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INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

LAKEWOOD BOULEVARD CAPACITY ENHANCEMENT PROJECT

LAKEWOOD, CALIFORNIA



WILLDAN ENGINEERING

FEBRUARY 2019

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

LAKEWOOD BOULEVARD CAPACITY ENHANCEMENT PROJECT LAKEWOOD, CALIFORNIA

**PREPARED FOR:
CITY OF LAKEWOOD
Department Public Works
5050 Clark Avenue
Lakewood, CA 90712**

**PREPARED BY:
WILLDAN
13191 Crossroads Parkway North, Suite 405
Industry, California 91746**

FEBRUARY 2019

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INITIAL STUDY, ENVIRONMENTAL CHECKLIST AND MITIGATED NEGATIVE DECLARATION

1. **Project title:** Lakewood Boulevard Capacity Enhancement Project
2. **Lead agency name and address:** City of Lakewood, Department of Public Works
5050 Clark Avenue, Lakewood, CA 90712
3. **Contact person and phone number:** Max Withrow, P.E., Assistant Director of Public Works
(562) 866-9771
4. **Project location:** Lakewood Boulevard, from North City Limits to Del Amo Boulevard.
5. **Project sponsor's name and address:** City of Lakewood, Public Works Department
5050 Clark Avenue, Lakewood, CA 90712
6. **General Plan Designation:** City of Lakewood – Major Arterial
7. **Zoning:** Public right-of-way (Roadway)
8. **Surrounding land uses and setting:** The project is located in the City of Lakewood, in Los Angeles County, north of Long Beach and bounded by the San Gabriel River Freeway (I-605) to the east, the Artesia Freeway (SR-91) to the north and the Long Beach Freeway (I-710) to the west. The proposed project encompasses an approximately 1.45-mile segment of Lakewood Boulevard, which is currently a six-lane divided arterial street (with three travel lanes in each direction) between the north and south City limits at Ashworth Street to Del Amo Boulevard. The existing roadway configuration varies from 100 to 220-foot public right-of-way consisting of travel lanes, striped and raised medians, parkways, and in some segments, easements and frontage roads on one or both sides of the street. The existing curb-to-curb width varies from 84 to 116 feet with parkways ranging from 5 to 28 feet along Lakewood Boulevard. The City's General Plan classifies Lakewood Boulevard as a Major Arterial street. As a regional corridor, Lakewood Boulevard is one of the major north-south arterial street connectors serving many communities in the southeast Los Angeles region from Downey to Long Beach.

Lakewood Boulevard provides convenient access to primarily adjacent single-family neighborhoods and serves as a regional travel corridor and destination for many commercial and retail businesses. Land uses along this portion of Lakewood Boulevard consist primarily of low-rise single-family residential homes which are buffered by a frontage street or directly abuts Lakewood Boulevard with street access on an adjacent parallel residential street. Commercial uses are located mostly along the southern portion of the project alignment with shopping center retail businesses, including Lakewood Center, a regional shopping mall with several anchor stores and a big box retailer. Other commercial uses along the project include neighborhood supporting retail uses near the South Street intersection.

Most of the parkways along Lakewood Boulevard are currently not designed for pedestrians as they are mostly landscaped with turf, mature street trees and other non-native landscape materials. Any existing sidewalks are primarily limited to major cross street intersections with direct access to adjacent commercial uses and/or nearby transit bus stop locations. A 14- to 28-foot-wide raised median also extends the length of the project and is landscaped with turf and mature ornamental trees.

The regional location of the project and local project area are depicted on **Figures 1 and 2**, respectively.

9. Description of project:

Background

Lakewood Boulevard serves as one of the City's major north-south transportation corridors. Per the City's General Plan Circulation Element, Lakewood Boulevard is one of several major thoroughfares designated as "Major Arterials" with a maximum of six travel lanes (three travel lanes in each direction between the north and south city limits). Located approximately 14 miles southeast of downtown Los Angeles and in proximity to several freeways (the I-605 freeway to the east, the I-710 freeway to the west and SR-91 freeway to the north), Lakewood is predominantly a low-density residential community with both regional and neighborhood-serving commercial uses. Due to its proximity to the Long Beach Municipal Airport and more distantly to the Ports of Los Angeles and Long Beach, Lakewood Boulevard provides another vital transportation corridor for the movement of goods and services within the City as well as a link to other parts in the southeast region of Los Angeles County. Today, because of population growth, employment growth, increased demand for goods movement and increasing traffic volumes, Lakewood Boulevard is expected to experience heavy congestion and safety issues in the future.

