PM	Residential	35	78 feet
247th Street - 248th Street	2	2	Striped	NP Tuesday 10AM - 12PM/NPAT	NP Monday 10AM - 12PM	Residential	35	79 feet
248th Street - 249th St	2	2	Striped	NP Tuesday 10AM - 12PM/NPAT	NP Monday 10AM - 12PM	Residential	35	79 feet
249th Street - Lomita Boulevard	2	2	Striped	NP Tuesday 10AM - 12PM	NP Monday 10AM - 12PM	Commercial/ Residential	35/25	80 feet
Lomita Boulevard - R Street	2	2	Striped	NP Tuesday 8AM - 10AM	NP Monday 8AM -10AM	Commercial/ Residential	35	75 feet
R Street - Chandler Street	2	2	Striped	NP Tuesday 8AM - 10AM	NP Monday 8AM -10AM	Commercial/ Residential	35	75 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Avalon Boulevard (cont.)								
Chandler Street - Q Street	2	2	Striped	NP Tuesday 8AM - 10AM	NP Monday 8AM -10AM	Commercial/ Residential	35	74 feet
Q Street - Sandison Street	2	2	Striped	NP Tuesday 8AM - 10AM/ NS 7AM - 3:30PM school days	NP Monday 8AM -10AM/ 1 hour parking 8AM - 6PM	Commercial/ School/ Residential	25	77 feet
Sandison Street - Pacific Coast Highway	2	2	Striped	NP Tuesday 8AM - 10AM/ NS 7AM - 3:30PM school days	NP Monday 8AM - 10AM/ 1 hour parking 8AM - 6PM	Commercial/S chool	25	78 feet
Pacific Coast Highway - N Street	2	2	Striped	NP Thursday 4AM - 6:30AM/ 2 hour parking 8AM - 6PM	NP Wednesday 4AM - 6:30 AM/ 2 hour parking 9AM - 5PM	Commercial	35	79 feet
N Street - M Street	2	2	Striped	NP Thursday 4AM - 6:30AM/ 2 hour parking 8AM - 6PM	NP Wednesday 4AM - 6:30 AM/ 2 hour parking 9AM - 5PM	Commercial	35	79 feet
M Street - L Street	2	2	Striped	NP Thursday 4AM - 6:30AM/ 2 hour parking 8AM - 6PM	NP Wednesday 4AM - 6:30 AM/ 2 hour parking 9AM - 5PM	Commercial	35	81 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Avalon Boulevard (cont.)								
L Street - Denni Street	2	2	Striped	NP Thursday 4AM - 6:30 AM/ 30 minute parking 8AM - 6PM	NP Wednesday 4AM - 6:30 AM/ 1 hour parking 8AM - 6PM	Commercial/ Residential	35	57 feet
Pacific Coast Highway								
Normandie Avenue - Vermont Avenue	2	3	Striped	NSAT/NS 6AM - 9:30AM, 3PM - 7PM/ 1 hour parking 9:30Am - 3PM	NSAT	Commercial/ Residential	40	73.5 feet
Vermont Avenue - Bixby Avenue	2	3	Striped	NSAT/NS 6AM - 9:30AM, 3PM - 7PM/ 1 hour parking 9:30Am - 3PM	NS 7AM - 9AM, 4PM - 6PM	Commercial/ Residential	40	80 feet
Bixby Avenue - Dodge Avenue	2	3	Striped	NSAT/NS 6AM - 9:30AM, 3PM - 7PM/ 1 hour parking 9:30Am - 3PM	NS 7AM - 9AM, 4PM - 6PM	Commercial/ Residential	40	80 feet
Dodge Avenue - Pine Creek Lane	2	3/2	Striped	NSAT/NS 6AM - 9:30AM, 3PM - 7PM/ 1 hour parking 9:30AM - 3PM	NS 7AM - 9AM, 4PM - 6PM	Commercial/ Residential	40	80 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Pacific Coast Highway (cont.)								
Pine Creek Lane - I-110 S on/off ramps	2	2	Striped	NSAT/NS 6AM - 9:30AM, 3PM - 7PM/ 1 hour parking 9:30AM - 3PM	NS 7AM - 9AM, 4PM - 6PM	Commercial/ Residential	40	78 feet
I-110 S on/off ramps - Figueroa Street	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	No Signage	Commercial	40	83 feet
Figueroa Street - Frigate Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	73.5 feet
Frigate Avenue - Wilmington Boulevard	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	72 feet
Wilmington Boulevard - Gulf Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	73.5 feet
Gulf Avenue - Ronan Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	70 feet
Ronan Avenue - McDonald Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
McDonald Avenue - Bayview Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
Bayview Avenue - Neptune Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
Neptune Avenue - Ravenna Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Pacific Coast Highway (cont.)								
Ravenna Avenue - Lagoon Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
Lagoon Avenue - Island Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
Island Avenue - Fries Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	73.5 feet
Fries Avenue - Marine Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	73.5 feet
Marine Avenue - Avalon Boulevard	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial	40	74 feet
Avalon Bl - Broad Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 6PM	NS 7AM - 9AM, 4PM - 6PM	Commercial/School	25	74 feet
Coil Avenue - Goodrich Avenue	3/2	3/2	Striped	NSAT	NSAT	Commercial	40	100 feet
Goodrich Avenue - O Street	3/2	2	Striped	NSAT	NSAT	Commercial	40	98 feet
Mauretania Street								
Coil Avenue - end of Mauretania Street (east)	1	1	Not Striped	No Signage	No Signage	Commercial	No post	40 feet
Alameda Street - Goodrich Avenue	1	1	Not Striped	No Signage	No Signage	Commercial	No post	28 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Figueroa Street								
Q Street - Pacific Coast Highway	2	2	Raised and Striped	NP 10PM - 6AM nightly	No Signage	Commercial/Freeway/ Residential	No post	73 feet
Pacific Coast Highway - Maurentania Street	2	2	Striped	NP 10PM - 6AM nightly	No Signage	Commercial/Freeway	No post	63 feet
Maurentani Street - M Street	2	2	Striped	NP 10PM - 6AM nightly	No Signage	Commercial/Freeway	No post	63 feet
M Street - Robidoux Street	2	2	Striped	NPAT	NSAT	Commercial/Freeway	No post	63 feet
Robidoux Street - Papeete Street	2	2	Striped	NPAT	NSAT	Commercial/Freeway	No post	63 feet
Papeete Street - L Street	2	2	Striped	NPAT	NSAT	Commercial/Freeway	No post	63 feet
L Street - Young Street	2	2	Striped	No Signage	NSAT	Commercial/Freeway	No post	62 feet
Coil Avenue								
Mauretania Street - Blinn Avenue	1	1	Not Striped	NPAT	NPAT	Commercial	30	23 feet
Blinn Avenue - Robidoux Street	1	1	Not Striped	NPAT	NPAT	Commercial/ Residential	30	32 feet
Robidoux Street - L Street	1	1	Not Striped	NPAT	NPAT	Residential/ Open Space	30	34 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Coil Avenue (cont.)								
L Street - Young Street	1	1	Not Striped	NPAT	NPAT	Residential/ Open Space	30	32 feet
Young Street - Mahar Street	1	1	Not Striped	NPAT	NPAT	Residential/ Open Space	30	32 feet
L Street								
West of Figueroa Pl (Harbor Park and Golf Course)	1	1	Striped	NSAT	NSAT	Commercial/ School	15	34.5 feet
Figueroa Place - Figueroa Street	2	2	Striped	No Signage/Red Curb	No Signage/Red Curb	Freeway	25	36.5 feet
Figueroa Street - Frigate Avenue	1	1	Not Striped	No Signage	No Signage	Residential	25	29 feet
Marine Avenue - Avalon Boulevard	1	1	Striped	NP Monday 9AM - 12PM	NP Tuesday 9AM - 12PM	Commercial/ Residential	25	38 feet
Avalon Boulevard - Broad Avenue	1	1	Striped	NPAT	NPAT	Commercial/ Residential	25	38 feet
Broad Avenue - Lakme Avenue	1	1	Striped	No Signage	No Signage	Residential	25	38 feet
Lakme Avenue - Banning Boulevard	1	1	Striped	No Signage	No Signage	Residential	25	40 feet
Banning Boulevard - Cary Avenue	1	1	Striped	No Signage	No Signage	Residential	25	40 feet
Cary Avenue - Lecouvreur Avenue	1	1	Striped	No Signage	No Signage	Residential	25	38 feet
Lecouvreur Avenue - Eubank Avenue	1	1	Striped	No Signage	No Signage	Commercial/ Residential	25	38 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
L Street (cont.)								
Eubank Avenue - Hyatt Avenue	1	1	Striped	No Signage	No Signage	Commercial/ Residential	25	38 feet
Hyatt Avenue - McFarland Avenue	1	1	Striped	No Signage	No Signage	Commercial/ Residential	25	38 feet
McFarland Avenue - Sanford Avenue	1	1	Striped	NPAT	No Signage	Commercial/ Residential	25	38 feet
Sanford Avenue - Watson Avenue	1	1	Striped	No Signage	No Signage	Commercial/ Residential	25	39 feet
Watson Avenue - Drumm Avenue	1	1	Striped	No Signage	No Signage	Commercial/ Residential	25	39 feet
Drumm Avenue - Coil Avenue	1	1	Striped	No Signage	No Signage	Open Space	25	38 feet
Coil Avenue -Blinn Avenue	1	1	Striped	No Signage	No Signage	Residential	25	37 feet
Figueroa Place								
Pacific Coast Hwy - L Street	1	1	Striped	NSAT	NPAT	Commercial/ Freeway	35	26 feet
L Street - I Street	1	1	Striped	NSAT	NSAT/1 hour truck parking	Commercial/F reeway	35	27.5 feet
I Street - Anaheim Street	1	1	Striped	No Signage	NSAT	Commercial/ Freeway	35	36 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Mahar Avenue								
Coil Avenue - Denni Street	1	1	Not Striped	NP 7AM - 5PM school days	NPAT/No Signage	Residential/ School	25	22-46 feet
Denni Street - Opp Street	1	1	Not Striped	No Signage	No Signage	Residential	25	45 feet
Opp Street - I Street	1	1	Not Striped	No Signage	No Signage	Commercial	25	41 feet
I Street - Anaheim Street	1	1	Not Striped	No Signage	No Signage	Commercial	25	41 feet
I Street								
Anaheim Street - Figueroa Pl	1	1	Not Striped	No Signage	No Signage	Residential	No post	37 feet
Cristobal Avenue - Henry Ford Avenue	2	2	Striped	No Signage	No Signage	Commercial	No post	70 feet
Henry Ford Avenue - Preble Avenue	2	2	Raised	No Signage	No Signage	Commercial	No post	96 feet
Preble Avenue - Murdoch Avenue	2	2	Raised	No Signage	No Signage	Commercial	No post	96 feet
Murdoch Avenue - Vreehland Avenue	2	2	Raised	No Signage	No Signage	Commercial	No post	93 feet
Vreehland Avenue - Goodrich Avenue	2	2	Raised	No Signage	No Signage	Commercial	No post	96 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Henry Ford Avenue								
Opp Street - I Street	2	2	Striped	No Signage	NSAT	Commercial	No post	88 feet
I Street - Anaheim Street	2	2	Striped	No Signage	NSAT	Commercial	No post	78 feet
South of Anaheim Street	3	3	Raised and Striped	No Signage	No Signage	Commercial	No post	99 feet
Sampson Avenue								
I Street and Anaheim Street	1	1	Not Striped	No Signage	No Signage	Commercial	No post	60 feet
Goodrich Avenue								
Mauretania Street - Pacific Coast Highway	1	1	Not Striped	No Signage	No Signage	Commercial	No post	25 feet
Anaheim Street								
Frampton Avenue - Vermont Avenue /Palos Verdes Drive	2	2	Striped	No Signage	No Signage	Commercial/ Residential	35	65 feet
Vermont Ave/Palos Verdes Drive - I Street	2	2	Striped	NSAT	NSAT	Commercial/ Residential	45	66 feet
I Street - Figueroa Place	2	2	Striped	NSAT	NSAT	Commercial/ Residential	35	57 feet
Watston Avenue - Mahar Avenue	2	2	Striped	No Signage/Red Curb	No Signage	Commercial	35/45	54-84 feet

Table 3.5-1 (cont.): Proposed Project Alignment Roadway Characteristics

Street Segments	# Lanes		Median Type	Parking Restrictions		General Land Use	Speed Limit	Roadway Width
	NB/ EB	SB/ WB		NS/ES	SS/WS			
Anaheim Street (cont.)								
Mahar Avenue - Alameda Street	2	2	Striped	No Signage/Red Curb	No Signage	Commercial	35/45	84 feet
Alameda Street - Cristobal Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 5PM	NSAT	Commercial	35/45	83 feet
Cristobal Avenue - Henry Ford Avenue	2	2	Striped	NS 7AM - 9AM, 4PM - 5PM	NSAT	Commercial	45	86 feet
Henry Ford Avenue - Sampson Avenue	2	3	Striped	NSAT	NSAT	Commercial	45	81 feet

Notes:
NP - No Parking NPNT - No Parking Night Time (permits exempt) NS - No Stopping NSAT- No Stopping Anytime NPAT - No Parking Anytime
Source: KOA Corporation, 2009.

Existing Moratoriums in Carson and Los Angeles

The City of Los Angeles and City of Carson both have street moratoriums to protect the integrity of the pavement surface and to reduce traffic impacts during certain holidays.

The proposed project will involve the installation of pipeline along various city streets and Pacific Coast Highway, a State Highway. Street moratoriums exist on some of the streets of the proposed pipeline route, including portions of Carson Street, Avalon Boulevard, and Pacific Coast Highway, as well as a few other locations.

The construction of this proposed pipeline will be coordinated with City and State Agencies before construction commences, in order to comply will all existing street moratoriums. If an existing moratorium conflicts with the proposed construction, the LADWP and or WBMWD may choose to work with the City and State Agencies to obtain an exemption to the street moratorium.

Existing Intersections Level of Service

A total of 29 roadway segments were analyzed in the Traffic Study. Table 3.5-2 shows the existing lane configurations and the existing levels of service (LOS) along the study roadway segments. As shown in Table 3.5-2, three segments—all along Pacific Coast Highway—currently operate at unacceptable levels of service in the existing condition. The remaining 26 roadways currently operate at good LOS values of C or better.

Table 3.5-2: Daily Vehicle Volumes and Level of Service on Selected Roadway Segments

	Study Roadway Segment	Existing Daily (24-hour period) Volume (2009)	Number of Lanes	Capacity Volume	Volume-to-Capacity Ratio	Level of Service
1	Wilmington Avenue, south of 213th Street	22,806	4	40,000	0.57	A
2	Carson Street, west of Bonita Street	27,471	4	40,000	0.69	B
3	Carson Street, east of Vera Street	17,698	4	40,000	0.44	A
4	Avalon Boulevard, north of 220th Street	28,662	4	40,000	0.72	C
5	East 223rd Street, west of Neptune Avenue	18,798	4	40,000	0.47	A
6	Main Street, north of 231st Street	16,995	4	40,000	0.42	A

Table 3.5-2 (cont.): Daily Vehicle Volumes and Level of Service on Selected Roadway Segments

	Study Roadway Segment	Existing Daily (24-hour period) Volume (2009)	Number of Lanes	Capacity Volume	Volume-to-Capacity Ratio	Level of Service
7	Dolores Street, south of 230th Street	4,405	2	15,000	0.29	A
8	Avalon Boulevard, north of Bayport Street	21,889	4	40,000	0.55	A
9	Sepulveda Boulevard, west of Ronan Avenue	28,212	4	40,000	0.71	C
10	Main Street, south of BNSF railroad tracks	15,974	4	40,000	0.40	A
11	Avalon Boulevard, north of 246th Street	19,932	4	40,000	0.50	A
12	Lomita Boulevard, east of Ravenna Avenue	20,940	4	40,000	0.52	A
13	Avalon Boulevard, south of Q Street	20,247	4	40,000	0.51	A
14	Pacific Coast Highway, west of Pine Creek Lane	56,418	5	50,000	1.13	F
15	Pacific Coast Highway, east of Frigate Avenue	38,682	4	40,000	0.97	E
16	Pacific Coast Highway, west of Ravenna Avenue	39,010	4	40,000	0.98	E
17	Pacific Coast Highway, east of O Street	30,154	4	40,000	0.75	C
18	Mauretania Street, west of Alameda Street	687	2	15,000	0.05	A
19	Figueroa Street, north of Robidoux Street	12,085	4	40,000	0.30	A
20	Avalon Boulevard, north of M Street	23,819	4	40,000	0.60	A
21	Coil Avenue, south of Blinn Avenue	946	2	15,000	0.06	A
22	L Street, west of Lagoon Drive	877	2	15,000	0.06	A
23	L Street, east of Lakme Avenue	5,481	2	15,000	0.37	A
24	L Street, east of Sanford Avenue	3,413	2	15,000	0.23	A
25	Figueroa Place, south of Lagoon	6,600	2	15,000	0.44	A

Table 3.5-2 (cont.): Daily Vehicle Volumes and Level of Service on Selected Roadway Segments

	Study Roadway Segment	Existing Daily (24-hour period) Volume (2009)	Number of Lanes	Capacity Volume	Volume-to-Capacity Ratio	Level of Service
	Drive					
26	Mahar Avenue, north of Opp Street	1,116	2	15,000	0.07	A
27	I Street, east of Preble Avenue	1,247	4	40,000	0.03	A
28	Anaheim Street, between I Street and Vermont Avenue/Palos Verdes Drive	29,203	4	40,000	0.73	C
29	Anaheim Street, west of Cristobal Avenue	29,837	4	40,000	0.75	C

Notes:
BNSF = Burlington Northern Santa Fe
Source: KOA Corporation, 2009.

3.5.3 - Regulatory Framework

State

California Department of Transportation

The California Vehicle Code (code) establishes height, weight, length, and width restrictions for vehicles and their loads. Vehicles or loads that exceed these limitations are considered oversize and require a special permit to operate on the State highway system. The code authorizes the California Department of Transportation (Caltrans) to issue special permits for the movement of these oversize vehicles along specified routes on the State highway system. The code authorizes county and city governments, such as Los Angeles, to issue special permits for movement of oversize vehicles through their jurisdictions.

Local

City of Los Angeles

The LADOT is responsible for transportation issues within the City of Los Angeles boundaries. LADOT reviews the transportation/traffic studies prepared for projects of all types for which the City is the lead agency, in addition to other public agency projects (county, State, or federal) located within, or that may affect, the City. LADOT's internal procedures are described in their Traffic Study Policies and Procedures Manual.

City of Carson

The City of Carson's Engineering Department is responsible for vehicular and pedestrian traffic safety and for the planning, design and construction of major public traffic facilities and capital improvements. The Department also provides traffic signals, striping and sign design support for all street for all street related projects, and investigates traffic studies in response to inquiries and requests.

3.5.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether transportation and traffic impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project:

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether noise impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the project result in:

a.) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b.) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c.) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d.) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e.) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

f.) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Traffic Increase

Impact TRAN-1	**The project would cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).**

Impact Analysis

During construction of the project, the pipe installation would occur within existing roadways, necessitating up to three travel lane-closures at any given time during the construction period. No

complete roadway closures would occur as part of the project. The closure of travel lanes would result in temporary traffic impacts to five arterial roadways, which provide local and/or regional access into and out of the area, will be significantly impacted with the proposed project construction. The reduced roadway capacity will significantly affect the following analyzed roadway segments:

- Anaheim Street, between Vermont Avenue/Palos Verdes Drive and I Street and between Mahar Avenue and Henry Ford Avenue - is a major east-west roadway with an Average Daily Trips (ADT) range of 29,837 to 29,203. The worst case LOS would be reduced from C to F during construction.
- Avalon Boulevard, between Carson Street and L Street - is a major north-south roadway with an ADT range of 19,932 to 28,662. The worst case LOS would be reduced from C to F during construction.
- Carson Street, between Avalon Boulevard and Wilmington Boulevard - is a major east-west roadway with an ADT range of 17,698 to 27,471. The worst case LOS would be reduced from C to F during construction.
- Pacific Coast Highway, between Pine Creek Lane and Avalon Boulevard and Goodrich Avenue and O Street - is a major north-south State highway with an ADT range of 30,154 to 56,418. The LOS within these segments range from C to F. All segments would be reduced to LOS F during construction, especially between Pine Creek Lane and Avalon Boulevard which would have an additional lane closure and worsen the roadway conditions within the already poor LOS values.
- Wilmington Boulevard - is a major north-south roadway with an average ADT of 22,806. LOS would be reduced from A to F during construction.

Although four of the five arterial roadway segments are operating at an acceptable LOS, by reducing the roadway capacity by up to three lanes, the potential for significant impacts are high with roadway operations likely increasing to unacceptable LOS (values of E or F). Pacific Coast Highway currently operates at an unacceptable LOS. Project construction would reduce roadway capacity by three lanes between Pine Creek Lane and Avalon Boulevard and would therefore likely worsen the roadway conditions within unacceptable LOS values.

There are additional smaller roadways that may be heavily impacted due to their narrow road widths and locations. These include the following:

- Mauretania Street, Coil Avenue, L Street, Figueroa Place, Mahar Avenue, I Street (western portion), and Goodrich Avenue. The segments tend to have low ADT's ranging from 6,600 vehicle trips along Figueroa Place to 687 vehicle trips along Mauretania Street.

- Construction located along L Street and Figueroa Place near Harbor City College would create significant traffic impacts since the roadways provide main access to the college.

Of the nine pipe jacking locations that have already been identified, seven are located along major roadways. The pipe jacking locations that would occur at the intersection of Avalon Boulevard and the Burlington Northern Santa Fe (BNSF) Railroad tracks, and at the intersection of Alameda Street and Mauretania Street, would result in significant impacts at the intersections, as there may be restrictions to left turn movements or other approach lanes (depending on the location of the construction work zone area in relation to the centerline and curb lanes). Moreover, because two additional pipe jacking locations may be implemented during project construction that have not been identified as of the preparation of this document, additional impacts to intersections may occur depending on the location of the sites.

Because project construction would result in congestion along affected roadway segments and intersections, a significant impact associated with project construction would occur. Mitigation measures MM TRAN-1a through MM TRAN-1g are identified below to reduce the severity of this impact. Additionally, LADWP will be required to prepare worksite traffic control and detour plans to best reduce traffic impacts during construction activities. However, even with the implementation of the mitigation measures identified below and the preparation of worksite traffic control and detour plans, this impact would be significant and unavoidable during various construction phases, albeit for relatively short periods (several weeks to a few months) at some or all of the work areas.

The completed project would consist of an underground pipeline, which would not affect traffic conditions within existing and future roadways within the project area. The inspection and maintenance of the pipeline would require only nominal and intermittent vehicular use and minimal parking within the project area. Because these trips would be temporary in nature, operation of the proposed project would have no lasting impact on the study roadways or the adjacent roadway systems. Therefore, long-term operational impacts to roadway segments and intersections would be less than significant and no mitigation measures would be required.

Level of Significance Before Mitigation

Significant (during construction).

Mitigation Measures

The following mitigation measures are provided to reduce Impact TRAN-1:

MM TRAN-1a Directional capacity (westbound in the a.m. peak and eastbound in the p.m. peak) should be considered in roadway closure planning. The provision of the original one-way capacity of the affected roadway (in number of travel lanes) in the peak direction, while providing a reduced number of travel lane for the opposite direction

of traffic flow, would help to alleviate any potential traffic impacts during construction if construction-period roadway LOS would be unacceptable.

MM TRAN-1b There are bicycle lanes located along Avalon Boulevard between 246th Street to the north and L Street to the south. Closure of these lanes in addition to the on-street parking could be necessary during Project construction. If these lanes are closed, direct alternates should be provided during construction. If provision of alternate routes is not feasible, bicycle route closure signs shall be posted at the next major intersections to the north and south of the construction area.

MM TRAN-1c Left-turn lanes and other approach lanes (as feasible) should be maintained in close vicinity to major intersections along the proposed project route.

MM TRAN-1d In residential areas where roadway widths are narrow, one lane should be maintained for reversible traffic flow. Additionally, access to residential driveways should be maintained.

MM TRAN-1e Marked pedestrian crosswalks should be maintained, especially when a school or transit stop is located nearby. There are schools located on Avalon Boulevard, Carson Street, L Street, Mahar Avenue, and Pacific Coast Highway. All crosswalks should be relocated temporarily, immediately beyond the construction work area in accordance with applicable safety regulations.

MM TRAN-1f If a mid-block crosswalk would result from a temporary crosswalk replacement, the crosswalk should be closed completely and pedestrians should be routed to another intersection leg.

MM TRAN-1g The study area has major industrial uses that generate sizeable levels of truck traffic, especially within the southern end of the study area (adjacent to the Port of Los Angeles). Where physical mitigation measures cannot be provided on roadway segments that would operate at LOS E or F during construction, peak-hour restrictions (6:00 to 9:00 a.m. and 3:30 to 7:00 p.m.) on construction activity would be necessary.

Level of Significance After Mitigation

Significant and unavoidable.

Level of Service Standards

Impact TRAN-2	**The project would exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways.**

Impact Analysis

As discussed in detail above in the impact analysis for TRAN-1, lane closures anticipated during the construction of the proposed project would result in congestion along affected roadway segments and intersections. The lane closures associated with the construction would temporarily exceed the level of service (LOS) for five arterial roadways within the project area, and several smaller area roadways. Exceeding the LOS established for these roadways would result in a significant impact associated with this issue. Mitigation measures MM TRAN-1a through MM TRAN-1g are identified above to reduce the severity of this impact. Additionally, LADWP will be required to prepare worksite traffic control and detour plans to best reduce traffic impacts during construction activities. However, even with the implementation of the mitigation measures identified above and the preparation of worksite traffic control and detour plans, this impact would be significant and unavoidable during various construction phases, albeit for relatively short time periods (several weeks to a few months) at some or all of the work areas.

No traffic impacts are anticipated upon project completion. The completed project would consist of an underground recycled water line and would not affect traffic conditions in the project area. The maintenance of the pipeline would require only nominal and intermittent vehicular use within the project area; therefore, long term operational impacts to roadway segments and intersections would be less than significant.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation Measures MM TRAN-1a through MM TRAN-1g, identified above, are provided to reduce Impact TRAN-2.

Level of Significance After Mitigation

Significant and unavoidable.

Air Traffic Patterns

Impact TRAN-3	**The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.**

Impact Analysis

The proposed project would construct a subsurface recycled water pipeline that would not directly or indirectly affect air traffic patterns. The construction and operation of the pipeline would not result in increased air traffic levels. Accordingly, no impacts associated with this issue would occur.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

No impact.

Hazards

Impact TRAN-4	**The project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).**

Impact Analysis

The project construction activities will be performed in compliance with applicable federal, State, and local regulations. Additionally, worksite traffic control plans and detour plans will be designed in compliance with local jurisdiction standards. As such, neither the construction of the project or the operation of the completed project would result in a safety hazards resulting from the design of the project. No associated impacts would occur.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

No impact.

Emergency Access

Impact TRAN-5	**The project would not result in inadequate emergency access.**

Impact Analysis

As thoroughly discussed above, the construction of the proposed project would result in up to three lane closures along existing roadways within the project area. Emergency vehicle access within the constructed areas would not be negatively affected as thru lanes would remain open. One Los Angeles County Fire Station (#B24) is located directly adjacent to the pipeline alignment at 701 E Carson Street. No other emergency service facilities including police stations, fire stations, or hospitals are located along the proposed route. Per LADWP policy, all property owners will be provided notification in advance of construction, including the Los Angeles County Fire Department. Additionally, the preparation of worksite traffic control plans and detour plans and the

implementation of mitigation measures MM TRAN-1a through MM TRAN-1g would further assure that impacts associated with emergency access within the project area during construction would be less than significant.

During operation of the completed project, the subsurface recycled water pipeline would not affect traffic conditions and/or emergency access within the project area. Therefore, no operational impacts would occur related to this issue.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation required.

Level of Significance After Mitigation

Less than significant impact.

Parking Capacity

Impact TRAN-6 The project would result in inadequate parking capacity.

Impact Analysis

The project, upon completion, will not result in a reduction of parking in the project vicinity. During construction, curbside parking will be reduced in various work areas to accommodate the construction of the project. Project construction along the project alignment roadways in Carson and Wilmington will likely require closure of on-street parking along the route. Along most residential segments, the existing curb-to-curb configuration is not of adequate width to provide temporary travel lanes and on-street parking. The project trenching work will be limited to 1,000-foot linear segments; parking could be found within adjacent blocks, but on-street parking capacity for the immediate area (one block) would be significantly-impacted for each work area. Parking demand that is currently absorbed by the roadways along the route would then move to side streets or adjacent blocks.

On-street parking, if not possible in the daytime, may be available at night time because the construction area would be reduced. Additionally, since the streets in Wilmington are a mix of commercial and residential, street parking by the storefronts (where available) will become available at night for nearby residents. In Carson, along Avalon Boulevard, depending on which lanes are closed, either the northbound or the southbound lanes may be available for commercial and residential on-street parking

Impacts along some segments will be minimized where extensive jacking operations are utilized, outside of the jacking pit work areas. However, significant and unavoidable temporary parking impacts would occur, as demand may exceed supply within on-street parking areas in the immediate

vicinity of the work areas. The reduction in parking capacity will be temporary and is expected to last from a few weeks up to a few months, depending on the work area under construction. Once operational, the proposed project would not result in lane closures or any other restrictions to surrounding parking along the project route. Operation of the proposed project would not impact existing parking along the route.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

No feasible mitigation measures are available to reduce the severity of this impact.

Level of Significance After Mitigation

Significant.

Conflict with Alternative Transportation

Impact TRAN-7	**The project would conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks).**

Impact Analysis

The roadway lane closures associated with construction of the project may result in temporary closures of bicycle lanes along the project alignment. However, the implementation of detour plans would provide for alternative bicycle routes that would avoid the construction areas. However, impacts to bicycle lanes during construction activities are regarded as a significant impact. Implementation of mitigation measure MM TRAN-1b, identified above, would reduce this impact.

The project area is currently served by Metro, LADOT Dash and Commuter Express, City of Carson North/South shuttle and Circuit, Torrance Transit, and Gardenia Municipal Service (detail regarding the locations of each route is provided in Appendix F). The construction along the project alignment would result in temporary disruptions to bus stops currently serving the various transit lines, which would be a potentially significant impact.

Upon completion of the project, the operation of the project would not affect alternative transportation; and, would therefore result in no impact associated with this issue.

Level of Significance Before Mitigation

Significant.

Mitigation Measures

Mitigation measure MM TRAN-1b and the following mitigation measure would reduce the impact associated with Impact TRAN-7

MM TRAN-7a During all construction activities, temporary replacement bus stops shall be established in portions of the project alignment where bus stop closures are required to accommodate project construction. The temporary bus stops shall be located along wide portions of the roadway where the maximum number of travel lanes can be accommodated during construction.

Level of Significance After Mitigation

Less than significant impact.

3.6 - Climate Change

This section describes climate change and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on information contained in the Air Quality Analysis Report prepared in May 2009, by Michael Brandman Associates, included in this EIR as Appendix B.

3.6.1 - Environmental Setting

Briefly stated, climate change is a change in the average weather of the earth that may be measured by changes in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes that have occurred in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The IPCC predicted that global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Centigrade (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a).

In California, climate change may result in consequences such as the following:

- A reduction in the quality and supply of water to the State from the Sierra snow pack;
- Increased risk of large wildfires;
- Reductions in the quality and quantity of certain agricultural products;
- Exacerbation of air quality problems;
- A rise in sea levels resulting in the displacement of coastal businesses and residences;
- Damage to marine ecosystems and the natural environment;
- An increase in infections, disease, asthma, and other health-related problems; and
- A decrease in the health and productivity of California's forests (CCCC 2006).

Greenhouse Gases

Gases that trap heat in the atmosphere are GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHG. The presence of GHGs in the atmosphere affects the earth's temperature. Without the natural heat-trapping effect of GHG, the earth's surface would be about 34°C cooler (CAT 2006). However, it is believed that emissions from human activities,

such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. The GWP of a gas is essentially a measurement of the GHG as compared with the reference gas, carbon dioxide; carbon dioxide has a GWP of one. The GHGs of concern from the project are summarized in Table 3.6-1.

Individual GHG compounds have varying GWP and atmospheric lifetimes. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent metric. Methane's warming potential of 21 indicates that methane has a 21 times greater warming affect than carbon dioxide on a molecule per molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its GWP.

Table 3.6-1: Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Water Vapor	Water vapor is the most abundant, important, and variable GHG. In the atmosphere, it maintains the climate necessary for life.	Sources include evaporation from the ocean and other water bodies, sublimation of ice and snow, and transpiration from plants.
Ozone (O_3)	Ozone is a short-lived local GHG and photochemical pollutant. Tropospheric ozone changes contribute to radiative forcing on a global scale. GWPs for short-lived GHGs, such as ozone and aerosols, are not defined by the IPCC.	Ozone is formed from reactions of ozone precursors (nitrogen oxides [NO_x] and volatile organic compounds [VOC]) and sunlight in the atmosphere. VOC and NO_x are emitted from automobiles, solvents, and fuel combustion.
Aerosols	Aerosols are particulate matter suspended in the air. They are short-lived and remain in the atmosphere for about a week. Aerosols warm the atmosphere by absorbing heat and cool the atmosphere by reflecting light, with radiative forcing (RF) cooling effects of –1.2 Wm^{-2}. There is a low scientific understanding of the RF of individual aerosols, such as black carbon. Black carbon can cause warming from deposition on snow (+0.1 Wm^{-2}) and from suspensions in air (+0.2 Wm^{-2}). A GWP of 761 for black carbon has been identified in a journal article. Global cooling potentials for other aerosols in a metric similar to the GWP are not available.	Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning and incomplete combustion of fossil fuels (such as diesel fuel).

Table 3.6-1 (cont.): Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Methane (CH_4)	Methane is a flammable gas and is the main component of natural gas. GWP = 21.	A natural source of methane is from the anaerobic decay of organic matter. Methane is extracted from geological deposits (natural gas fields). Other sources are from landfills, fermentation of manure, and cattle.
Nitrous oxide (N_2O)	Nitrous oxide is also known as laughing gas and is a colorless GHG. GWP = 310.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Carbon dioxide (CO_2)	Carbon dioxide is an odorless, colorless, natural GHG. GWP = 1.	Carbon dioxide is emitted from natural and anthropogenic sources. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The concentration in 2005 was 379 ppm, which is an increase of about 1.4 ppm per year since 1960.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). GWPs range from 3,800 to 8,100.	CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, the Montreal Protocol on Substances that Deplete the Ozone Layer stopped their production in 1987.
Hydrofluorocarbons (HFCs)	The HFCs with the largest measured atmospheric concentrations are HFC-23 and HFC-134a (10 ppt) and HFC-152a (1 ppt). GWPs: HFC-23 = 11,700, HFC-134a = 1,300, HFC-152a = 140.	HFCs are synthetic manmade chemicals that are used as a substitute for CFCs in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. GWPs range from 6,500 to 9,200.	Two main sources of PFCs are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. Concentrations in the 1990s were about 4 ppt. It has the highest GWP of any gas evaluated, 23,900.	It is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.

Table 3.6-1 (cont.): Greenhouse Gases

Greenhouse Gas	Description and Physical Properties	Sources
Notes: ppm = parts per million; ppt = parts per trillion (measure of concentration in the atmosphere); GWP = global warming potential Source: IPCC 2007a.		

Emissions Inventories and Trends

International and National

In 2004, total worldwide GHG emissions were estimated to be 20,135 million metric tons of carbon dioxide equivalent ($MMTCO_2e$), excluding emissions/removals from land use, land use change, and forestry (UNFCCC 2006). (Sinks, or removal processes of GHG, plays an important role in the GHG inventory as forest and other land uses absorb carbon.) In 2004, GHG emissions in the U.S. were 7,074.4 $MMTCO_2e$ (EPA 2006a). In 2005, total U.S. GHG emissions were 7,260.4 $MMTCO_2e$, a 16.3 percent increase from 1990 emissions, while U.S. gross domestic product has increased by 55 percent over the same period (EPA 2007). Emissions rose from 2004 to 2005, increasing by 0.8 percent. The main causes of the increase is believed to be: (1) strong economic growth in 2005, leading to increased demand for electricity, and (2) an increase in the demand for electricity due to warmer summer conditions (EPA 2007). However, a decrease in demand for fuels due to warmer winter conditions and higher fuel prices moderated the increase in emissions.