Project Funding

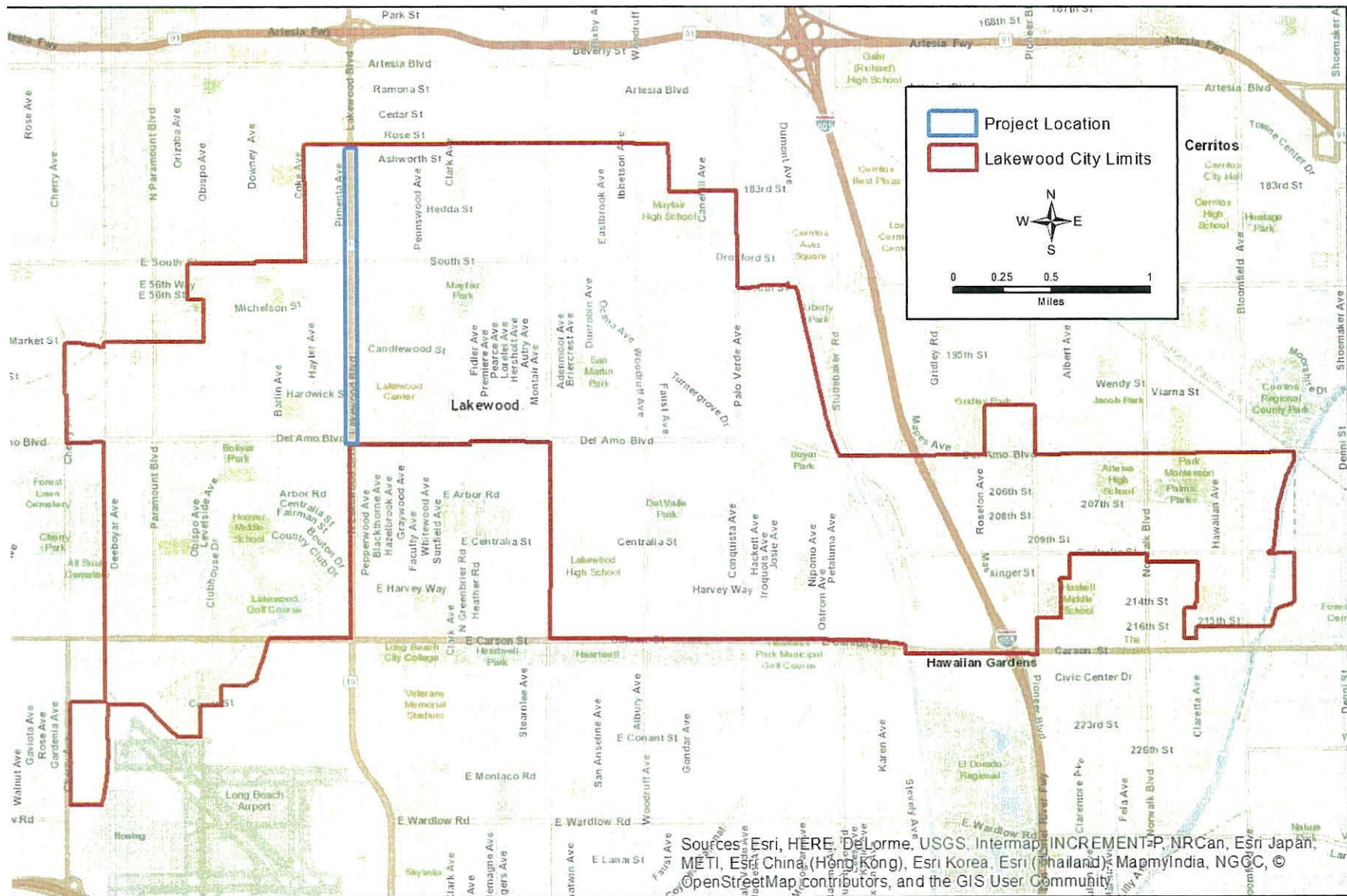
Funding for the project is comprised of local and regional transportation funding programs, including Measure R funds from the I/91/605 Hot Spots Expenditure Plan funds program. The total project cost is \$27.1 million, which includes \$16.4 million for bike path and roadway improvement design and construction and \$10.7 million for utility undergrounding. Local funding may also be used to provide improvements for signage, ADA ramps, streetscape improvements, storm drains and traffic signals.



Regional/Vicinity Map

Figure 1

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2017



Project Location

Figure 2

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2017

Purpose and Need

This project will feature a Class I bike path, median improvements, storm drain upgrades, utility undergrounding, streetscape improvements along Lakewood Boulevard, and traffic capacity enhancement through additional turn lanes. This project is needed because projected travel demand along Lakewood Boulevard and other regional corridors within the South Los Angeles region are anticipated to increase in the future, as the region is forecasted to grow 27 percent by 2035, with population and employment expected to grow at 11 and seven percent, respectively.¹ In order to offset the additional local traffic anticipated from congestion on I-605 and I-710, the project intends to increase the capacity of Lakewood Boulevard through a multi-modal approach.