In 2006, emissions in the U.S. were 7,054.2 $MMTCO_2e$, which is a decrease from 2005 emissions. The decrease in emissions from 2005 is attributable to 1) reduced electricity demand for heating in the winter and cooling in the summer; 2) rising fuel prices in the transportation sector leading to decreased fuel use; and 3) the increased use of natural gas and renewable energy (EPA 2008).

State

California is the second largest contributor in the U.S. of GHGs and the sixteenth largest in the world (CEC 2006). In 2004, California produced 500 $MMTCO_2e$ (CEC 2007), including imported electricity and excluding combustion of international fuels and carbon sinks or storage, which is approximately 7 percent of U.S. emissions. The major source of GHGs in California is transportation, contributing 41 percent of the State's total GHG emissions (CEC 2006). Electricity generation is the second largest source, contributing 22 percent of the State's GHG emissions (CEC 2006). The inventory for California's GHG emissions between 2000 and 2006 is presented in Table 3.6-2.

Table 3.6-2: California GHG Inventory 2000-2006

Main Sector*	Emissions $MMTCO_2e$						
	2000	2001	2002	2003	2004	2005	2006
Agriculture & Forestry	20.91	21.12	24.34	24.48	24.78	25.2	26.25
Commercial	12.98	12.58	14.46	13.07	13.15	12.97	13.25
Electricity Generation (Imports)	42.97	52.38	50.61	56.29	58.59	54.92	49.92
Electricity Generation (In State)	60.76	64.66	51.56	49.77	58.08	52.45	56.99
Industrial	107.93	105.47	107.44	106.41	100.99	100.51	103
Not Specified	8.75	9.6	10.47	11.33	12.2	12.9	13.52
Residential	32.2	30.45	30.22	29.88	31.54	30.94	31.12
Transportation	171.94	174.62	181.32	178.9	183.03	185.82	185.77
Total	458.45	470.89	470.42	470.12	482.35	475.7	479.8

Notes:
* Excludes Military Sector.
Source: ARB, 2009.

Potential Environmental Effects

Worldwide, average temperatures are likely to increase by 1.8 °C to 4°C, or approximately 3 degrees Fahrenheit (°F) to 7°F by the end of the 21st century (IPCC 2007a). However, a global temperature increase does not translate to a uniform increase in temperature in all locations on the earth. Regional climate changes are dependent on multiple variables, such as topography. One region of the Earth may experience increased temperature, increased incidents of drought and similar warming effects, whereas another region may experience a relative cooling. According to the IPCC's Working Group II Report, climate change impacts to North America may include diminishing snowpack, increasing evaporation, exacerbated shoreline erosion, exacerbated inundation from sea level rising, increased risk and frequency of wildfire, increased risk of insect outbreaks, increased experiences of heat waves, and rearrangement of ecosystems, as species and ecosystem zones shift northward and to higher elevations (IPCC 2007b).

For California, climate change has the potential to incur/exacerbate the following environmental impacts (CAT 2006):

- Reduced precipitation;
- Changes to precipitation and runoff patterns;
- Reduced snowfall (precipitation occurring as rain instead of snow);
- Earlier snowmelt;
- Increased agricultural growing season;
- Increased growth rates of weeds, insect pests and pathogens;
- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of

- Decreased snowpack;
- Increased agricultural demand for water;
- Intrusion of seawater into coastal aquifers;
- wildfire events; and,
- Expansion of the range and increased frequency of pest outbreaks.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-laying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

3.6.2 - Regulatory Framework

Federal

The U.S. Environmental Protection Agency (EPA) currently does not regulate GHG emissions from motor vehicles. *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court held that petitioners have a standing to challenge the EPA and that the EPA has statutory authority to regulate emissions of GHGs from new motor vehicles.

In April 2009, EPA published a Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. EPA is proposing to find that the current and projected concentrations of the mix of six key greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations. EPA is further proposing to find that the combined emissions of CO_2, CH_4, N_2O, and HFCs from new motor vehicles and motor vehicle engines contribute to the atmospheric concentrations of these key greenhouse gases and hence to the threat of climate change. The proposed action does not itself impose any requirements on industry or other entities. However, the finding, if finalized by the EPA, is a key step in regulating GHGs under the CAA.

However, federal regulation of GHGs can occur through other means, such as fuel efficiency standards. President Barrack Obama put into motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. The new standards would cover model years 2012 through 2016 and would require an average fuel economy standard of 35.5 miles per gallon in 2016. A new Corporate Average Fuel Economy (CAFE) law was passed by Congress in 2007, which required an average fuel economy of 35 miles per gallon in 2020. EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the Department of Transportation (DOT), released a notice of intent to conduct joint rulemaking to establish vehicle GHG emissions and CAFE standards in May 2009. It should be noted, however, that EPA's involvement in the joint rulemaking is dependant upon finalizing the endangerment finding discussed above, thereby providing regulatory authority over GHG emissions to the EPA.

State

There have been significant legislative and regulatory activities that affect climate change and greenhouse in the State of California. A thorough discussion of relevant legislative and regulatory activities is provided in Appendix B to this environmental document.

SB 97. Passed in August 2007 and added Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)." Section 21097 was also added to the Public Resources Code. It provides CEQA protection for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to adequately analyze the effects of GHGs would not violate CEQA. However, the CEQA protection section of SB 97 remains in effect only until January 1, 2010.

AB 32. In 2006, the California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs, as defined under AB 32, include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. The California Air Resources Board (ARB) is the State agency charged with monitoring and regulating sources of emissions of GHGs that cause global warming in order to reduce emissions of GHGs.

The ARB Governing Board approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007. Therefore, in 2020, emissions in California are required to be at or below 427 $MMTCO_2e$.

Under the current "business as usual" scenario, statewide emissions are increasing at a rate of approximately 1 percent per year as noted below.

- 1990: 427 $MMTCO_2e$
- 2004: 480 $MMTCO_2e$
- 2008: 495 $MMTCO_2e$
- 2020: 596 $MMTCO_2e$

Under AB 32, the ARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California (ARB 2007). Discrete early action measures are currently underway or are enforceable by January 1, 2010. Early action measures are regulatory or non-

regulatory and are currently in progress or to be initiated by the ARB in the 2007 to 2012 timeframe. The ARB has 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. Of those early action measures, nine are considered discrete early action measures, as they are regulatory and enforceable by January 1, 2010. The ARB estimates that the 44 recommendations are expected to result in reductions of at least 42 $MMTCO_2e$ by 2020, representing approximately 25 percent of the 2020 target.

CEQA is only mentioned once in the Early Action Measures report. The California Air Pollution Control Officer's Association suggested that ARB work with local air districts on approaches to review GHG impacts under the CEQA process, including significance thresholds for GHGs for projects and to develop a process for capturing reductions that result from CEQA mitigations. ARB's response to this recommendation in the report is as follows: "the Governor's Office of Planning and Research is charged with providing statewide guidance on CEQA implementation. With respect to quantifying any reductions that result from project level mitigation of GHG emissions, we would like to see air districts take a lead role in tracking such reductions in their regions" (ARB 2007).

The ARB Board approved the Climate Change Scoping Plan (Scoping Plan) in December 2008. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (ARB 2008). The measures in the Scoping Plan will be developed over the next two years through rule development at the ARB and other agencies, and are expected to be in place by 2012.

As noted in the Scoping Plan, the projected total business-as-usual emissions for year 2020 (estimated as 596 $MMTCO_2e$) must be reduced approximately 30 percent to achieve the ARB's approved 2020 emission target of 427 $MMTCO_2e$. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewable energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between 'capped' and 'uncapped' strategies. 'Capped' strategies are subject to the proposed cap-and-trade program. The Scoping Plan states that the inclusion of these emissions within the cap-and trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. 'Uncapped' strategies that will not be subject to the cap-and-trade emissions caps and requirements, and are provided as a margin of safety by accounting for additional GHG emission reductions.

Non Legislative

Governor's Office of Planning and Research. The Governor's Office of Planning and Research (OPR) published a technical advisory on CEQA and Climate Change, as required under SB 97, on June 19, 2008. The guidance did not include a suggested threshold, but stated that the OPR has asked ARB to "recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state." The OPR does recommend that CEQA analyses include the following components:

- Identify GHG emissions
- Determine significance
- Mitigate impacts

The OPR has also started tracking environmental documents that contain GHG analysis and mitigation measures. The website, www.ceqamap.com, contains the list of documents in electronic form and is maintained by CEQAdocs.com.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for GHG emissions, as required by Senate Bill 97 (Chapter 185, 2007). These proposed CEQA Guideline amendments would provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Draft GHG Guidelines fit within the existing CEQA framework by amending existing Guidelines to reference climate change. The Natural Resources Agency (Resources Agency) will conduct formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by Senate Bill 97.

On July 3, 2009, Resources Agency began the rulemaking process, publishing a Notice of Proposed Action to start the public comment period on the proposed Guideline amendments. Public hearings are scheduled in Sacramento and Los Angeles on August 18th and 20th, respectively. The Resources Agency will accept written comments until August 20, 2009.

OPR proposes adding a new section, CEQA Guidelines § 15064.4, to assist agencies in determining the significance of GHG emissions. As proposed, the new Guideline section would allow agencies the discretion to determine whether a quantitative or qualitative analysis is best for a particular project. Importantly, however, little guidance is offered on the crucial next step in this assessment process – how to determine whether the project's estimated GHG emissions are significant or cumulatively considerable.

The proposed guidelines also amend CEQA Guidelines §§ 15126.4 and 15130, which address mitigation measures and cumulative impacts respectively. In the proposed revision, GHG mitigation measures are referenced in general terms, but no specific measures are championed by OPR. The proposed revision to the cumulative impact discussion requirement (§ 15130) simply directs agencies to analyze GHG emissions in an EIR when a project's incremental contribution of emissions may be cumulatively considerable, however it does not answer the question of when emissions are cumulatively considerable.

OPR also proposes a Guideline section that would encourage agencies to tier and streamline the GHG emissions analysis in certain cases. Section 15183.5 permits programmatic GHG analysis and later project–specific tiering, as well as the preparation of GHG Reduction Plans. Compliance with such plans can support a determination that a project's cumulative effect is not cumulatively considerable, according to proposed § 15183.5(b).

In addition, the amendments propose revisions to Appendix F of the CEQA Guidelines, which focuses on Energy Conservation, and Appendix G, which includes the sample Environmental Checklist Form. OPR would amend the Checklist to include the following questions:

> *Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*
>
> And,
>
> *Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHG?*

CAPCOA. On January 8, 2008, the California Air Pollution Control Officers Association (CAPCOA) released a paper to provide a common platform of information and tools for public agencies. The disclaimer states that it is not a guidance document but a resource to enable local

decision makers to make the best decisions they can in the face of incomplete information during a period of change. The paper indicates that it is an interim resource and does not endorse any particular approach. It discusses three groups of potential thresholds, including a no significance threshold, a threshold of zero, and a non-zero threshold (CAPCOA 2008). The non-zero quantitative thresholds as identified in the paper range from 900 to 50,000 metric tons per year. The CAPCOA paper also identified non-zero qualitative thresholds.

The Scoping Plan states that, "The 2020 goal was established to be an aggressive, but achievable, mid-term target, and the 2050 GHG emissions reduction goal represents the level scientists believe is necessary to reach levels that will stabilize climate" (ARB 2008, page 4). The 2050 goal is in Executive Order S-3-05.

South Coast Air Quality Management District

On December 5, 2008, the SCAQMD's Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary/industrial sources, rules, and plans where the SCAQMD is lead agency under CEQA. The threshold adopted is a tiered threshold, relying on a series of criteria to determine if an applicable project would generate a significant GHG impact. Included in the criteria are consistency with a GHG Reduction Plan, and a numeric threshold of 10,000 $MTCO_2e$ per year (including construction emissions amortized over 30 years).

The SCAQMD has not adopted recommended thresholds of significance for GHG where SCAQMD is not the lead agency or for non-stationary sources. The proposed project is not a stationary source, nor is the SCAQMD the lead agency under CEQA. Therefore, the interim GHG threshold adopted by SCAQMD does not apply to the project.

The GHG CEQA Significance Threshold Working Group is currently evaluating a tiered threshold for non-stationary sources and project where the SCAQMD is not the lead agency. It is conducting a survey for residential, commercial, and mixed use projects that have been evaluated under CEQA for which the SCAQMD is a responsible agency. The information will be used to determine the level of greenhouse gas emissions that constitute the 90th percentile (for example, 90th percentile is 90 percent of known emissions), or other percentile as desired.

SCAQMD Regulation XXVII, Climate Change

Rule 2702, Greenhouse Gas Reduction Program, was proposed on January 9, 2009. The purpose of the rule is to create a Greenhouse Gas Reduction Program for greenhouse gas reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties. Reductions obtained by the program may be purchased by persons for a variety of uses. Projects funded through this program may also reduce criteria or toxic pollutants that can help local and regional air quality.

Local

City of Carson

The City of Carson is a member of the International Council for Local Environmental Initiatives (ILEA) since 2008. The City has not developed community inventory, climate action plan, or reduction targets for operations or community at the time that this document was written.

May 6, 2008 the Carson City Council approved participation with the South Bay Cities Council of Governments (SUCCOR) to complete their baseline emissions inventories and Climate Action Plan

City of Los Angeles

The City of Los Angeles is a charter member the California Climate Action Registry. In addition, the City joined the "Cool Cities" program in 2005 and signed in U.S. Mayors Climate Protection Agreement, which provides a framework for local action in reducing greenhouse gases.

The City of Los Angeles has issued guidance promoting green building to reduce GHG emissions. The goal of the Green LA Action Plan (Plan) is to reduce greenhouse gas emissions 35 percent below 1990 levels by 2030. The Plan identifies objectives and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations, and create a framework to address citywide GHG emissions. The Plan lists various focus areas in which to implement GHG reduction strategies. Focus areas listed in the Plan include energy, water, transportation, land use, waste, port, airport, and ensuring that changes to the local climate are incorporated into planning and building decisions.

Los Angeles Department of Water and Power

LADWP has modified its generation resource mix and undertaken numerous programs to reduce greenhouse gas emissions since 1990. In 1995, LADWP signed a Climate Challenge Participation Accord with the U.S. Department of Energy, voluntarily committing to reduce CO_2 emissions from electricity generation to keep LADWP's average annual CO_2 emissions from 1991 to 2000 below its 1990 baseline. In 2000, LADWP's Integrated Resource Plan set a new goal to reduce greenhouse gas emissions by at least 5 percent below 1990 levels by 2012. Due to these efforts, LADWP's 2006 CO_2 emissions were 7 percent lower that its 1990 emissions, while total electricity generation (MWh) grew 14 percent over the same period.

In 2002, LADWP became a Charter Member of the California Climate Action Registry, and has reported its 2000-2006 entity-wide greenhouse gas emissions to the Registry. Currently, LADWP is aggressively pursuing a Renewable Portfolio Standard goal of meeting 20 percent of its customer's energy needs with renewable generation by 2010, with a long-term goal of 35 percent renewable energy by 2020. In addition, LADWP has implemented a number of programs with emission reduction benefits, including water conservation, customer energy efficiency, and demand side

management, solar power, building energy efficiency retrofits, recycling, operating electric and fuel-efficient vehicles, and tree planting (urban forestry).

3.6.3 - Thresholds of Significance

The potential effect of greenhouse gas emissions on climate change is an emerging issue that warrants discussion under CEQA. Unlike the pollutants discussed previously that may have regional and/or local effects, project-generated greenhouse gas emissions do not directly produce local or regional impacts, but may contribute to an impact on global climate. Individual projects contribute relatively small amounts of greenhouse gases that, when added to all other greenhouse gas emitting activities around the world, result in global increases in these emissions. Local or regional environmental effects may occur if the climate is changed.

Guidelines for what would constitute a significant increase in greenhouse gas emissions from projects have not been developed by the ARB, the California Environmental Protection Agency (CalEPA), the EPA, the SCAQMD, or other appropriate governmental organizations. As discussed in the Regulatory Setting, SCAQMD has developed a threshold for stationary source projects for which they are the lead agency. That threshold does not apply to this project, as it is neither a stationary source, nor is the SCAQMD the lead agency. SCAQMD is currently developing thresholds for non-stationary source projects. ARB is similarly working on thresholds for non-stationary sources. In addition, the OPR has proposed a draft threshold of significance for inclusion into the CEQA Guidelines. However, as of the date of this writing, there are no adopted thresholds applicable to the project. Therefore, the following contribution to climate change threshold will be used:

> *Will the project conflict with the provisions of an adopted Greenhouse Gas Reduction Plan or Strategy. If no adopted Greenhouse Gas Reduction Plan or Strategy is applicable, would the project significantly hinder or delay California's ability to meet the reduction targets contained in AB 32?*

3.6.4 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Contribution to Climate Change

Impact CC-1:	**The project would not significantly hinder or delay California's ability to meet the reduction targets contained in AB 32.>**

Impact Analysis

The project contributes to climate change impacts through its contribution of greenhouse gases (GHG). The project would generate a variety of GHGs during construction and operation, including several defined by AB 32, such as carbon dioxide, methane, and nitrous oxide. The project would

emit greenhouse gases such as carbon dioxide, methane, and nitrous oxide from the exhaust of equipment, and exhaust of vehicles for employees and hauling trips.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

An inventory of GHG emissions generated by the project is presented below. The emissions are estimated and are converted to metric tons of $MTCO_2e$ using the formula: $MTCO_2e$ = (tons of gas) x GWP x (0.9072 metric tons of gas). Construction-generated and on-road mobile emissions were calculated using the methodology provided in Appendix B. It should be noted that due to the available information, it is not possible to scale the emissions to determine the difference of emissions between the alternative routes. The emissions presented below represent a highly-conservative analysis scenario, where all pieces of equipment are assumed to operate every day, 5 days a week, for the full duration of the construction period. Because the analysis is conservative, it represents the worst-case construction scenario for all three potential project routes. In addition, mitigation measures applied in the Air Quality section would reduce GHG emissions. However, the measures reduce the level of daily activity, not total annual activity. It is currently infeasible to estimate the GHG emission reduction that would occur with implementation of those measures.

Construction Emissions Inventory

The project would result in approximately 3,740 MTCO2e over the duration of construction. $MTCO_2e$ is calculated by multiplying the tons of CO_2 by 0.9072 and the global warming potential of 1. The project's calculated GHG inventory from construction is presented in Table 3.6-3.

Table 3.6-3: Construction Emissions

Emission Source	CO_2 Emissions	
	Tons	Metric Tons CO_2e
2009 On and Off-Road	737	668
2010 On and Off-Road	1,764	1,600
2011 On and Off-Road	1,615	1,466
11 Jacking Locations (Hauling)	1.65	1.50
2 HAD Locations (Hauling)	3.18	2.88
Total Emissions	4,121	3,739
Source: MBA 2009		

Operational Emissions Inventory

Currently, potable water from a variety of sources is delivered to a variety of end-users in the project area. In addition, the Carson Regional Water Recycling Plant processes water to Nitrified Title 22 standards. The project would construct a pipeline to deliver the existing source of Title 22 recycle water to the existing water users, thereby reducing the consumption of potable water. The project does not propose or anticipate any additional or new operational, or long-term, emissions sources. In addition, the project is not expected increase the activity at the Carson Regional Water Recycling Plant. However, the project may inadvertently increase operational activity at the plant, thus resulting in a slight increase in operational emission. An increase in operational emissions at the plant attributable to implementation of the project is not calculated in this analysis, as the project is not anticipated to change the operation of the Carson Regional Water Recycling Plant.

The project has been designed to offset up to 15,000 acre-feet per year of potable water with Nitrified Title 22 recycled Water. Because the emissions associated with both the recycled water and the potable water are existing, the project offsets the emissions associated with the pumping, treatment and conveyance of up to 15,000 acre-feet of potable water.

Because the potable water delivered to the area comes from a variety of sources, the generalized emission factors for Southern California were used, as detailed in Appendix B, to estimate the amount of GHGs offset by the project. As shown in Table 3.6-4, the project would reduce up to 23,263.3 $MTCO_2e$ per year at project buildout.

Table 3.6-4: GHG Inventory of Potable Water Reduced by Project

Source	Tons per Year			Metric Tons CO_2e
	Carbon Dioxide	Nitrous Oxide	Methane	
Potable Water	25,602	0.12	0.21	23,263.3
Source: MBA 2009.				

Level of Significance Before Mitigation

Less than significant impact.

The highest annual estimated GHG emissions associated with construction of the proposed pipeline would be approximately 1,600 $MTCO_2$ per year (year 2010). Absent any air quality regulatory agency-adopted threshold for GHG emissions, it is notable that the proposed project would generate substantially fewer emissions than the 25,000 $MTCO_2$ per year required for mandatory reporting to the ARB, the 10,000 $MTCO_2$ per year limit under the Assembly Bill 32 cap and trade program, and the 10,000 $MTCO_2$ per year threshold used by SCAQMD for stationary sources where the SCAQMD is the Lead Agency. Because construction-related emissions would be finite in nature, below the minimum standard for reporting requirements under Assembly Bill 32, and below thresholds being

considered by regulatory agencies, the GHG emissions related to construction of the proposed turbines would not be considered to make a cumulatively considerable contribution to global climate change, and, therefore, would be less than significant.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

Impacts to Project from Climate Change

Impact CC-2:	The environmental impacts of climate change would not significantly impact the project.

Impact Analysis

As discussed in the Environmental Setting, climate change could result in the following environmental impacts in California:

- Reduced precipitation;
- Changes to precipitation and runoff patterns;
- Reduced snowfall (precipitation occurring as rain instead of snow);
- Earlier snowmelt;
- Decreased snowpack;
- Increased agricultural demand for water;
- Intrusion of seawater into coastal aquifers;
- Increased agricultural growing season;
- Increased growth rates of weeds, insect pests and pathogens;
- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events; and,
- Expansion of the range and increased frequency of pest outbreaks.

Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-laying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location. Therefore, this analysis examines only the following potential impacts:

- Inundation of low-lying coastal areas by sea level rise;
- Increased incidents and severity of wildfire events.

Impacts to the project resulting in reduced water availability is speculative at this time and no further discussion is necessary.

Inundation by Sea Level Rise

The Pacific Institute, with support from the California Energy Commission, California Department of Transportation, and the Ocean Protection Council, prepared maps showing the potential extent of

coastal flooding and erosion under one scenario that involved a sea level rise of 1.4 meters (55 inches). This scenario represents the medium to high greenhouse gas emissions scenarios, but doesn't reflect the worst-case that could occur. The scenario estimates that the 1.4 meter sea-level rise would occur by 2100 (CEC 2009).

The project site can be found on the 'Long Beach' and 'Torrance' maps. As shown on the impact maps, only the southeastern most segment of the proposed pipeline may be adversely affected by a sea level rise. That arm would deliver recycled Title 22 water to Valero Refinery and the Air Products Plant, which are also shown to be affected by a 1.4 meter sea-level rise. The Valero Refinery and Air Products Plant are also shown as potentially affected by a 1.4 meter sea-level rise. As stated in Impacts of Sea-Level Rise on the California Coast, the maps were created to quantify risk over a large geographic area. As such, they should not be used to assess actual impacts on specific locations. Therefore, there is no certainty for potential inundation/erosion impacts to the proposed project area.

As stated above, the sea-level rise scenario is expected occur by 2100, long after the expected life of this project. Although graphically shown in an area of potential risk, there is little certainty that inundation/erosion would directly affect the lower portion of the project area, as discussed above. In addition, the project is itself reducing the long-term generation of GHG associated with treatment and transport of potable water by supplying existing recycled water to existing water users. Therefore, the project, if implemented, would assist in the reduction of GHGs necessary to avoid adverse climate change impacts, including those from sea-level rise.

Increased Incidents and Severity of Wwildfire Events.
The project, once constructed, will be entirely located underground. Therefore, any increase in incidents and severity of wildfire events would not affect the project.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is required.

Level of Significance After Mitigation

Less than significant impact.

SECTION 4: CUMULATIVE IMPACT ANALYSIS

4.1 - CEQA Requirements

Cumulative impacts refer to the combined effect of project impacts with the impacts of other past, present, and reasonably foreseeable future projects. As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence attributable to the project alone. As stated in CEQA, Title 14, Section 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the State CEQA Guidelines:

"Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.

a. The individual effects may be changes resulting from a single project or a number of separate projects.

b. "The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probably future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, §15355.)

In addition, as stated in CEQA Guidelines, it should be noted that:

> "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." (CCR, Title 14, Division 6, Chapter 3, Section 15064[T][5]).

4.2 - Cumulative Impact Setting

Cumulative impact discussions for each issue area are provided below. As previously stated, and as set forth in the CEQA Guidelines, related projects consist of "closely related past, present, and reasonably foreseeable probable future projects that would likely result in similar impacts and are located in the same geographic area." (CCR, Title 14, Division 6, Chapter 3, Section 15355.)

LADWP has identified the following related projects that might contribute to cumulative impacts. Table 4-1 lists the related projects.

Table 4-1: Cumulative Projects

#	Project Name	Location	Description
1	Distribution Center and Warehouse	Wilmington	135,000 square-foot (sq ft) distribution center and warehouse on 240,000 sq ft lot with 47 parking spaces at 755 East L Street, (at McFarland Avenue) in Wilmington.
2	Dana Strand Public Housing Redevelopment Project	Wilmington	The existing facility is being torn down and redeveloped to provide a 116-unit affordable housing complex with multifamily rental units, senior units, and affordable homes for sale. The plans also include a day care center, lifelong learning center, parks, and landscaped open space.
3	Vermont Christian School Expansion	Wilmington	Private school expansion to accommodate 72 additional students, for a total of 222 students.
4	Boulevards at South Bay	Carson	Mixed use development of a 157-acre landfill property and 11-acre property north of Del Amo Boulevard that includes 1,150 residential units, 400 rental units, commercial recreation and entertainment, neighborhood commercial, restraint, hotel and regional commercial uses.
5	ProLogis: 2211-2241 / 2307 E. Carson Street	Carson	ProLogis is proposing to construct a 273,323 sq ft, multi-tenant, warehouse building. The proposed project provides 213 vehicle parking spaces, 51 truck parking spaces, and 58 dock-high loading bays to receive and deliver products.
6	Samoan Congregational Christian Church of South Los Angeles	Carson	Approved development plan for a new 20,000 sq ft church. Second-floor to be constructed at a later date.
7	South Bay Pavilion	Carson	Approved development plan to demolish portion of mall building and construct new retail space and Target. Among the new tenants include Chili's, Radio Shack, Jamba Juice, Wing Stop, Big 5, Coffee Bean, Panda Express, T-Mobile, 24 Hour Fitness, and Washington Mutual Bank.
8	21916 Moneta Avenue	Carson	Place of religious worship
9	418 W 223rd Street	Carson	Modification to convert a 6-unit condominium project into apartment units. The development includes 3 detached buildings with 2 units in each building. The modification will modify or delete any condition of approval that specifically addresses condominium units.
10	641 W Sepulveda Boulevard	Carson	Installation of soil vapor extraction and ozone sparge remediation system to remediate residual soil and groundwater contamination.
11	339-341 W Carson Street	Carson	PC Warehouse - Open an existing wall - 12' x 7'. Reference DOR 967-06 - project changed. Unit #1 to use as showroom for PCs and Unit #2 to use as service area for PC repairs.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
12	111-117 E 223rd Street	Carson	Proposed Monopalm, Unmanned Telecommunication facility to be located in the parking lot next to a market.
13	744 E Dominguez Street	Carson	Exterior and interior improvements - see attached scope of work.
14	708-724 E Carson Street	Carson	2-lot ground subdivision and 7-lot airspace subdivision - City Center Project.
15	23701 S Main Street	Carson	Medical office building - provide accessible path of travel, provide accessible ramp and provide handicapped striped parking.
16	135 W 223rd Street	Carson	Proposed to construct a new living unit (apartment - 1,214 sq ft) and 2 (1-car) carports to an existing 3-unit apartment.
17	300 W Carson Street	Carson	Install Phase II EVR equipment and ISD Upgrade.
18	21136 S Wilmington Avenue	Carson	Construction of a 60-ft tall unmanned wireless telecommunication facility (monobroadleaf). Permit to exceed height limit.
19	200 E Sepulveda Boulevard	Carson	Installation of new Healy clean air separator for Phase II EVR upgrade installing Healy EVR II on four dispensers with two hoses and veered root ISD components on four dispensers. Relocating UST vents.
20	323 E 220th Street	Carson	Build 2 new homes and existing to be remodeled.
21	20720 S Leapwood Avenue	Carson	Religious purpose within the meaning of section 501 c(B) IRC Shared Suites A and B.
22	17455 S Central Avenue	Carson	Proposed to install Phase II vapor processing system (carbon canister)with perforated, 2-hr fire rated enclosure.
23	2724 Van Buren Street	Carson	Admin. DOR to remove partial building from 15x24 1/2 to 15 x 13.
24	20411 S Susana Road	Carson	Proposed for parking for church use at a multi-unit retail center.
25	451 E 223rd Street	Carson	Variance for existing and proposed heights of parking structure, church building, and steeple.
26	20927 S Jamison Avenue	Carson	Proposed 2nd Dwelling.
27	451 E 223rd Street	Carson	Construct a parking garage for church use. Parking garage is permitted with a CUP with the concurrent text amendment.
28	2000 E Carson Street	Carson	Modernization of an approximately 294,590 sq ft concrete tilt up industrial building on an approximately 13 acres. The project will entail building facade and site upgrades, and new offices. Project is described in further detail in the submittal binder in which is application has been included.
29	635 E Realty Street	Carson	Admin. DOR for proposed bonus room, family room, and exercise area.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
30	24100 S Avalon Boulevard	Carson	Construction of unmanned wireless telecommunications facility.
31	20630 S Figueroa Street	Carson	Proposed development is a mixed use business park including 11 multi-tenant buildings at grade level, with mezzanines throughout. Project includes onsite circulation, parking, and landscaping.
32	20301 S Main Street	Carson	A residential apartment community proposed to be built in three phases, in 3 buildings of 61, 62 and 64 units for a total of 197 units. Parking will be in an on grade podium. Community and pool amenities provided.
33	2000 E Sepulveda Boulevard	Carson	One 60,000-barrel, petroleum storage tank to meet E10 requirement.
34	20301 S Main Street	Carson	Proposed residential apartment community, proposed in 3 phases, 3 buildings 61, 62 and 64 units total of 197 units.
35	2664 E Harrison Street	Carson	Admin DOR - Rear yard addition 361.95 sq ft on 25’ wide lot.
36	357 E Carson Street	Carson	Installation of a new AT&T Wireless Telecommunication facility to consist of nine antennas mounted behind screening walls that will be built to match existing antennas. Equipment cabinets to be located inside a suite on the second floor to consist of four cabinets plus ancillary equipment. New access hatch to roof shall be installed.
37	1606 E Carson Street	Carson	Aluminum metal canopies.
38	18010 S Figueroa Street	Carson	Proposed development will consist of eight industrial condominium units of approximately 62,500 sq ft of office, warehouse, and light manufacturing space situated on approximately 125,017 sq ft of land.
39	23806 S Main Street	Carson	Two, 2’8” x 10’ electronic message boards installed on existing freestanding sign at location.
40	334 W 214th Street	Carson	2,666 sq ft addition to existing 1,056 sq ft single-family residence on a RM-12-D zoned lot.
41	708-724 E Carson Street	Carson	Also 21802 Avalon Boulevard. - Lot Line Adjustment - Mixed use - Residential/Retail.
42	17627 S Central Avenue	Carson	Relocation of an existing church building located at 21521 S. Avalon to a vacant parcel located at 17627 S. Central Avenue. Proposed use is for a private school. Elementary and high school students.
43	21739-21745 Dolores Street	Carson	Remove existing housing and build new church.
44	357 E Carson Street	Carson	Installation of a new wireless communications facility consisting of six (6) roofs mounted panel antennas, an air-conditioning unit, one (1) GPS antenna, and associated equipment cabinets and power and telephone panels mounted inside the office building.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
45	20713 S Jamison Avenue	Carson	Proposed new 1205 sq ft two-story addition including: new family room and laundry room at 1st floor. New master bedroom with master bathroom, and 3/4 bathroom, another bedroom. See plans for existing home improvements.
46	1210-1250 E 223rd Street	Carson	Office and church use on Sundays, after hours and weekend church activities such as bible studies, worship meetings. Church name: "Word for the World California" 937 W. 223rd Street., Torrance, CA 90502.
47	2160 E Sepulveda Boulevard	Carson	Installation of 12' x 60' pre-fabricated single story office building.
48	21217 Bolsa Street	Carson	Propose to add 2nd story to existing 1-story sfd. 863 sq ft addition on less than 50=ft wide lot.
49	440 E Sepulveda Boulevard	Carson	Office building for 10,661 sq ft Zoned: MU-SB.
50	19404 S Tillman Avenue	Carson	Less than required garage setback. Applicant proposed to move garage door from interior (side-property line) facing, to front-facing (street) resulting in a 20-foot setback. This proposal was part of a 1,900 sq ft 2-story addition, which was approved by Planning and B/S months ago, and the work has been completed. What prompted the investigation was the request for a permit to complete some finishing construction work on the driveway, wherein the (setback) error was discovered.
51	643 E 223rd Street	Carson	40 detached condos CN-D to CG-MUR-D.
52	22010 S Wilmington Avenue	Carson	Proposed new office building; lot line adjustment required for new construction.
53	101-155 E Lomita Boulevard	Carson	Proposed 4 story mixed use 123,340 sq ft building on a vacant piece of property within an existing retail development. First floor - mixed use retail (16530 sq ft) storage and a storage admin. office. Second floor - storage and manager's dwelling unit (1,320 sq ft). Third and fourth floors all storage. Site access will be via Lomita Boulevard and Main Street.
54	1881 E Del Amo Boulevard	Carson	Construction of Carl's Jr. Restaurant with a drive-thru.
55	22100 Dolores Street	Carson	TTM, DOR, CUP to subdivide and construct a 38-unit condo project in RM-12-D.
56	2211 - 2241 E Carson Street	Carson	Constructing 270,764 sq ft building on parcel 1 and parcel 2 will be used for parking and leased out.
57	616 E Carson Street	Carson	Proposed remodel and expansion of the existing center (Ralphs). Addition of 23, 405 sq ft new in-line shop spaces and 14,390 sq ft pharmacy building 425 stalls for parking.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
58	20630 S Figueroa Street	Carson	Proposed development is a mixed use business park, including 11 multi-tenant buildings at grade level with mezzanines throughout. Project includes onsite circulation, parking, and landscaping.
59	1161 E Walnut Street	Carson	Conditional use permit for shared parking - proposed church use in industrial building.
60	1135 E Janis Street	Carson	Conditional use permit for shared parking - proposed church use in industrial building.
61	21324 S Perry Street	Carson	Remodel an existing 1256 1-story, sfr adding 395 sq ft first floor and constructing 1,006 sq ft 2nd floor, including a new 2-car garage...Also, legalize existing 725 sq ft garage conversion in rear of property (CUP 701-08).
62	22606 Figueroa Street and 201 E 220th Street	Carson	Relocate sfd at 22606 Figueroa Street to new site at 201 E 220 Street.
63	755 E Victoria Street	Carson	Proposed addition of a bay to an existing fire station.
64	22010 S Wilmington Avenue	Carson	Proposed demo of existing office building - construct a new 25,500 sq ft 2 story office building with subterranean parking.
65	19101 S Wilmington Avenue	Carson	Unmanned telecommunications flag pole under John Anderson Park.
66	274 E 236th Street	Carson	2nd floor addition to single family development.
67	214 E 220th Street.	Carson	2 car five unit multi-family residential with (5) attached garages.
68	274 E 236th Street	Carson	Second floor addition to existing 1988 sq ft single-family dwelling.
69	17120 S Figueroa Street	Carson	Facility used as overnight storage for 50 empty trucks and 40’ trailers/containers.
70	400 W 214th Street	Carson	Multi-family residential 3 units.
71	22137 Dolores Street	Carson	Proposed 3,370 sq ft 1st and 2nd floor new construction for single-family dwelling 2 car garage provided middle unit.
72	214 E 220th Street	Carson	Five unit multi-family residential with five attached 2 car garages.
73	2116 E 220th Street	Carson	Proposed building #219 a 153,725 sq ft concrete tilt-up industrial building on a 340,304 sq ft.
74	17501 S Nauset Court	Carson	Proposed family room addition with bath 20’ x 25’= 50 sq ft rear yard.
75	19101 S Wilmington Avenue	Carson	Cell site - unmanned telecommunications - flag pole under John Anderson Park.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
76	19101 S Broadway	Carson	Proposed project will be a 94,711 sq ft self storage facility. There will be 5 new buildings ranging from one to two stories. There will be a manager's office/customer service at site entry off Broadway Street. The project will be designed in a Spanish theme utilizing earth toned stucco colors, clay tile roofs at key blogs.
77	18903 S Anelo Avenue	Carson	Request for authorization to construct a 50-foot high telecommunication facility disguised as a palm tree.
78	615 E University Drive	Carson	Installation of a 36-foot high telecom facility disguised as a light pole. two CUPs required: one for use and other for 20% height increase.
79	23813 S Avalon Boulevard.	Carson	Proposed storage and ADA toilet addition to existing drive thru restaurant. Existing 2 story 1870 sq ft structure, proposed 1 story 254 sq ft addition. Also install new fixtures and finishes at dining area on interior; new doors on exterior.
80	1543 E 220th Street	Carson	Add 780 sq ft for living space (Master bedroom, 1 bedroom, 1 bathroom and den). Minor remodeling on existing part of home. Garage, kitchen, laundry room, living room and one bedroom and 1 bathroom.
81	770 E Del Amo Boulevard	Carson	Construction of Regional Transit Center facility that includes central covered island waiting area that provides shelter from sun and rain as well lighted and safe, concrete bus pad and a small building housing a supervisor's office and driver's rest area.
82	101-155 E Lomita Boulevard	Carson	To separate shopping center parcel to accommodate proposed self storage parcel.
83	20809-208091/2 Margaret Street	Carson	Existing 2nd dwelling unit - duplex - RS zone.
84	407 E Carson Street	Carson	Victoria Carson ; 98 residential condo units with a mix of single story flats, town homes and live-work units in a mix of two, three, and four bedroom plans.
85	401-437 E Carson Street	Carson	Victoria Carson Homes; 98 residential condominium units with a mix of single story flats, town homes and live-work units in a mix of two, three, and four bedroom plans.
86	708-724 E Carson Street	Carson	Carson City Center project - DOR Design Review.
87	708-724 E Carson Street	Carson	Carson City Center project - condominium units.
88	200 E Gardena Boulevard	Carson	CAML Private Mobilehome Park closure to utilize site for industrial use and expansion of SOS Metals and Trans World Alloys.
89	21440 S Main Street	Carson	Proposed cell site "light pole."