In an effort to address future mobility issues and anticipated transportation deficiencies within the subregion, the Gateway Cities Council of Governments (GCCOG) developed the Gateway Cities Strategic Transportation Plan (STP).² The STP includes the development of subregional goals and objectives to guide future transportation investments, an assessment of baseline transportation system conditions to identify critical needs and deficiencies, and an initial list of projects and programs intended to address subregional objectives. One of the critical elements of the STP would incorporate an Active Transportation Plan which increases connectivity within and through the subregion, making bicycling and walking safer and more convenient and promoting transportation choice. Increasing transportation options furthers the Gateway Cities' goals of reducing air pollution, easing congestion, and improving public health.

As part of the Gateway Cities Active Transportation Program, Lakewood Boulevard is one of fifty-five major street corridors identified within the subregion to increase connectivity and safety through implementing bikeway and pedestrian improvements. The proposed project represents the initial segment of proposed bikeway and active transportation improvements along Lakewood Boulevard/Rosemead Boulevard connecting Pico Rivera, Downey, Bellflower, Paramount, Lakewood, and Long Beach.

Ultimately, these active transportation improvements (Class I bike path) are intended to:

- Connect multiple jurisdictions and maximize the benefit of bicycle and pedestrian investment through gap closures in the existing active transportation network,
- Provide improved connections to subregional employment and retail destinations, schools, and parks, and
- Provide improved bike accessibility of the Lakewood Boulevard Green Line Station and through access at I-5, I-405, SR-91, and I-105 freeways.

¹ State of California Department of Transportation & Los Angeles County Metropolitan Transportation Authority, *I-710 Corridor Project (Los Angeles County, California – District 07-LA-710-PM 4.9/24.9 EA 249900) Draft Environmental Impact Report/Environmental Impact Statement and Section 4(f) Evaluation – Executive Summary*, June 2012.

² The GCCOG is a California Joint Powers Authority that represents the governments of 28 jurisdictions located in the subregion. Its members are the cities of Artesia, Avalon, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, Industry, La Mirada, Lakewood, Long Beach, Lynwood, Maywood, Montebello, Norwalk, Paramount, Pico Rivera, Santa Fe Springs, Signal Hill, South Gate, Vernon, Whittier and unincorporated areas of Los Angeles County. The GCCOG's mission is to provide member governments with a unified voice to act collaboratively and advocate to improve issues related to transportation, air quality, housing, and economic development.

Project Components

The proposed project consists of implementing several “Complete Streets” improvements to accommodate multi-modal travel along this regional corridor and increase safety for vehicles, pedestrians and cyclists. Presently, some of the barriers to using active transportation along this initial segment of Lakewood Boulevard include:

- Discontinuous bike routes, lanes,
- Impassable or missing sidewalks, and
- Arterial streets/highways without crosswalks.

To improve multi-modal access along Lakewood Boulevard, a Class I bike path will be constructed along the existing parkway with dedicated access for bicyclists and pedestrians. As part of the complete streets project, Lakewood Boulevard will also include to the “maximum extent practicable” infiltration storm water treatment Best Management Practices (BMPs) in compliance with the Los Angeles County MS4 permit and City of Lakewood Low Impact Development (LID) Ordinance and Green Streets Policy.

The proposed Class I bike path are paved right-of-way for exclusive use by bicyclists, pedestrians, and other non-motorized modes of travel. To enhance safety, pedestrians and bicyclists will be separated by a landscape buffer incorporating a vegetated bio-swale and bio-infiltration basin. Included as part of the storm water quality treatment, an inverted center median will also be constructed to allow bio-infiltration, similar to the parkway bio-swales that will be included throughout much of the project length.

In order to accommodate the parkway improvements, a reduction of existing curb-to-curb dimensions of five to six feet will be required along the project. However, these reductions in the street width will not reduce capacity as six travel lanes will be maintained throughout Lakewood Boulevard. It is anticipated that any proposed reductions will be accompanied by corresponding reductions in the median and lane widths, as center median widths can be reduced up to 4 feet and existing curb lanes and through lanes may be reduced one foot to 12 feet and 11 feet, respectively. The typical parkway configuration would accommodate a five-foot wide bike lane and a separate sidewalk access for pedestrians which can vary between four to seven feet in width depending upon location. **Figure 3** depicts the limits of the project and refers to the following project segments (in **Figures 4 through 7**) which show the layouts of the proposed bike path, median, striping, sidewalk improvements, and existing/proposed project cross sections.