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
90	18600 S Figueroa Street.	Carson	LLA 18600 S. Figueroa Street, 325 Griffith Avenue, 18625 and 18703 Broadway
91	2542 E Madison Street	Carson	Lot Line Adjustment 2 - 25 ft wide lots into 1 - 50 ft wide lot.
92	22030 S Main Street	Carson	Request to construct a 1,800 sq ft, two-story addition to an existing 2,568 sq ft, two-story commercial building and to construct two, detached single family dwelling units with attached garages at 2,700 and 2,516 sq ft each.
93	22030 S Main Street	Carson	2 units in RS Zone.
94	18903 S Anelo Avenue	Carson	Request for authorization to construct a 50-foot high telecommunication facility disguised as a palm tree.
95	440 E Sepulveda Boulevard	Carson	8 Residential Condominium units in two buildings (4 units per building) Townhome style.
96	108-110-150-152 Walnut Street	Carson	2 building office/plex/business park. Land division intended to subdivide one parcel project into two parcels for marketability objective only. Potential use will remain the same as existing.
97	22404 S Avalon Boulevard	Carson	Proposed Installation of a 60" high monopalm.
98	Various Properties	Carson	"Carson Marketplace" - Properties North of Del Amo Boulevard. between Main Street and 405 Freeway., south of L.A. City Dept. of Water and Power
99	21252 S Alameda Street	Carson	1,361.5 sq ft truck service and oil change/lube facility on 8,100 sq ft vacant lot zoned ML-D.
100	21252 S Alameda Street	Carson	Truck Service oil change/lube facility.
101	616 E Carson Street	Carson	SWC of Carson Street and Avalon Boulevard. Proposed renovation and expansion of an existing Ralph's supermarket shopping center.
102	16700 S Avalon Boulevard	Carson	Development of Aquatic Facility that consists of two outdoor swimming pools for recreational, instructional, and competitive swimming. The project also includes construction of buildings for office, mechanical room, locker room, and restroom use.
103	2659 Monroe Street	Carson	Proposed to demo. existing sfd and construct 1st floor 797 sq ft
104	Various Properties	Carson	N/W Corner of Broadway and Griffith Street Proposed to construct (5) small concrete tilt-up buildings for office/warehouse.
105	17900 S 17900 S. Central Avenue	Carson	To collocate wireless facility on existing 235-ft high radio tower in the CG/RPA 4 (C 60 and 85 ft high) zone (w/ 10' x 16' lease area).
106	529 E Realty Street	Carson	Proposed Conditional Use Permit for 2 units in RS zone.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
107	17006 S Figueroa Street	Carson	Preliminary plot plan review No. 1275-07 proposed to demolish part of the rear building to create 9 dock high loading doors for truck parking facility.
108	17911--,17915 Mackeson Court	Carson	Proposed new construction of two, 2,192 sq ft 26-foot high 2-story single family homes, each with a 440 sq ft 2 car garage on two separate <50'-wide RS lots.
109	17701,17707 Exa Ct	Carson	Proposed to construct 2 new 2,116 sq ft 26 foot high 2-story single family homes, each with 480 sq ft 2-car garage on 2 separate < 50 ft wide RS lot.
110	17415,17419,17423 Wellfleet Avenue	Carson	Proposed new construction of three new approximately 2,000 sq ft 26 foot high, single family homes, each with a 2-car garage (440 sq ft) on 3 separate < 50 ft wide RS lots.
111	615 E University Drive	Carson	Installation of a 36-foot high telecom facility disguised as a light pole. Two CUPs required: one for use and other for 20% height increase.
112	19200 S Main Street	Carson	Remove and replace with 3 units modular office, raise concrete. patio and re-install 1,200 sq ft.
113	316 W Gardena Boulevard	Carson	New one story conc. block building 20” high 35”x180” long divided into 6 bays for auto mechanic use.
114	21320 S Perry Street	Carson	Add second floor 3 bed. 2 bath to existing house.
115	2250 E 220th Street.	Carson	102,000 sq ft concrete tilt-up industrial boulevard on a 5.16 acre site.
116	63024007 Broad Avenue E Lincoln Street	Carson	Build seven new homes on seven lots.
117	21205 S Main Street	Carson	New concrete tilt-up building warehouse containing 3 story office, warehouse and 7 single body truck loading docks.
118	2576 E 218th Place	Carson	2-story residential unit to a property with 1 existing unit for a total of 2 units.
119	22328 Figueroa Street	Carson	Proposed 3,423 sq ft, 2 story SFD with attached 408 garage.
120	21620 Vera Street	Carson	Condition use permit for 2nd unit in RM zone.
121	22328 Figueroa Street	Carson	New 3,423 sq ft SFR w/ attached 408 sq ft garage on RM-25-D.
122	22328 S Figueroa Street	Carson	New two story second dwelling unit w/two car attached garage and new two car carport.
123	22235 Figueroa Street	Carson	New 2,554 sq ft gas station building with convenience store.
124	22235 S Figueroa Street	Carson	Automobile Service Station w/ convenience store, 8 fueling dispensers, and automated carwash.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
125	19707 S Central Avenue	Carson	Modular office building for classroom.
126	1059 E Bedmar Street	Carson	Ambulance dispatch center
127	21219 Figueroa Street	Carson	New 3-story office building 11,437 sq ft total on 33,260 sq ft (.74 acre) lot in the ML-D zone and within Redevelopment Project Area No. 1.
128	23007 S Delford Avenue	Carson	New 2,130 sq ft 2-story dwelling.
129	1421 E Del Amo Boulevard.	Carson	60’ foot monopine wireless facility.
130	22030 S Main Street	Carson	2,360 sq ft addition to a community building; 2 SFD (2,700 sq ft and 2,400 sq ft); CUP No. 661-07 for multiple family homes in RS Zones; Zone Change No. 155-07 to move CG zone boundary west and reduce the RS zone; GP Amendment for zone consistency.
131	1361 E Carson Street	Carson	New 6,911 sq ft, two-story church building on 18,071 sq ft (.41 acre) lot in the CG-D zone and within Redevelopment Project Area No. 4.
132	2211 - 2241/2307 E Carson Street	Carson	Remove and replace industrial building w/ 273,323 sq ft multi-distribution facility.
133	356 E 220th Street	Carson	CUP for church in RM-12-D Zone - Interior renovation of an existing church - Church in RM zone, required CUP.
134	700 E Gardena Boulevard.	Carson	Proposed wireless facility: antennas to be mounted on existing SCE tower within Heming Way park.
135	16810 Avalon Boulevard	Carson	WTF on existing SCE lattice tower in Hemingway Park.
136	281 E 215th Street	Carson	Approximate 2,100 sq ft 1st and 2nd floor addition to existing 1,250 sq ft SFR on a 45-foot wide, 6,075 sq ft (.43 acre) lot in the RS zone.
137	20906 S Margaret Street	Carson	Proposed 2nd floor addition to existing 1,047 square-foot one-story home with an existing two-car garage on a 40 foot wide lot.
138	23601 S Main Street	Carson	Proposed unmanned wireless telecommunication facility disguised to resemble a eucalyptus tree (36” high).
139	23601 S Main Street	Carson	CUP for 36-foot mono-evc.
140	20850 Leapwood Avenue	Carson	Shared parking CUP for church use in multi-tenant building.
141	441 W Victoria Street	Carson	7,900 sq ft retail and restaurant.
142	451 E 223rd Street	Carson	Judson Baptist Church: 1,170 sq ft second floor office addition.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
143	249 E Gardena Boulevard	Carson	40,066 sq ft conc. tilt-up building with mezzanine
144	2640 E Del Amo Boulevard	Carson	Indoor parking of impounded vehicles; Operation to be 24/7; parking lot redesign; Vehicle hand-washing station.
145	17828 S Main Street	Carson	New one-story, 1,200 sq ft office building, and vehicle storage (paving) in the rear of the site.
146	23410 Catskill Avenue	Carson	58’ wireless telecomm. facility, 6 panel antennas mounted on new light pole. (city park).
147	23410 S Catskill Avenue	Carson	58" high wireless telecommunication facility on light fixture located at Scott Park.
148	501 E Albertoni Street	Carson	Four-building retail/restaurant center w/ outdoor dining.
149	501 E Albertoni Street	Carson	Proposed 154,391 sq ft 3 new commercial retail buildings including restaurants and shop areas w/t outdoor patio dining. Shared Parking Agreement.
150	22005-22015 S Main Street	Carson	New construction for a retail office shopping center with restaurant.
151	19646 S Figueroa Street	Carson	2-story addition to an existing 2-story office building 1-story tire storage area; and sign program.
152	1421 E Del Amo Boulevard.	Carson	Proposed wireless facility go’ height mono-pine.
153	1421 E Del Amo Boulevard	Carson	60” high mono-pole cellular telecommunications facility.
154	520 W Carson Street	Carson	5,100 sq ft addition to an existing church.
155	414 W 164th Street	Carson	Warehouse building: 7,595 sq ft total, incl. 6,780 sq ft warehouse and 817 sq ft office.
156	333 W Carson Street	Carson	New 3,181 sq ft retail shopping center.
157	1881 E Del Amo Boulevard.	Carson	Proposed to construct new 7-Eleven convenience store fueling dispenser w/ canopy.
158	21227-21239 S Figueroa Street	Carson	Proposed new 32 unit apartment for low-income families.
159	21227 S Figueroa Street	Carson	32-unit affordable housing development.
160	17680 S Figueroa Street	Carson	100,000 sq ft warehouse building.
161	16925 S Main Street	Carson	Monopalm, wireless facility - 50 feet high.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
162	Consolidated Slip Restoration Project	Port of Los Angeles	Remediation of contaminated sediment at Consolidated Slip at Port of Los Angeles. Remediation may include capping sediment or removal/disposal to an appropriate facility. Work includes capping and/or treatment of approximately 30,000 cubic yards of contaminated sediments.
163	Southern California International Gateway Project (SCIG)	Port of Los Angeles	Construction and operation of a 157-acre dock rail yard intermodal container transfer facility (ICTF) and various associated components, including the relocation of an existing operation.
164	"C" Street/Figueroa Street Interchange	Port of Los Angeles	The "C" Street/ Figueroa Street interchange would be redesigned to include an elevated ramp from Harry Bridges Boulevard to the I-110 Freeway, over John S. Gibson Blvd. There would be a minimum 15-foot clearance for vehicles traveling on John S. Gibson Boulevard. An additional extension would connect from Figueroa Street to the new elevated ramp, over Harry Bridges Boulevard.
165	Union Pacific Railroad ICTF Modernization Project	Port of Los Angeles	UP proposal to modernize existing intermodal yard four miles from the Port.
166	Edison Avenue Closure	Port of Los Angeles	Close a short section of Edison Avenue between 9th and Pier B Streets to improve public safety and traffic by rerouting cars and trucks away from three rail lines that cross Edison at Pier B Street.
167	Harbor City Child Development Center	Harbor City	Conditional use permit to open 50-student pre-school at existing church building (25000 South Normandie Avenue, Harbor City, at Lomita Boulevard).
168	Kaiser Permanente South Bay Master Plan	Harbor City	Construct 303,000 sq ft medical office building 42,500 sq ft records center/office/warehouse, with 260 hospital beds. 25825 Vermont Street, Harbor City (at Pacific Coast Highway).
169	Drive-through restaurant	Harbor City	Construct 2,448 sq ft fast food restaurant with drive-through. 1608 Pacific Coast Highway, Harbor City (at President Avenue).
170	Sepulveda Industrial Park	Torrance	Construct 154,105 sq ft industrial park (6 lots). Sepulveda Industrial Park (TT65665) 1309 Sepulveda Boulevard, Torrance (near Normandie Avenue).
171	I-710 (Long Beach Freeway) Major Corridor Study	Alameda Corridor	Develop multi-modal, timely, cost-effective transportation solutions to traffic congestion and other mobility problems along approximately 18 miles of I-710, between the San Pedro Bay ports and SR-60.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
172	1313 West Sepulveda Boulevard	Harbor Gateway Community Plan Area	The request is for a 65-ft high building, having 4-levels of residential over 2 SBOVR-grade levels of parking. The residential development will contain 256 residential rental units with 512 residential and 64 guest parking spaces (2.25 per unit). The GPA is from heavy manufacturing to community commercial the zone change is from M3-1VL to C2-2. Height district change from 1VL to 2. Site plan review for 256 residential units. ZAA to permit reduced variable side yards between 2.5 ft and 5 ft westerly and southerly in lieu of the 9 ft side yard required in the C2-2 zone.
173	14000 South Vermont Avenue	Harbor Gateway Community Plan Area	Pursuant to 12.24W49 - CUW to permit a monopalm.
174	425 West Laconia Boulevard	Harbor Gateway Community Plan Area	A Conditional Use Permit for an unmanned wireless telecommunications facility (monpine).
175	827 North Fries Avenue	Wilmington - Harbor City Community Plan Area	Two-story, four unit apartment.
176	2401 East Pier A Way	Wilmington - Harbor City Community Plan Area	Approval in concept for the installation of 6 radiation portal monitors and erection of concrete shielding shed.
177	1058 North Avalon Boulevard	Wilmington - Harbor City Community Plan Area	Plan approval to remodel existing service station building including expanding convenience store to 1,220 sq ft into existing auto bays.
178	2402 East Anaheim Street	Wilmington - Harbor City Community Plan Area	Approval-In-Concept for the installation of a diesel generator set to supply emergency power to the refinery data center and emergency operations center in the event of a power loss from LADWP.
179	802 West Pacific Coast Highway	Wilmington - Harbor City Community Plan Area	Conditional use for an auto repair within 300 feet of residential zone.
180	1717 West 255th Street	Wilmington - Harbor City Community Plan Area	A conditional use to allow the development of a 3-story building with classrooms, offices, gym in conjunction with an existing K-8 private school and church.

Table 4-1 (cont.): Cumulative Projects

#	Project Name	Location	Description
181	26404 South Vermont Avenue	Wilmington - Harbor City Community Plan Area	Tentative tract for the construction of 20-residential condominiums on 0.96 acres of land.
182	2401 East Pier A Way	Wilmington - Harbor City Community Plan Area	Approval-In-Concept for the installation of 6 radiation portal monitors and erection of concrete shielding shed.

For the analysis of cumulative impacts, these related projects are viewed collectively in this Draft EIR as comprising the grouping of past, present, and reasonably foreseeable future projects against which the project's contribution to cumulative impacts is assessed.

4.3 - Cumulative Impact Analysis

4.3.1 - Air Quality

Related projects within the greater cumulative project are listed above, would have no physical overlap with the proposed project; however, they could contribute to the same air basin impacts. In regards to analyzing cumulative impacts associated with air quality consistency with the AQMP is, in essence, a cumulative impacts assessment. Because the AQMP is an adopted planning document that describes and evaluates the regional cumulative impact of pollutants in the Basin, consistency with the AQMP fulfills the requirements of a cumulative impacts assessment for regional and localized air pollutants.