As the project is presently proposed, additional street right-of-way would be required along the east and west sides of Lakewood Boulevard to accommodate the parkway improvements. However, these ROW acquisitions are considered to be minor and will not result in significant changes to existing curb-to-curb conditions that would alter available service capacity on Lakewood Boulevard. At the northwest corner of Del Amo Boulevard and Lakewood Boulevard, an approximately 12 to 16-foot strip of existing parkway would be acquired to coincide with existing ROW extending northerly along Lakewood Boulevard. Similarly, an acquisition of a 10-foot strip of an existing utility easement from Southern California Edison abutting residential properties along the east side of Lakewood Boulevard from Andy Street to Ashworth Street would also be required for parkway improvements. Proposed ROW acquisitions will total approximately 16,356 square feet.

As median improvements will be modified to accommodate the travel lane requirements and the widening of the parkway areas to accommodate a Class I bike path, other project improvements

would include intersection and signal modifications, utility undergrounding, streetscape improvements, storm drain upgrades and street overlay and striping.

Intersection and Signal Modifications: Along with a Class I bike path, the proposed project will include minor roadway capacity enhancements that will consist of:

- Installation of traffic signal modifications including traffic signal poles, vehicle heads, pedestrian heads, vehicle detection, IISNS, conduit, controllers and service cabinets. The following is a list of the locations for the traffic signal modifications along Lakewood Boulevard:
 - Hardwick Street
 - Candlewood Street
 - South Street
 - Ashworth Street
- Installation of a second north-bound left-turn at the intersection of Lakewood Boulevard and Hardwick Street.

Traffic signals will be redesigned to maximize capacity and accommodate bicycle and pedestrian improvements. The project will also be designed to update ADA-compliant access ramps, driveways clearances and other features.

Utility Undergrounding: The project would place the existing Southern California Edison (SCE) power lines (66 kilovolt [kV] subtransmission and less than 66 kV distribution lines) and telecommunication facilities in underground ducts and vaults on both the east and west side of the roadway, improve distribution reliability, improve aesthetics, to improve pedestrian access and safety, and accommodate a Class I bike path.³ Currently, there are 13 power poles on the east side of Lakewood Boulevard and 30 power poles on the west side that would be removed as part of the undergrounding. Relocation of underground gas, electric and telephone facilities may be required to construct this component of the project. SCE will perform the actual undergrounding work.

Project components would generally include conversion of existing single circuit overhead subtransmission line and associated facilities to an underground position, including removal of subtransmission poles, and installation of ducts and structures with tubular steel pole (TSP) risers, vaults, switches and all associated cable from Lakewood Boulevard and Del Amo Boulevard north to Lakewood Boulevard and Ashworth Street. The undergrounding work will also consist of digging six-foot-deep and two-foot-wide trenches within the roadway. Conduit will be placed in the trench and encased in concrete per Southern California Edison Undergrounding Structures Standards. The trench will then be backfilled with appropriately-compacted soil/fill materials. The existing overhead utility poles will be removed when the undergrounding work has been completed.

Parkway and Streetscape Improvements: One of the principal goals of the proposed project is to convey a unique sense of identity to one of the City's major north-south corridors, as well as to increase accessibility and safety of pedestrians along this regionally significant boulevard. The

³ California Energy Commission GIS Open Data, http://www.arcgis.com/home/webmap/viewer.html?url=https://services3.arcgis.com/bWPjFyq029ChCGur/ArcGIS/rest/services/Transmission_Line/FeatureServer/0&source=sd

proposed conversion to drought adaptive landscaping along the parkways and medians will provide a new character and identity to the roadway corridor and at selected transit connections.

Other streetscape elements include:

- Installation of two (2) City entry monument signs at north and south City limits of Lakewood Boulevard. The entry signs will be lighted for nighttime illumination.
- Construction of two sets of bike lockers within the City of Lakewood's right-of-way, near the Lakewood Mall and transit stops.
- Installation of signing and striping.
- Replacement of stamped concrete pavement and sidewalk at Hardwick Street and Candlewood Street.
- Reconstruction and construction of new catch basins due to proposed parkway improvements.
- Implementation of Storm Water Quality improvements per the City of Lakewood's "Green Streets" policy.

Many of these elements are shown on the "Streetscape Concept Plan" (**Figures 8 through 14**). As depicted in **Figure 14**, the landscape concept for the project is represented as three typical street cross sections along the project. The landscape plan proposes to retain existing large, mature trees where feasible. For documentation of existing project conditions, **Figures 15 and 16** show the existing street and parkway conditions along Lakewood Boulevard. However, in order to accommodate the proposed drought adaptive planting palette and multi-modal access improvements, many existing street trees will be removed and replaced. The planting design will incorporate various drought adaptive ornamental plants such as agaves, aloe and ornamental grasses, mixed with a variety of drought adaptive groundcover and perennials along the center median. New streetlights and street trees along the parkway will provide additional enhancements and visual interest.

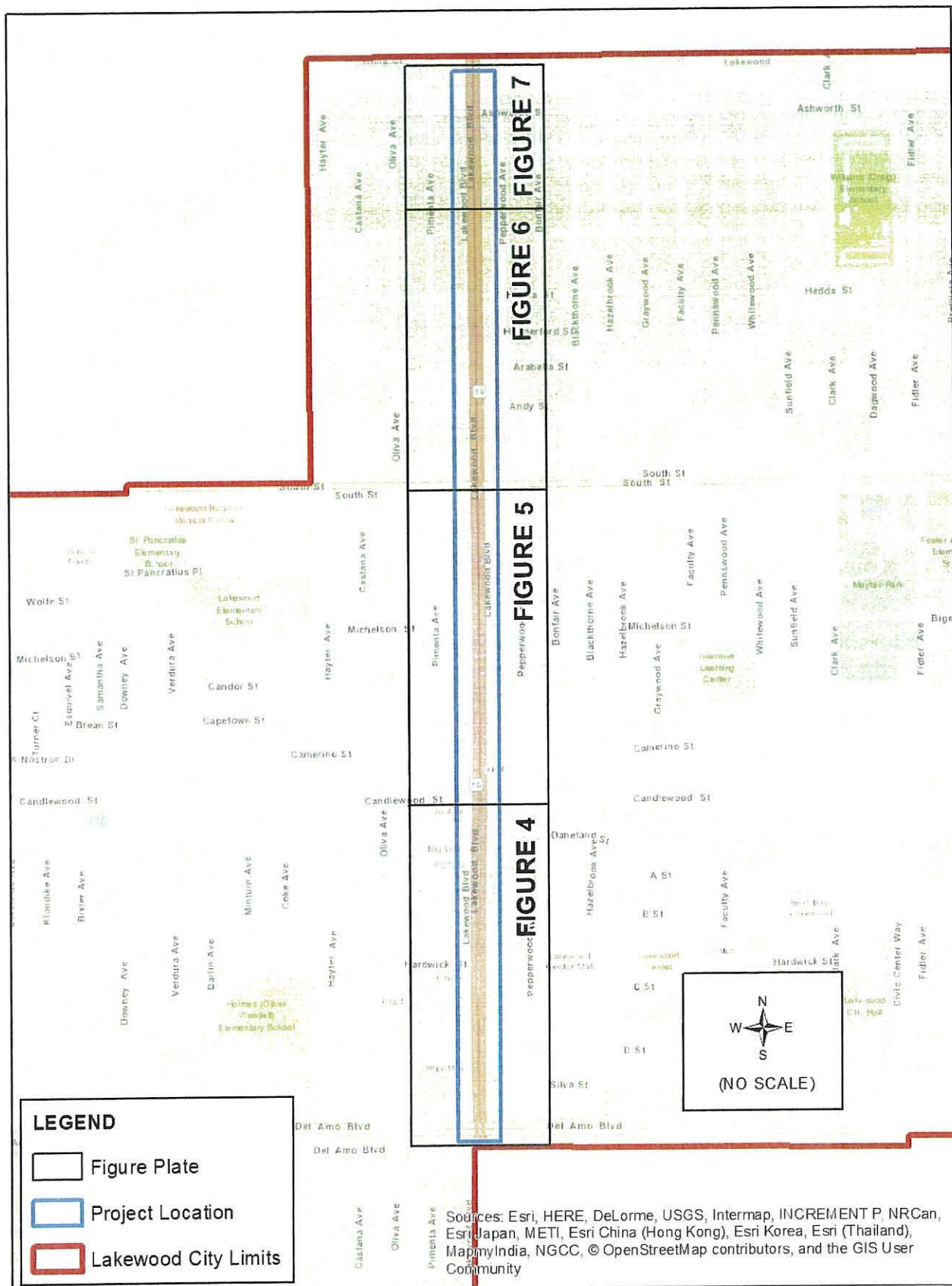
The project will repair, replace, and modify curbs, driveways and sidewalks. This work will increase accessibility, improve drainage conditions, and enhance storm water quality treatments. The total project length is approximately 12,122 linear feet. Between 90% and 95% of the sidewalk and gutter will be removed and replaced with new sidewalk and bike path including parkways where it currently does not exist. Generally, the work will involve removing the gutter and approximately a five-foot width of sidewalk; in some areas as much as ten feet of sidewalk will be removed. Where appropriate, sidewalk improvements will include installation or replacement with new access curb ramps in compliance with the Americans with Disabilities Act (ADA) requirements, as many existing sidewalk ramps do not meet ADA access standards.