According to the SCAQMD (1993), a project is consistent with the AQMP if a project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (SCAQMD 1993, Page 12-3). The project's potential to contribute to an air quality standard violation is assessed by the LST and CO analysis.

The next criterion is compliance with the control measures in the current AQMP. The 2007 AQMP aims to attain the national $PM_{2.5}$ and 8-hour ozone standards by 2015 and 2024, respectively. This is done by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that $PM_{2.5}$ is formed primarily secondarily. Therefore, instead of reducing fugitive dust, the strategy for reducing $PM_{2.5}$ focuses on reducing precursor emissions of SOx, directly-emitted $PM_{2.5}$, NO_x, and VOC. The Final 2007 AQMP control measures consist of four components: 1) the SCAQMD's Stationary and Mobile Source Control Measures; 2) the ARB's Proposed State Strategy; 3) the SCAQMD Staff's

Proposed Policy Options to Supplement the ARB's Control Strategy; and 4) Regional Transportation Strategy and Control Measures provided by SCAG.

Although there is no known guidance that correlates AQMP consistency with the SCAQMD regional thresholds, it is common to use the SCAQMD thresholds in assessing AQMP compliance. The

During construction of the proposed project, the SCAQMD regional emission thresholds will be exceeded for NO_x emissions. The single largest source of NO_x is the excavation and shoring phase of construction. Specifically, the off-road diesel activities for excavation and shoring would contribute 75.21 lbs of the total 90.97 lbs of NO_x per day. Therefore, without mitigation, the short-term emissions of NO_x are considered to have a potentially significant cumulative impact. The implementation of Mitigation Measures MM AQ-2a, AQ-2b, AQ-3a, and AQ-3b would reduce this cumulative impact to less than significant. No other cumulative impacts associated with air quality would result from the project.

4.3.2 - Cultural Resources

The proposed project includes the construction of an underground pipeline within the existing public rights-of-way for streets, and would not affect historic structures located adjacent to the alignment. Because no impacts would occur to historical resources, the proposed project would not contribute to cumulative impacts associated with historical resources.

Potential impacts to archeological resources were identified in Impact Analysis CR-2 in Section 3.2.4 of this Draft EIR, which indicated that cultural areas with a high sensitivity for buried cultural resources occur within the project area. The construction associated with the proposed project would result in potential impacts if undiscovered resources are encountered. Impacts to archeological resources, during construction, when combined with the potential impacts to such resources from other development projects would result in a significant cumulative impact. However, mitigation measures MM CR-2a identified in Section 3.2.4 would reduce project impacts associated with archeological resources to less than significant, thereby reducing the corresponding cumulative impact to less than significant.

As was thoroughly discussed in Impact Analysis CR-3 in Section 3.2.4, paleontological resource have been previously discovered in the project vicinity, and because certain project area soils have the potential to contain such resources, construction-related earth-moving activities associated with the proposed project may impact undiscovered paleontological resources. Impacts to paleontological resources could occur during subsurface construction, if undiscovered resources are encountered. These impacts would be potentially significant when considered in conjunction with other development projects in the vicinity. However, the implementation of mitigation measures MM CR-3a, CR-3c and CR-d would ensure that these impacts would be less than significant.

No other cumulative impacts associated with cultural resources would occur.

4.3.3 - Hazards and Hazardous Materials

The proposed project would involve the routine short-term use of hazardous materials on the project side during construction activities. However, the short-term activity would be conducted in compliance with federal, State, and local regulations. As other development projects utilizing hazardous waste would be required to comply with such regulations, the cumulative impact associated with this issue would be less than significant.

Hazardous materials would be used during construction of the proposed project, and contaminated soils would be removed from the site for disposal at an offsite facility. The probability of the release of hazardous materials during accident or upset conditions is low, and the concentrations of the hazardous materials would not present an unusual risk to nearby schools. Additionally, the project would be required to comply with applicable federal, State, and local regulations relating to the use and transport of hazardous waste. As other development projects utilizing and/or transporting hazardous waste would be required to comply with such regulations, the cumulative impact associated with this issue would be less than significant.

During construction of the proposed project, limited amounts hazardous waste associated with construction would be utilized within one quarter mile of existing schools throughout the pipeline alignment. The project, along with other cumulative projects, would be required to comply with federal, State, and local regulations relating to hazardous waste which would ensure that the cumulative impact associated with this issue would be less than significant.

No other cumulative impacts associated with hazardous waste would occur.

4.3.4 - Noise

Implementation of the proposed project would require the short-term use of heavy equipment within the construction area, which would result in the exposure of persons to noise levels in excess of the standards established in the local noise ordinances. As was discussed in section 3.4.5, ambient noise in the project area already exceeds 75 dBA in the daytime, and 60 dBA in the night time. Based on the noise modeling conducted in Noise Study prepared for the project, it is estimated that the combined noise levels will be at least 26 dB higher than existing ambient levels at all of the measurement locations along the proposed pipeline route. The proposed project is expected to exceed the thresholds for increases to ambient noise of 10 dB for daytime construction and 5 dB for nighttime construction. The impact analysis for Impact NOI-1 and NOI-4 identified that the contribution of construction noise would contribute a significant level of noise to the exceedance of the daytime and night time noise standards, which are considered significant cumulative impacts. As no mitigation is available to reduce these impacts to less than significant, this impact is regarded as a significant and unavoidable cumulative impact.

The use of heavy equipment during the construction of the proposed project would produce vibrations that would be exceeded at existing residential buildings within 79 feet of the equipment. The

exceedance of these thresholds would result in a potentially significant direct impact associated with vibrations. However, because no other significant sources of vibration are anticipated in the project area, and because the vibration caused by the construction of the proposed project would be temporary and intermittent, no significant cumulative impact associated with vibration would occur.

The proposed project's distance to nearby airports, and the expected noise level from those facilities, aircraft noise would not result in excessive noise at the project site, and therefore, cumulative impacts would be less than significant. Therefore, the proposed project would result in a less than significant cumulative impact to airport noise levels. There are no private airstrips in the project vicinity and therefore, the proposed project would not contribute to cumulative impacts to private airstrip noise levels.

4.3.5 - Transportation and Traffic

In the existing condition, roadways along the pipeline route are all operate at acceptable levels of service, with the exception of three segments, all along Pacific Coast Highway. As discussed thoroughly in the impact analysis for Impact TRAN-1 and Impact TRAN-2, lane closures anticipated during the construction of the proposed project would result in congestion along affected roadway segments and intersections. The lane closures associated with the construction would temporarily exceed the level of service for five arterial roadways within the project area, and several smaller area roadways. Exceeding the LOS established for these roadways would result in a significant cumulative impact associated with this issue. Mitigation measures MM TRAN-1a through MM TRAN-1g were identified to reduce the severity of this impact Additionally, LADWP will be required to prepare worksite traffic control, and detour plans to best reduce traffic impacts during construction activities. However, even with the implementation of the mitigation measures identified above and the preparation of worksite traffic control and detour plans, this cumulative impact would be significant and unavoidable during various construction phases, albeit for relatively short time periods (several weeks to a few months) at some or all of the work areas.

The operation of an underground pipeline would not affect traffic conditions within the project area; therefore, the project would not result in any cumulative impacts to traffic within the project area after the completion of construction.

No other roadway construction projects are proposed along the pipeline route, which would cause the project to contribute to a significant cumulative impact associated with parking, alternative transportation, or emergency access. Therefore, cumulative impacts associated with these issues would be less than significant.

No other cumulative impacts would occur associated with transportation and traffic.

4.3.6 - Climate Change

Impacts associated with climate change are inherently cumulative in their nature, as project-generated greenhouse gas emissions do not directly produce local or regional impacts, but may contribute to an impact on global climate. Individual projects contribute relatively small amounts of greenhouse gases that, when added to all other greenhouse gas emitting activities around the world, result in global increases in these emissions. Local or regional environmental effects may occur if the climate is changed.

The project contributes to climate change impacts through its contribution of greenhouse gases (GHG). The project would generate a variety of GHGs during construction and operation, including several defined by AB 32, such as carbon dioxide, methane, and nitrous oxide. The project would emit greenhouse gases such as carbon dioxide, methane, and nitrous oxide from the exhaust of equipment, and exhaust of vehicles for employees and hauling trips.

An inventory of GHG emissions generated by the project is presented in Section 3.6.4 of this Draft EIR, and represents a highly-conservative analysis scenario, where all pieces of equipment are assumed to operate every day, 5 days a week, for the full duration of the construction period. Because the analysis is conservative, it represents the worst-case construction scenario for all three potential project routes. In addition, mitigation measures applied in the Air Quality section of this Draft EIR would reduce GHG emissions. However, the measures reduce the level of daily activity, not total annual activity. It is currently infeasible to estimate the GHG emission reduction that would occur with implementation of those measures.

The project would result in approximately 3,740 $MTCO_2e$ over the duration of construction. $MTCO_2e$ is calculated by multiplying the tons of CO_2 by 0.9072 and the global warming potential of 1.

Currently, potable water from a variety of sources is delivered to a variety of end-users in the project area. In addition, the Carson Regional Water Recycling Plant processes water to Nitrified Title 22 standards. The project would construct a pipeline to deliver the existing source of Title 22 recycle water to the existing water users, thereby reducing the consumption of potable water. The project does not propose or anticipate any additional or new operational, or long-term, emissions sources. In addition, the project would not increase the activity at the Carson Regional Water Recycling Plant.

The project has been designed to offset up to 15,000 acre-feet per year of potable water with Nitrified Title 22 recycled Water. Because the emissions associated with both the recycled water and the potable water are existing, the project offsets the emissions associated with the pumping, treatment and conveyance of up to 15,000 acre-feet of potable water.

Because the potable water delivered to the area comes from a variety of sources, the generalized emission factors for Southern California were used, as detailed in Appendix B, to estimate the amount

of GHGs offset by the project. The project would reduce up to 23,263.3 $MTCO_2e$ per year during project operation.

The highest annual estimated GHG emissions associated with construction of the proposed pipeline would be approximately 1,600 $MTCO_2$ per year (year 2010). Absent any air quality regulatory agency-adopted threshold for GHG emissions, it is notable that the proposed project would generate substantially fewer emissions than the 25,000 $MTCO_2$ per year required for mandatory reporting to the California Air Resources Board, the 10,000 $MTCO_2$ per year limit under the Assembly Bill 32 cap and trade program, and the 10,000 $MTCO_2$ per year threshold used by SCAQMD for stationary sources where the SCAQMD is the Lead Agency. Because construction-related emissions would be finite in nature, below the minimum standard for reporting requirements under Assembly Bill 32, and below thresholds being considered by regulatory agencies, the GHG emissions related to construction of the proposed turbines would not be considered to make a cumulatively considerable contribution to global climate change, and, therefore, would be less than significant.

SECTION 5: OTHER CEQA CONSIDERATIONS

5.1 - Growth Inducing Impacts

Growth inducing impacts are addressed in Section 15126.2(d) of the CEQA Guidelines. The CEQA Guidelines define growth inducing impacts as "…the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment."

Growth inducing impacts can occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area of the project. Also included in this category are projects that would remove physical obstacles to population growth, such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional new development. Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth, are those which may provide a catalyst for future unrelated development in the area (such as a new residential community that requires additional commercial uses to support residents). The growth inducing potential of a project would also be considered significant if it fosters growth in excess of what is assumed in the local master plans and land use plans, or in projections made by regional planning agencies.

The proposed pipeline project would be located beneath city streets in the public right of way. The pipeline would provide recycled water to existing industrial and commercial customers in the Los Angeles Harbor Area. The proposed project would not increase economic or population growth or the construction of additional housing since the proposed project is in an area already developed. Instead, the project would meet the existing demand for recycled water and would reduce the demand for potable water in the project area. Therefore, the proposed project is not considered growth inducing.

5.2 - Significant Irreversible Changes

As mandated by the CEQA Guidelines, the EIR must address any significant irreversible environmental change that would result from implementation of the proposed project. Per the CEQA

Guidelines (§ 15126.2(c)), such a change would occur if one of the following scenarios is involved:

- The project would involve a large commitment of nonrenewable resources;
- Irreversible damage can result from environmental accidents associated with the project; and
- The proposed consumption of resources is not justified (e.g., the project results in the wasteful use of energy.)

The environmental effects of the proposed project are discussed in detail in Section 4 of this Draft EIR and summarized in the Executive Summary Implementation of the project would require the long-term commitment of natural resources and land, as discussed in the following paragraphs.

Approval and implementation of actions related to the proposed project would result in an irretrievable commitment of non-renewable resources such as energy supplies and other construction related materials. The energy resource demands would be used for construction, maintenance of the pipeline, and the energy required to supply the pipeline with recycled water. Although the operation of the project would require a permanent commitment of energy resources, the project would replace and/or supplement the use of potable water for existing customers. Because the provision of potable water to the project area requires a significant commitment of energy resources, the reduction in this demand associated with the operation of the proposed project would result in a reduction in the intensity of effect of these changes on the environment.

The consumption of non-renewable or slowly renewable resources would result from the development of the proposed project. These resources would include, but not be limited to, lumber and other forest products, sand and gravel, asphalt, steel, copper, lead, and water.

The project would occur in a highly urbanized area with very few, if any, areas where vacant land occurs. Development of the proposed project would support an existing need for recycled water while reducing regional demand for potable water, therefore would not result in the development of vacant or undeveloped land.

5.3 - Significant Unavoidable Impacts

Potential environmental effects of the proposed project and proposed mitigation measures are discussed in detail in Section 4 of this Draft EIR. The following environmental issues were determined to be less than significant, or could be reduced to less than significant levels with mitigation measures:

- Air Quality
- Cultural Resources
- Hazards and Hazardous Materials
- Climate Change

Section 15126.2(b) of the CEQA Guidelines requires that the EIR describe any significant impacts, including those that can be mitigated but not reduced to less than significant levels. The following impacts would result in significant and unavoidable impacts, even with the incorporation of feasible mitigation measures that attempt to reduce impacts to less than significant levels:

- Noise (construction noise and vibration)
- Transportation and Traffic (short term impacts related to parking and congestion during construction)

SECTION 6: ALTERNATIVES TO THE PROPOSED PROJECT

6.1 - Introduction

In accordance with CEQA Guidelines § 15126.6, this Environmental Impact Report (EIR) contains a comparative impact assessment of alternatives to the proposed project. The primary purpose of this section is to provide decision-makers and the general public with a reasonable degree of feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the project's significant adverse environmental effects. Important considerations for these alternatives analyses are noted below (as stated in CEQA Guidelines § 15126.6):

An EIR need not consider every conceivable alternative to a project:

- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
  - Failure to meet most of the basic project objectives;
  - Infeasibility; or
  - Inability to avoid significant environmental effects

At the project-level, this EIR has identified the following impacts of the proposed project to be significant:

- **Air Quality** (Construction/)
- **Cultural Resources** (Construction)
- **Noise** (Construction)
- **Traffic** (Construction)

As stated in Section 3.3, Project Objectives, of this Draft EIR, the objectives of the proposed Harbor Refineries Recycled Water Pipeline Project are to:

- Improve the reliability of the City of Los Angeles water supply through increased recycled water use.
- Comply with the City of Los Angeles and the Los Angeles Department of Water and Power action plan titled "Securing L.A.'s Water Supply" outlining the steps to sustain a reliable water supply to meet current and future demand.
- Construct the necessary infrastructure to convey recycled water to the various industrial and irrigation customers in the Los Angeles Harbor Area.
- Provide recycled water to some of the City of Los Angeles' largest water customers, and where feasible, switch their potable water use into recycled water use.

6.2 - Alternatives Considered But Rejected

The Los Angeles Department of Water and Power (LADWP) has considered the following two alternatives to the proposed project. However, for the reasons stated below, these alternatives were rejected from consideration. Consequently, no further analysis will be conducted.

6.2.1 - Alameda/Anaheim Alternative Route

LADWP has considered an alternative pipeline route that would start from WBMWD's JMMWRF and travel south on Wilmington Boulevard and then east on 223rd Street. The pipeline would then travel south along Alameda Street until it reaches Anaheim Street. From there the pipeline would travel east on Anaheim Street to Henry Ford Avenue and west on Anaheim Street to Gaffey Street. For this project, the pipeline would be constructed using both open trench and jacking construction methods.

This alternative route would reduce the project size of the Harbor Refineries Recycled Water Pipeline Project (HRRWPP) by constructing a shorter pipeline and eliminate the need for directional drilling under the Dominguez Channel. However, Alameda Street and Anaheim Street are heavily traveled streets used to access the Los Angeles and Long Beach Ports, which would be require lane closures for up to three lanes during construction activities. These lane closures would likely result in significant and unavoidable traffic impacts during construction that would likely exceed the traffic impacts identified for the proposed project. In addition, the construction of the pipeline along both Alameda Street and Anaheim Street would result in the need for great numbers of pipe jacking locations; thereby resulting in an increase to the construction duration which would significantly increase the cost of construction. Because the Alameda/Anaheim Alternative Route would lengthen the duration of construction, result in an increase in traffic impacts when compared to the proposed project, and would increase the cost of construction, LADWP has rejected this alternative from consideration.

6.2.2 - Wilmington/Lomita Alternative Route

LADWP has considered an alternative pipeline route that would start from the JMMWRF and travel south on Wilmington Boulevard to Lomita Boulevard. From there the pipeline would split into two segments, one would travel east to Alameda Street and travel south to Anaheim Street. From this point, the pipeline would travel west along Anaheim Street, turn north onto Henry Bridges Avenue, continue west along L Street and then would cross the Dominguez Channel. After crossing the Channel, the pipeline would continue west along I Street where it will then turn south onto Sampson Avenue. The pipeline would travel south a few feet until it terminates at the intersection of Anaheim and Sampson Avenue to supply recycled water to Air Products Plant and Valero Refinery. The second segment would travel west on Lomita Boulevard to Figueroa Street where it would travel south to Pacific Coast Highway. The pipeline would then travel west on Pacific Coast Highway then turn south along Figueroa Street and continue south until it intersects with West L Street. From there

the pipeline would travel west along L Street. At L Street, the pipeline would split in two directions, one portion of the pipeline would continue west on L Street to deliver recycled water to Harbor City College and to the Harbor Park Golf Course, while the other portion of the pipeline would continue south on Figueroa Place towards the intersection of I Street. The portion of the pipeline traveling south on Figueroa Place would turn west onto I Street and would then continue west on Anaheim Street to supply recycled water to ConocoPhillips Refinery, the Ken Malloy Harbor Regional Park, and other Department of Health (DPH) approved uses.