Storm Water Quality Treatment: Per requirements for the Los Angeles County MS4 permit and City of Lakewood Low Impact Development (LID) Ordinance and Green Streets Policy, the project will improve/reduce existing drainage by installing water-quality treatment and underground stormwater detention facilities for groundwater discharge, where feasible, at existing and proposed storm drain locations. Proposed storm drain upgrades will include reconstructing 21 existing catch basins due to relocation of existing curbs. Of these, 18 catch basin locations will include installation of stormwater quality treatment and underground stormwater detention facilities along Lakewood Boulevard. Per Green Streets requirements, these treatment basins are intended to remove potential contaminants in runoff from discharging into stormwater facilities. Stormwater quality treatment and underground stormwater detention structures or devices will be prefabricated/manufactured by well-known and reputable manufacturers. These devices/structures will be specifically designed and fabricated to fit designated locations. Installation will occur along

parkways and involve removing portions of the sidewalk where they currently exist, and installation of the devices according to manufacturer's specifications. To increase groundwater recharge, the landscaped center medians will also be reconstructed as a bio-retention area with an inverted median to reduce nuisance rainwater and to prevent runoff to nearby roadways. Together, these storm drain upgrades of existing facilities will treat or reduce approximately 12,420 cubic feet or 92,900 gallons of stormwater during a typical one-hour storm event and a total of approximately 9.0 acres of pervious and impervious surfaces will be treated as a result of the project.⁴ Other potential storm water BMPs, where feasible may include infiltration trenches, porous pavement, and other LID treatment methods.

Street Overlay and Striping: After completion of all roadway, utility and parkway improvements, the project will repave Lakewood Boulevard with an asphalt overlay between Del Amo Boulevard to the north city limits. This resurfacing will first grind the top 2.25 inches of asphaltic concrete (AC) and portland cement concrete (PCC) and overlay with 2.25 inches of asphalt-concrete rubber hot mix (ARHM) pavement on the roadway surface. The final component of the project will include re-striping Lakewood Boulevard with three travel lanes in each direction as shown in **Figures 4 through 7**.

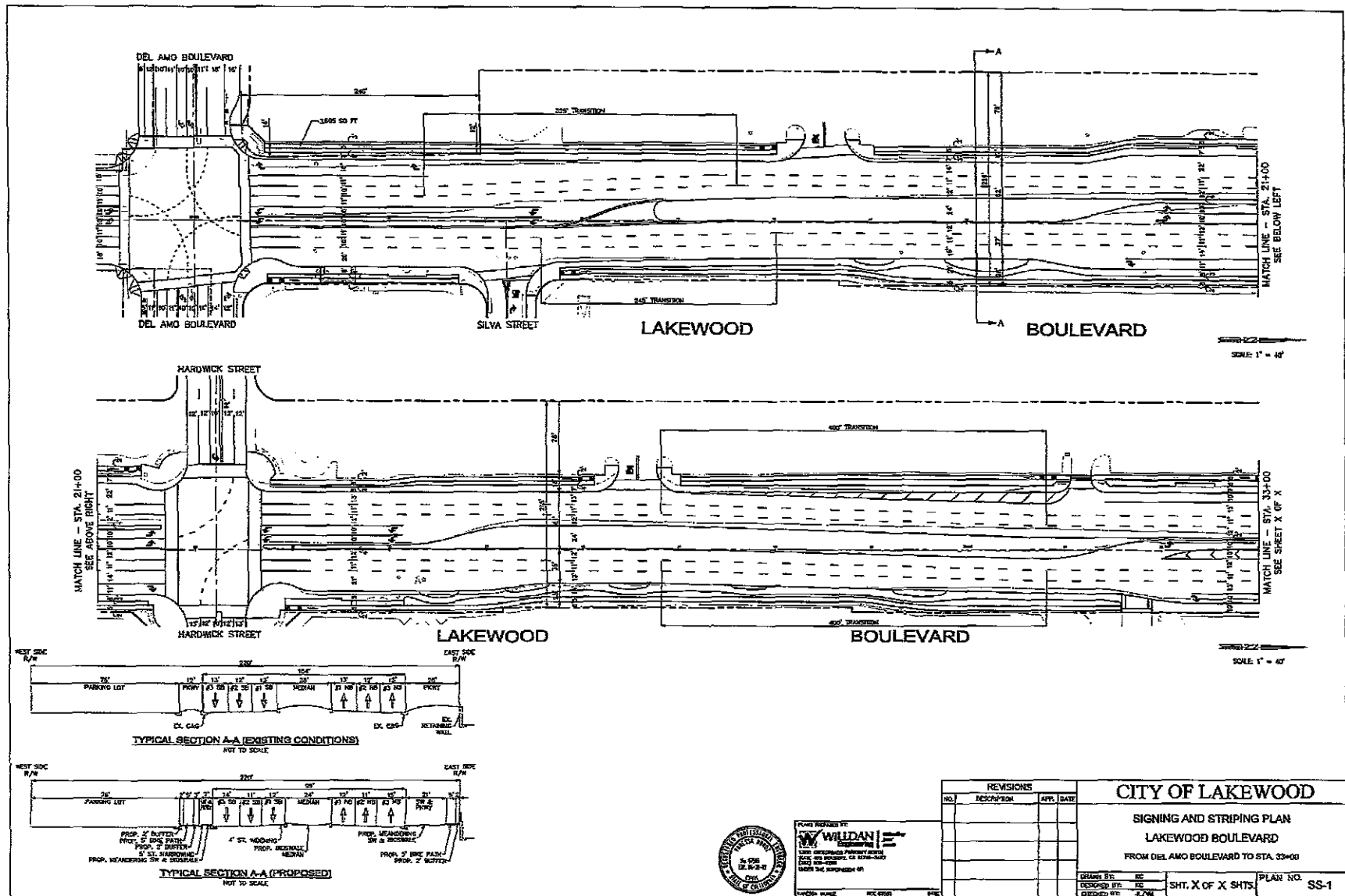
⁴ Based on the Los Angeles County Public Works Department 85th percentile – 24 hour Rain Map at City of Lakewood vicinity.