For this alternative, the pipeline would be constructed using open trench, jacking and directional drilling construction methods. This pipeline would include a 36 inch diameter pipe in the City of Carson, and a 30 inch (or smaller) sized pipeline would be constructed in the City of Wilmington. It was expected that implementation of the Wilmington/Lomita Alternative Route would reduce certain traffic impacts during construction in comparison to the proposed project. However, construction in the areas of Wilmington Avenue and Lomita Boulevard that would occur under this alternative route would require the use of additional jacking compared to the proposed project, thus resulting in an increase to the duration and intensity of construction, the number of construction personnel, and construction equipment required. As a result, the environmental impacts would likely be greater with this alternative, specifically to the traffic, air quality, and noise. This alternative would also interfere with a major Los Angeles County Sewer Pipeline construction project taking place on Lomita Blvd, which rendered further consideration of this alternative infeasible.

6.3 - Alternative Analysis

LADWP has included the following three alternatives:

- No Project/No Development
- Alternative Alignement - Delores Street Alignement
- Alternative Alignment - Main Street Alignment

The following is a an analysis of the three alternatives selected for consideration for the proposed project. This analysis is intended to provide a relative comparison between the proposed project and each individual project alternative. In several cases, the description of the impact may be the same under each scenario when compared to the CEQA Thresholds of Significance (i.e., both scenarios would result in a “less than significant” impact). However, the actual degree of impact may be slightly different under each scenario, and this relative difference is the basis for a conclusion of greater or lesser impacts. This is merely a comparison of two scenarios and does not change the significance of the proposed project’s impacts.

6.4 - No Project Alternative (Alternative 1)

The discussion and evaluation of a No Project Alternative is required by the CEQA Guidelines. Under the No Project/No Development Alternative (Alternative 1), the project site would remain as an existing public right of way, and existing conditions would continue. No recycled water pipeline would be constructed as a result of the project. Recycled water treated at the JMMWRF would continue to be distributed as in the existing condition. Additionally, industrial and commercial water users in the project area would continue to rely solely on potable water for the majority of their water needs.

6.4.1 - Impact Analysis

Discussion of impacts under the No Project Alternative (Alternative 1) for the issue areas addressed in this Draft EIR for the proposed project follows.

Air Quality

No construction- or operation-related emissions would occur with Alternative 1. Without construction and operation of the proposed project, there would be no exceedance of South Coast Air Quality Management District's (SCAQMD's) significance thresholds during the construction phase, no cumulative contribution to an air quality violation, no exposure of sensitive receptors to substantial pollutant concentrations, and no cumulatively considerable air quality impacts. Short-term construction impacts to air quality under the No Project Alternative are considered to be less than under the proposed project.

Cultural Resources

The No Project Alternative would leave the project alignment in its existing condition and would not result in further disturbance to the alignment beyond that which had previously occurred from earlier construction projects, including previous road-building and utility installation projects. As a result, no impacts to historic resources would occur, and potential impacts to undiscovered cultural and paleontological resources would not occur. Therefore, impacts related to cultural resources would not occur under the No Project Alternative.

Hazards and Hazardous Waste

The No Project Alternative would leave the project alignment in its existing condition. Because no construction would occur, no hazardous waste associated with construction would be utilized within the project area, including areas within one quarter mile of existing schools. Additionally, without the proposed construction activities, any affects to evacuation routes along project alignment roadways would not occur. Accordingly, impacts associated with hazards and hazardous waste would not occur under this alternative.

Noise

Noise, vibration, and traffic noise associated with the construction of the proposed project would not occur with the No Project; and therefore, the proposed project's construction noise impacts would be avoided.

Transportation and Traffic

Traffic generation generated by the construction and maintenance within the public right of way for the proposed pipelines would not occur under this alternative. Additionally, the proposed project's construction-related traffic impacts would be avoided under the No Project Alternative; therefore, impacts to transportation and traffic under the No Project Alternative would be less than the proposed project.

Climate Change

As with Air Quality, discussed above, the No Project Alternative would avoid short-term construction impacts related to emissions of air pollutants during construction, including those that contribute to climate change. As such, the project's contribution to climate change during construction would be avoided by the No Project Alternative and associated construction impacts would be less than the proposed project.

6.4.2 - Conclusions and Relationship to Project Objectives

While the No Project Alternative would reduce or avoid the significant impacts associated with the proposed Harbor Refineries Recycled Water Pipeline Project, this alternative would not meet the project objectives.

6.5 - Alternative Alignment - Delores Street Alignment (Alternative 2)

Under the Delores Street Alignment Alternative, the pipeline alignment would avoid Avalon Boulevard between 223rd Street and Lomita Boulevard. As shown on Exhibit 6-1, at the intersection of Avalon and 223rd Street, the pipeline under this alternative would be routed west beneath 223rd Street to Delores Street, where the pipeline would continue south to Sepulveda Boulevard. At Sepulveda Boulevard, the pipeline would be routed west to Main Street where it would continue south beneath Main Street. Finally, under this alternative, the pipeline would be routed east beneath Lomita Boulevard until the intersection of Lomita Boulevard and Avalon Boulevard, where the pipeline would be routed south beneath Avalon Boulevard. In this alternative, no construction would occur along Avalon Boulevard between 223rd Street and Lomita Boulevard. The typical construction methods described in Section 2, Project Description, of this Draft EIR would be utilized under this alternative.

6.5.1 - Impact Analysis

Discussion of impacts under the Alternative Alignment - Delores Avenue Alignment (Alternative 2) for the issue areas addressed in this Draft EIR for the proposed project follows.

Air Quality

The development of Alternative 2 would result in an increase in the total area of construction, as the length of the pipeline alignment under this alternative would lengthen from approximately 60,000 feet of pipeline to approximately 67,000 feet in order to avoid impacting a segment of Avalon Boulevard. Construction emissions would still occur under Alternative 2 as under the proposed project.

As described in the Air Quality Section of this Draft EIR, the construction-related analysis used an estimate of peak construction activity to calculate the maximum daily air pollutant emissions of concern. The maximum daily emissions calculated for the proposed project reflect the worst-case construction scenario that could occur on any one day, on any portion of the project. The maximum daily emissions for the proposed project were calculated using the peak trenching activity, construction employee trips, water truck emissions, fugitive dust emissions, soil hauling, and pipe hauling. Although lengthening the project under Alternative 2 may potentially lengthen the duration of construction, Alternative 2 would not modify the estimated peak daily construction activity scenario. Therefore, the amount of daily air pollutant generation from construction activity from Alternative 2 would be the same as the proposed alignment. Implementation of the mitigation measures identified in the Draft EIR would be required.

Because air quality impacts are determined based on a daily emissions threshold, although the duration of construction would be increased under Alternative 2, impacts to air quality would not be increased compared to the proposed project.

Cultural Resources

Similar to the proposed project, construction activities would still occur under Alternative 2 and would not affect historic structures located adjacent to the alignment. As discussed in Section 4, Environmental Impact Analysis, of this Draft EIR, portions of the alignment along Avalon Boulevard between 223rd Street and Lomita Boulevard include areas of high potential for subsurface archaeological resources that may be disturbed during construction activities. However, as shown in Exhibit 3.2-1 in this Draft EIR, the area identified as having a high sensitivity for buried cultural resources extends westward from Avalon Boulevard to include the entire Alternative 2 alignment. Because the alignment for Alternative 2 would be included in a highly sensitive archeological area, the increased area of disturbance compared to the proposed project would result in slightly greater impacts to archeological resources.

Development of the project under Alternative 2 would not require the installation of any permanent, above ground improvements within the alternative alignment. Therefore, impacts to historical resources along the Alternative 2 alignment would be the same as with the proposed project.

Alternative 2 would construct a recycled water pipeline in areas with similar paleontological sensitivity as that of the proposed project. Although the area of construction would be slightly increased, the overall impact to paleontological resources would be similar to those identified for the proposed project.

Hazards and Hazardous Waste

Alternative 2 includes construction activities, which would include the limited transport, storage, usage, or disposal of hazardous materials as would occur with the proposed project. This activity would occur for short-term periods during the construction of the facilities associated with the pipeline. Impacts associated with the routine use of hazardous materials and accident conditions involving the release of hazardous materials under Alternative 2 would be similar as the proposed project.

Similar to the proposed project, construction of Alternative 2 would handle hazardous materials within one-quarter mile of existing and proposed schools. The alignment for Alternative 2 would not avoid construction within a quarter mile of any schools identified in the analysis for the proposed project alignment, however would result in the handling of hazardous materials within one quarter mile of 6 additional schools, which are each identified below in Table 6-1. Because more schools would be located within one quarter mile of the alignment for Alternative 2, impacts associated with this issue would be increased compared to the proposed project.

Table 6-1: Nearby School Locations - Alternative 2

School Name	School Location	Distance from Alternative 2 Alignment	Difference from Proposed Project Alignment
Judson Baptist Church (school)	451 East 223rd Street, Carson	0.00 mile	0.30 mile
Delores Street Elementary School	22526 Dolores Street, Carson	0.00 mile	0.50 mile
Eagle Tree Continuation School	22628 Main Street, Carson	0.20 mile	0.70 mile
Catskill Avenue Elementary School	23536 Catskill Avenue, Carson	0.06 mile	0.42 mile
Wilmington Middle School	1700 Gulf Avenue, Wilmington	0.00 mile	0.44 mile
Carson Senior High School	22328 Main Street, Carson	0.20 mile	0.70 mile

The portion of Alternative 2 that would differ from the proposed project would be constructed along a primarily residential corridor, and would not located on a site designated on any hazardous waste listings.

Impacts associated with safety hazards within the location of public airports, or private airstrips for people residing or working in the area would be the same as the proposed project. Alternative 2 would avoid a portion of Avalon Boulevard, which is a major roadway in the area that could

potentially be used as an emergency evacuation route. Because of this, impacts associated with this issue would be reduced when compared to the proposed project.

Noise

Like the proposed project, implementation of Alternative 2 would require the short-term use of heavy equipment within the construction area, which would result in the exposure of nearby sensitive receptors to noise levels in excess of the standards established in the local noise ordinances. The noise levels and groundborne vibrations generated during construction activities would be the same as the proposed project. Noise sampling and modeling was done for the Alternative 2 alignment, and is contained in Appendix E, Noise. Table 6-2 provides a summary of the existing conditions at the two measurement locations within the alignment. As shown, the measured ambient L_{max} noise levels exceed the daytime significance criterion of 75 dBA and the nighttime significance criterion of 60 dBA at both locations.

Table 6-2: Summary of Noise Measurements on the Alternative 2 Pipeline Route

Location #	Location Description	Jurisdiction	Measurement Period	Measured Noise Levels, dBA
9[a]	Backyard of residence at 231038 Bolas Avenue	Carson	Daytime (7 a.m. to 9 p.m.)	L_{eq}: 56.9 to 67.6 L_{max}: 70.8 to 93.9
			Nighttime (9 p.m. to 7 a.m.)	L_{eq}: 53.4 to 57.7 L_{max}: 65.1 to 76.5
11	Adjacent to residence at 104 East 235th Street	Carson	6:17 p.m. to 6:39 p.m.	L_{eq}: 67.5 L_{max}: 77.7

During construction activities along the Alternative 2, it is estimated that the combined noise levels along the alternative alignment will be at least 23 dB higher than existing ambient levels at both of the measurement locations along the Alternative 2 route, which is 3dB lower than the proposed project. Although this would result in a significant impact as they exceed the thresholds of 10 dB for daytime construction and 5 dB for nighttime construction, the severity of this impact would be slightly less than that of the proposed project.

As trenching activities would occur during construction of the pipeline under Alternative 2, the noise generated from construction equipment would be the same as for the proposed project. As sensitive land uses occur along the Alternative 2 alignment, construction of this alignment would exceed the 75 dBA daytime construction noise threshold and the 65 dBA nighttime construction noise threshold, similar to the proposed project.

A measurement of existing vibration levels was conducted along the Alternative 2 pipeline route and is provided below in Table 6-2. As shown, the measured ambient vibration levels exceed the significance criterion of 72 VdB at the measurement location.

Table 6-3: Vibration Measurement on the Alternative 2 Pipeline Route

Location	Location Description	Jurisdiction	Measurement Period	Measured Vibration Levels
11	Adjacent to residence at 104 E. 235th Street	Carson	6:17 p.m. to 6:39 p.m.	LV: 38 to 75 VdB PPV: 0.000 to 0.022 in/sec

Notes:
a. 24-hour measurement location. Therefore, data is reported as the range of hourly values of the entire measurement.

As the construction methods would be the same for Alternative 2 as those of the proposed project, the vibration generated by construction activities would be the same as the proposed project. It is estimated that the L_V threshold of 72 VdB will be exceeded at existing residential buildings within 79 feet of the equipment. At existing institutional buildings within 63 feet of the equipment, the L_V threshold of 75 VdB will be exceeded. Therefore, impacts related to vibration would be similar under Alternative 2 when compared to that of the proposed project.

Similar to the proposed project, Alternative 2 would install an underground pipeline beneath public streets, and would not result in a permanent increase in sound. Long term operational noise impacts would be the same as the proposed project. Additionally, noise impacts associated with airports would be the same as the proposed project.

Although the degree of the impacts would be similar to the proposed project, the increased length of the construction area under Alternative 2 compared to the proposed project would result in an increase in the number of sensitive receptors exposed to construction noise levels. Therefore, impacts associated with construction noise would be greater than the those associated with the proposed project.

Transportation and Traffic

Alternative 2 would avoid a portion of Avalon Boulevard that would be impacted by construction for the proposed project. The roadway characteristics for the Alternative 2 alignment are fully described in the project-specific traffic study, located in Appendix F. The Alternative 2 route is comprised of four-lane to two-lane roadways along commercial, school, and residential land uses. As with the proposed project, access to these land uses would be partially restricted during construction. Left turn movements at intersection approaches and at mid-block driveway locations would likely be impacted depending on the location of the planned trenching areas.

Similar to the proposed project, construction for Alternative 2 is anticipated to result in the closing of up to two lanes along the pipeline route. No complete street closures are anticipated. Several roadways, which provide local and regional access in and out of the area, will be affected with the

Alternative 2 construction. The reduced roadway capacity during construction will impact the following four analyzed roadway segments:

- Dolores Street, between East 223rd Street and Sepulveda Boulevard is a north-south collector roadway with an ADT of 4,405. Dolores Street currently has two lanes; therefore, in taking into account of loss of two travel lanes for construction purposes, on-street parking and bike lanes will likely be closed. If two traffic lanes continue to be provided, LOS A will be maintained during Alternative 2 construction.
- East 223rd Street, between Dolores Street and Avalon Boulevard is an east-west arterial roadway with an ADT of 18,798. LOS will be reduced from A to E during Alternative 2 construction.
- Main Street, between Sepulveda Boulevard and Lomita Boulevard is a north-south arterial roadway with an ADT of 15,974. LOS will be reduced from A to C during Alternative 2 construction.
- Sepulveda Boulevard, between Main Street and Dolores Street is an east-west arterial roadway with an ADT of 28,212. LOS will be reduced from C to F during Alternative 2 construction.

By reducing the roadway capacity by two lanes, the potential for significant impacts are high with roadway operations likely increasing to a poor level of service (values of E or F) at two of the four roadway segments. The mitigation measures identified in the impact analysis for Impact TRAN-1 would reduce the severity of impacts to roadways along the Alternative 2 alignment, though these impacts would remain significant and unavoidable.

No additional pipe jacking or directional drilling locations would be implemented pursuant to the Alternative 2 construction when compared to the proposed project. Additionally as parking capacity on streets along the Alternative 2 alignment would be temporarily reduced during construction, impacts to parking capacity would be the same as under the proposed project.

The Alternative 2 alignment would utilize the same transit lines as the proposed project; however there would be one additional line affected by Alternative 2 in relation to the proposed project: Carson Circuit Route F. Therefore, impacts to alternative transportation would be slightly increased compared to the proposed project. As construction methods would be the same as for the proposed project, no unsafe roadway design features would be created by Alternative 2. Additionally, as no complete road closures would occur under Alternative 2, impacts to emergency access along the Alternative 2 alignment would be the same as the proposed project.

The construction of the pipeline pursuant to Alternative 2 would have similar impacts to the roadways along the Alternative 2 alignment as with the proposed project alignment. However, as Avalon Boulevard provides a primary access route to both residential and commercial vehicular traffic in the project area, and to areas south of the project area, the avoidance of impacts to Avalon Boulevard by

implementing Alternative 2 would provide an overall decrease in the severity of impacts associated with traffic congestion caused by construction of the pipeline.

Climate Change

The implementation of Alternative 2 would result in an increase in the overall length of the pipeline compared to the proposed project. Although daily emissions of pollutants associated with climate change would be the same as the proposed project, the overall project contribution of these pollutants would be increased incrementally in proportion to the increase in the construction area. Therefore, the impacts associated with climate change would be slightly increased compared to the proposed project, though these impacts would remain less than significant.

6.5.2 - Conclusions and Relationship to Project Objectives

Impacts for climate change, cultural resources, hazards and hazardous materials, and noise would be increased compared to the proposed project, while impacts associated with traffic would be slightly reduced compared to the proposed project. Although traffic impacts would be slightly reduced under Alternative 2, these impacts would remain significant and unavoidable. As the length of the proposed pipeline increase, certain impacts would be greater and the economic viability of implementing the Alternative Alignment - Delores Avenue Alignment could be significantly affected.

All of the project objectives would be met under this Alternative.