Lakewood Boulevard Key Map

Figure 3

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2017



Project Concept Design with (Class I) Bike Path

Figure 4

Lakewood Boulevard Capacity Enhancement Project
 Source: Willdan Engineering, 2018

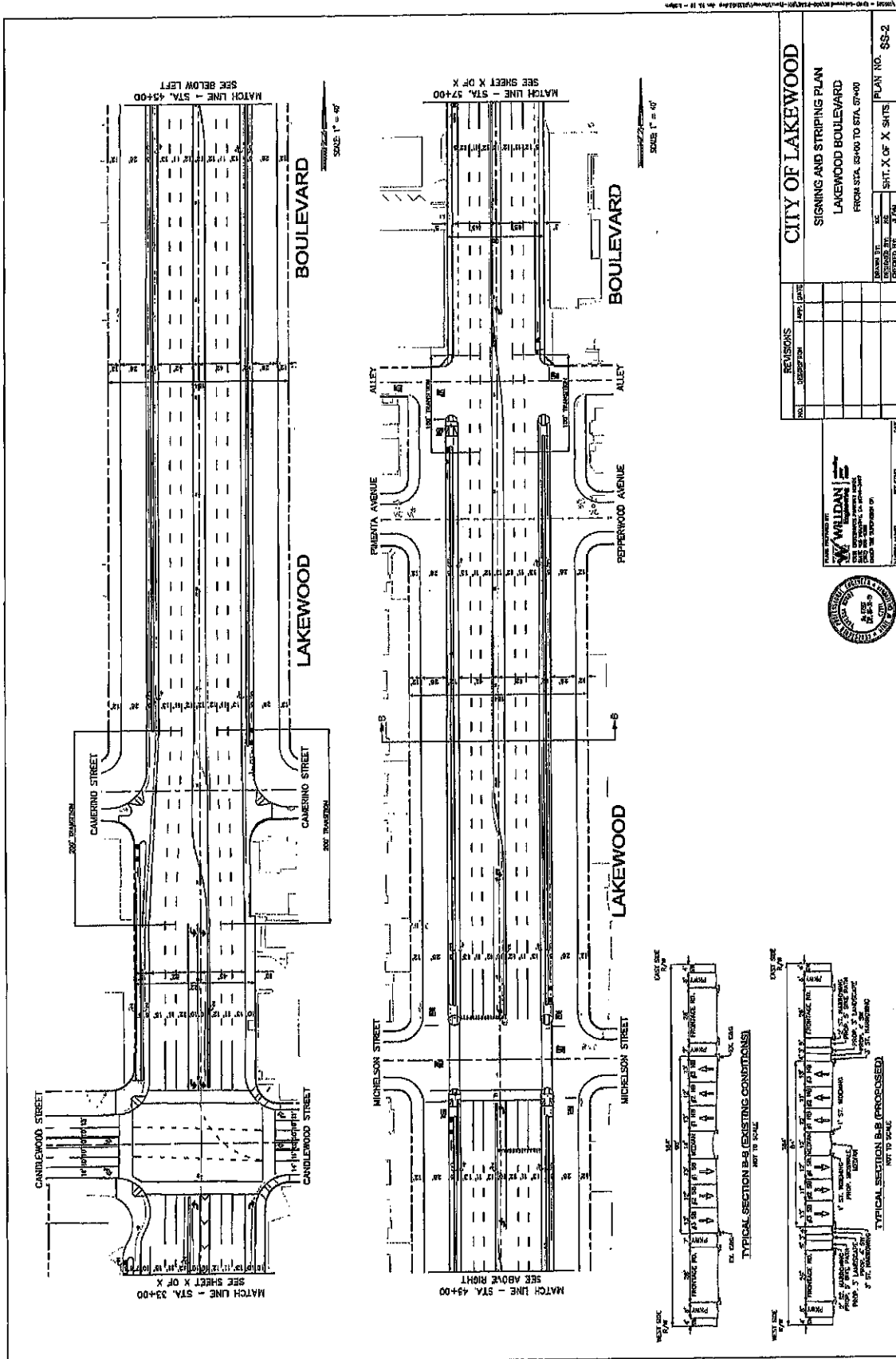