6.6 - Alternative Alignment - Main Street Alignment (Alternative 3)

Under the Main Street Alignment Alternative, the pipeline alignment would avoid Avalon Boulevard between 223rd Street and Lomita Boulevard. As shown on Exhibit 6-2, at the intersection of Avalon and 223rd Street, the pipeline under this alternative would be routed west beneath 223rd Street to Main Street, where the pipeline would continue south to Lomita Boulevard. At Lomita Boulevard, the pipeline would be routed east beneath the roadway until the intersection of Lomita Boulevard and Avalon Boulevard, where the pipeline would be routed south beneath Avalon Boulevard. In this alternative, no construction would occur along Avalon Boulevard between 223rd Street and Lomita Boulevard. The typical construction methods described in Section 2.0 of this Draft EIR would be utilized under this alternative.

6.6.1 - Impact Analysis

Discussion of impacts under the Alternative Alignment - Main Street Alignment (Alternative 3) for the issue areas addressed in this Draft EIR for the proposed project follows.

Air Quality

The development of Alternative 3 would result in an increase in the total area of construction as the length of the pipeline alignment under this alternative would lengthened from approximately 60,000

feet of pipeline to approximately 67,200 feet to avoid impacts to a segment of Avalon Boulevard. Operational emissions under Alternative 3 would remain the same compared to the proposed project.

As described in the Air Quality Section of this Draft EIR, the construction-related analysis used an estimate of peak construction activity to calculate the maximum daily air pollutant emissions of concern. The maximum daily emissions calculated for the proposed project reflect the worst-case construction scenario that could occur on any one day, on any portion of the project. The maximum daily emissions for the proposed project were calculated using the peak trenching activity, construction employee trips, water truck emissions, fugitive dust emissions, soil hauling, and pipe hauling. Although lengthening the project under Alternative 3 may potentially lengthen the duration of construction, Alternative 3 would not modify the estimated peak daily construction activity scenario. Therefore, the amount of daily air pollutant generation from construction activity from Alternative 3 would be the same as the proposed alignment. Implementation of the mitigation measures identified in the Draft EIR would be required.

Because air quality impacts are determined based on a daily emissions threshold, although the duration of construction would be increased under Alternative 3, impacts to air quality would not be increased compared to the proposed project.

Cultural Resources

Similar to the proposed project, construction activities would still occur under Alternative 3 and would not affect historic structures located adjacent to the alignment. As discussed in Section 4, Environmental Impact Analysis, of this Draft EIR, portions of the alignment along Avalon Boulevard between 223rd Street and Lomita Boulevard include areas of high potential for subsurface archaeological resources that may be disturbed during construction activities. However, as shown in Exhibit 3.2-1 in this Draft EIR, the area identified as having a high sensitivity for buried cultural resources extends westward from Avalon Boulevard to include the entire Alternative 3 alignment. Because the alignment for Alternative 3 would be included in a highly sensitive archeological area, the increased area of disturbance compared to the proposed project would result in slightly greater impacts to archeological resources.

Development of the project under Alternative 3 would not require the installation of any permanent, above ground improvements within the alternative alignment. Therefore, impacts to historical resources along the Alternative 3 alignment would be the same as with the proposed project.

Alternative 3 would construct a recycled water pipeline in areas with similar paleontological sensitivity as that of the proposed project. Although the area of construction would be slightly increased, the overall impact to paleontological resources would be similar to those identified for the proposed project.

Hazards and Hazardous Waste

Alternative 3 includes construction activities, which would include the limited transport, storage, usage, or disposal of hazardous materials as would occur with the proposed project. This activity would occur for short-term periods during the construction of the facilities associated with the pipeline. Impacts associated with the routine use of hazardous materials and accident conditions involving the release of hazardous materials under Alternative 3 would be similar as the proposed project.

Similar to the proposed project, construction of Alternative 3 would handle hazardous materials within one-quarter mile of existing and proposed schools. The alignment for Alternative 3 would not avoid construction within a quarter mile of any schools occurring along the proposed project alignment, however would result in the handling of hazardous materials within one quarter mile of 6 schools, which are each identified below in Table 6-4. Because more schools would be located within one quarter mile of the alignment for Alternative 3, impacts associated with this issue would be increased compared to the proposed project.

Table 6-4: Nearby School Locations - Alternative 3

School Name	School Location	Distance from Alternative 3 Alignment	Distance from Proposed Project Alignment
Judson Baptist Church (school)	451 E 223rd Street, Carson	0.00 mile	0.30 mile
Delores Street Elementary School	22526 Dolores Street, Carson	0.20 mile	0.50 mile
Eagle Tree Continuation School	22628 Main Street, Carson	0.00 mile	0.70 mile
Catskill Avenue Elementary School	23536 Catskill Avenue, Carson	0.25 mile	0.42 mile
Wilmington Middle School	1700 Gulf Avenue, Wilmington	0.00 mile	0.44 mile
Carson Senior High School	22328 Main Street, Carson	0.20 mile	0.71 mile

The portion of Alternative 3 that would differ from the proposed project would be constructed along a primarily residential corridor, and would not be located on a site designated on any hazardous waste listings.

Impacts associated safety hazards with the location of public airports, or private airstrips for people residing or working in the area would be the same as the proposed project. Alternative 3 would avoid a portion of Avalon Boulevard, which is a major roadway in the area that could be used as an emergency evacuation route. Because of this, impacts associated with this issue would be reduced when compared to the proposed project.

Noise

Like the proposed project, implementation of Alternative 3 would require the short-term use of heavy equipment within the construction area, which would result in the exposure of nearby sensitive receptors to noise levels in excess of the standards established in the local noise ordinances. The noise levels and groundborne vibrations generated during construction activities would be the same as the proposed project. Noise sampling and modeling was done for the Alternative 3 alignment, and is contained in Appendix E of this document. Table 6-5 provides a summary of the existing conditions at the two measurement locations within the alignment. As shown, the measured ambient L_{max} noise levels exceed

Table 6-5: Summary of Noise Measurements on the Alternative 3 Pipeline Route

Location #	Location Description	Jurisdiction	Measurement Period	Measured Noise Levels, dBA
10	Adjacent to residence at 22910 Dolores Street	Carson	11:37 a.m. to 12:01 p.m.	L_{eq}: 61.0 L_{max}: 74.9
12[a]	Backyard of residence at 23705 Catskill Avenue	Carson	Daytime (7 a.m. to 9 p.m.)	L_{eq}: 54.8 to 61.3 L_{max}: 68.0 to 82.2
			Nighttime (9 p.m. to 7 a.m.)	L_{eq}: 43.3 to 53.7 L_{max}: 63.2 to 73.8

Notes:
a. 24-hour measurement location. Therefore, data is reported as the range of hourly values of the entire measurement.

During construction activities along the Alternative 3, it is estimated that the combined noise levels along the alternative alignment will be at least 29 dB higher than existing ambient levels at both of the measurement locations along the Alternative 3 route, which is 3dB higher than the proposed project. This would result in a significant impact as it would exceed the thresholds of 10 dB for daytime construction and 5 dB for nighttime construction, and the severity of this impact would be slightly greater than that of the proposed project.

As trenching activities would occur during construction of the pipeline under Alternative 3, the noise generated from construction equipment would be the same as for the proposed project. As sensitive land uses occur along the Alternative 3 alignment, construction of this alignment would exceed the 75 dBA daytime construction noise threshold and the 65 dBA nighttime construction noise threshold for sensitive receptors, similar to the proposed project.

A measurement of existing vibration levels was conducted along the Alternative 3 pipeline route and is provided below in Table 6-6. As shown, the measured ambient vibration levels exceed the significance criterion of 72 VdB at the measurement location. As the construction methods would be the same for Alternative 3 as those of the proposed project, the vibration generated by construction activities would be the same as the proposed project. It is estimated that the L_V threshold of 72 VdB

will be exceeded at existing residential buildings within 79 feet of the equipment. At existing institutional buildings within 63 feet of the equipment, the L_V threshold of 75 VdB will be exceeded. Therefore, impacts related to vibration would be similar under Alternative 3 when compared to that of the proposed project.

Table 6-6: Vibration Measurement on the Alternative 3 Pipeline Route

Location #	Location Description	Jurisdiction	Measurement Period	Measured Noise Levels, dBA
11	Adjacent to residence at 104 E. 235th Street	Carson	6:17 p.m. to 6:39 p.m.	LV: 38-75 VdB PPV: 0.000-0.022 in/sec
Notes: a. 24-hour measurement location. Therefore, data is reported as the range of hourly values of the entire measurement.				

Similar to the proposed project, Alternative 3 would install an underground pipeline beneath public streets, and would not result in a permanent increase in sound. Long term operational noise impacts would be the same as the proposed project. Additionally, noise impacts associated with airports would be the same as the proposed project.

Although the degree of the impacts would be similar to the proposed project, the increased length of the construction area under Alternative 3 compared to the proposed project would result in an increase in the number of sensitive receptors exposed to construction noise levels. Therefore, impacts associated with construction noise would be greater than the those associated with the proposed project.

Transportation and Traffic

Alternative 3 would avoid a portion of Avalon Boulevard that would be impacted by construction for the proposed project. The roadway characteristics for the Alternative 3 alignment are fully described in the project-specific traffic study, located in Appendix F to this document. The Alternative 3 route is comprised of four-lane to two-lane roadways along commercial, school, and residential land uses. As with the project, access to these land uses would be partially restricted during construction. Left turn movements at intersection approaches and at mid-block driveway locations would likely be impacted depending on the location of the planned trenching areas.

Similar to the proposed project, construction for Alternative 3 is anticipated to result in the closing of up to two lanes along the pipeline route. No complete street closures are anticipated. Several roadways, which provide local and regional access in and out of the area, will be affected with the Alternative 3 construction. The reduced roadway capacity during construction will impact the following two analyzed roadway segments:

- East 223rd Street, between Dolores Street and Avalon Boulevard is an east-west arterial roadway with an ADT of 18,798. LOS will be reduced from A to E during Alternative 3 construction.
- Main Street, between Sepulveda Boulevard and Lomita Boulevard is a north-south arterial roadway with an ADT of 15,974. LOS will be reduced from A to C during Alternative 3 construction.

By reducing the roadway capacity by up to two lanes, the potential for significant impacts are high with roadway operations likely increasing to a poor level of service (values of E or F) at one of the two roadway segments. The mitigation measures identified in the impact analysis for Impact TRAN-1 would reduce the severity of impacts to roadways along the Alternative 3 alignment, though these impacts would remain significant and unavoidable.

No additional pipe jacking or directional drilling locations would be implemented pursuant to the Alternative 3 construction when compared to the proposed project. Additionally as parking capacity on streets along the Alternative 3 alignment would be temporarily reduced during construction, impacts to parking capacity would be the same as under the proposed project.

The Alternative 3 alignment would utilize the same transit lines as the proposed project; however, there would be one additional line affected by Alternative 3 in relation to the proposed project: Carson Circuit Route B. Therefore, impacts to alternative transportation would be slightly increased compared to the proposed project. As construction methods would be the same as for the proposed project, no unsafe roadway design features would be created by Alternative 3. Additionally, as no complete road closures would occur under Alternative 3, impacts to emergency access along the Alternative 3 alignment would be the same as the proposed project.

The construction of the pipeline pursuant to Alternative 3 would have similar impacts to the roadways along the Alternative 3 alignment as with the proposed project alignment. However, as Avalon Boulevard provides a primary access route to both residential and commercial vehicular traffic in the project area, and to areas south of the project area, the avoidance of impacts to Avalon Boulevard by implementing Alternative 3 would provide an overall decrease in the severity of impacts associated with traffic congestion caused by construction of the pipeline.

Climate Change

The implementation of Alternative 3 would result in an increase in the overall length of the pipeline compared to the proposed project. Although daily emissions of pollutants associated with climate change would be the same as the proposed project, the overall project contribution of these pollutants would be increased incrementally in proportion to the increase in the construction area. Therefore, the impacts associated with climate change would be slightly increased compared to the proposed project, though these impacts would remain less than significant.

6.6.2 - Conclusions and Relationship to Project Objectives

Impacts for climate change, cultural resources, hazards and hazardous materials, and noise would be increased compared to the proposed project, while impacts associated with traffic would be slightly reduced compared to the proposed project. Although traffic impacts would be slightly reduced under Alternative 3, these impacts would remain significant and unavoidable. As the length of the proposed pipeline increase, certain impacts would be greater and the economic viability of implementing the Main Street Alignment Alternative could be significantly affected. All of the project objectives would be met under this Alternative.

6.7 - Environmentally Superior Alternative

CEQA Guidelines § 15126(e)(2) requires an EIR to identify an "environmentally superior alternative." If the No Project Alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

Each of the proposed alternatives would have lesser environmental impacts relative to the proposed project. As stated previously, if the No Project Alternative is environmentally superior, the EIR must also identify another environmentally superior alternative among the remaining alternatives. Based on this consideration, Alternative 2 - Delores Street Alignment is considered the environmentally superior alternative.

This alternative has very similar impacts compared to Alternative 3, though Alternative 2 has slightly lesser impacts associated with Noise when compared to Alternative 3. Alternative 2 has slightly lesser impacts than the proposed project transportation/traffic. Therefore, Alternative 2 - Delores Street Alignment is considered the environmentally superior alternative.

Table 6-7: Impact Summary Comparison of Project Alternatives with Proposed Project

Environmental Issue	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: Delores Street Alignment Alternative	Alternative 3: Main Street Alignment Alternative
Air Quality	SIG	L	E	E
Cultural Resources	SIG	L	G	G
Hazards and Hazardous Materials	LTS	L	G	G
Noise	SIG	L	G	G
Transportation and Traffic	SIG	L	L	L
Climate Change	LTS	L	G	G

L = Lesser impact than the proposed project.
G = Greater impact than the proposed project.
LTS = Less than Significant.
E = Equivalent impact to the proposed project.
SIG = Significant.

Table 6-8: Objective Feasibility Comparison

Objectives	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: Delores Street Alignment Alternative	Alternative 3: Main Street Alignment Alternative
Improve the reliability of the City of Los Angeles water supply through increased recycled water use.	Yes	No	Yes	Yes
Comply with the City of Los Angeles and the Los Angeles Department of Water and Power action plan titled "Securing L.A.'s Water Supply" outlining the steps to sustain a reliable water supply to meet current and future demand.	Yes	No	No	No
Construct the necessary infrastructure to convey recycled water to the various industrial and irrigation customers in the Los Angeles Harbor Area.	Yes	No	Yes	Yes
Provide recycled water to some of the City of Los Angeles' largest water customers, and where feasible, switch their potable water use into recycled water use.	Yes	Yes	Yes	Yes

SECTION 7: INFORMATION SOURCES

7.1 - Report Preparation Personnel

7.1.1 - Los Angeles Department of Water and Power

Project Manager ..... Jesus Gonzalez
Environmental Project Manager ..... Shilpa Gupta
Utility Services Manager ..... Charles Holloway

7.1.2 - West Basin Municipal Water District

Senior Environmental Quality Analyst ..... Uzi Daniels

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Environmental Analyst ..... Margaret Lin
Archaeologist ..... Ken Lord
Air Quality Specialist ..... Chryss Meier
Senior Editor ..... Sandra L. Tomlin
GIS Supervisor ..... Karlee McCracken
Administrative Support ..... Jayne Ingram
Reprographics ..... José Morelos, Cole Forbes

Technical Consultants

Wieland Acoustics, Inc. ..... Noise and Vibration
Koa Corporation ..... Traffic
ArchaeoPaleo Resource Management Inc. ..... Paleontology

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7.3 - Acronyms and Abbreviations

µg/m3	micrograms per cubic meter
µPa	microPascals
°C	degrees Centigrade
°F	Fahrenheit
AB	Assembly Bill
ADT	Average Daily Trips
APE	Area of Potential Effect
ARB	California Air Resources Board
A-weighted decibel	dBA
Basin	South Coast Air Basin
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CMP	County of Los Angeles Congestion Management Program
CO	carbon monoxide
CUP	conditional use permit
CWA	Clean Water Act
dB	decibels
DHS	Department of Health and Safety
DOE	determinations of eligibility
DPH	Department of Health
DPH	Department of Health
DPM	Diesel Particulate Matter
DTSC	California Department of Health Services - Toxic Substances Control Division
EIR	Environmental Impact Report
EPA	Environmental Protection Agency

EPA	United States Environmental Protection Agency
Fed/OSHA	Federal Occupational Safety and Health Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GHG	greenhouse gases
GWP	global warming potential
HFCs	Hydrofluorocarbons
HMMA	Hazardous Material Management Act
HRI	Historic Resources Inventory
HRRWPP	Harbor Refineries Recycled Water Pipeline Project
HSWA	Hazardous and Solid Waste Act
Hz	Hertz
ILEA	International Council for Local Environmental Initiatives
in/s	inches per second
IPCC	United Nations Intergovernmental Panel on Climate Change
JMMWRF	Juanita Millender-McDonald Water Recycling Facility
kHz	kilohertz
LADOT	Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
L_{eq}	Equivalent Sound Level
L_{max}	Maximum Sound Level
LOS	levels of service
LST	localized significance threshold
L_v	velocity level
MBA	Michael Brandman Associates
MGD	million gallons per day
$MTCO_2e$	metric tons of carbon dioxide equivalent
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NESHAP	National Emissions Standard for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NIH	National Institute of Health
NO_2	Nitrogen dioxide
NOI	Notice of Intent
NO_x	Nitrogen Oxides
NP	No Parking
NPDES	National Pollution Discharge Elimination System
NPNT	No Parking Night Time

NRHP	National Register of Historic Places
NS	No Stopping
O_3	Ozone
OHP	Office of Historic Preservation
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PFC	Perfluorocarbons
PM_{10} and $PM_{2.5}$	Particulate Matter
ppm	parts per million
PRC	Public Resource Code
RCRA	Resource Conservation and Recovery Act
RF	radiative forcing
rms	root-mean-square
ROG	Reactive Organic Gases
ROW	right-of-way
SCAQMD	South Coast Air Quality Management District's
SF_6	sulfur hexafluoride
SIP	State Implementation Plans
SO_2	Sulfur dioxide
SPL	sound pressure level
sq ft	square-foot
STC	sound transmission class
SUCCOR	South Bay Cities Council of Governments
SWPPP	Storm Water Pollution Prevention Plan
TACs	Toxic air contaminants
VOC	volatile organic compounds
WBMWD	West Basin Municipal Water District
WSCMO	Weather Service Contract Meteorological Office