Figure 5
Lakewood Boulevard Capacity Enhancement Project
Source: Willidan Engineering 2018

Project Concept Design with (Class I) Bike Path

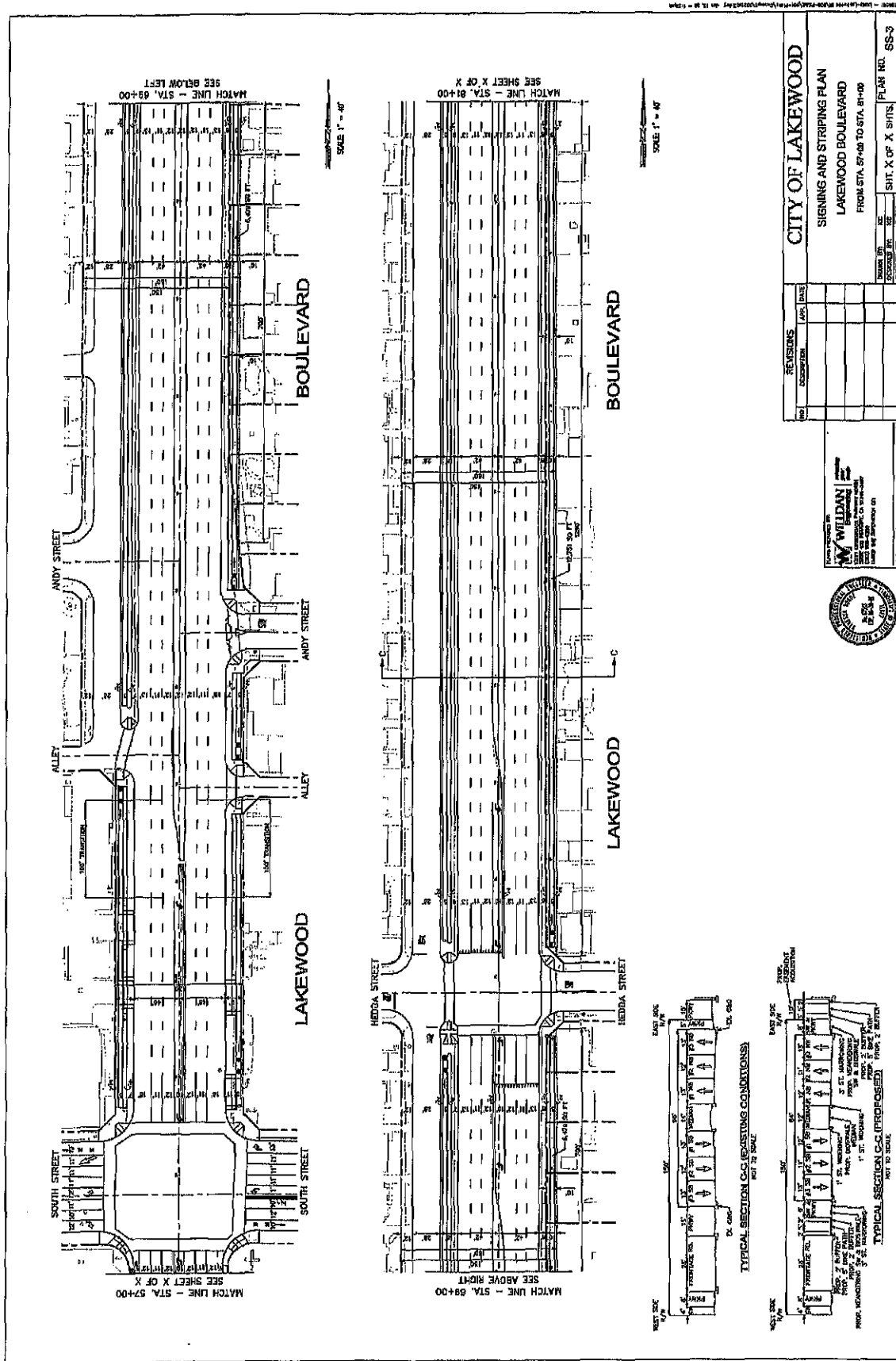


Figure 6
Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018

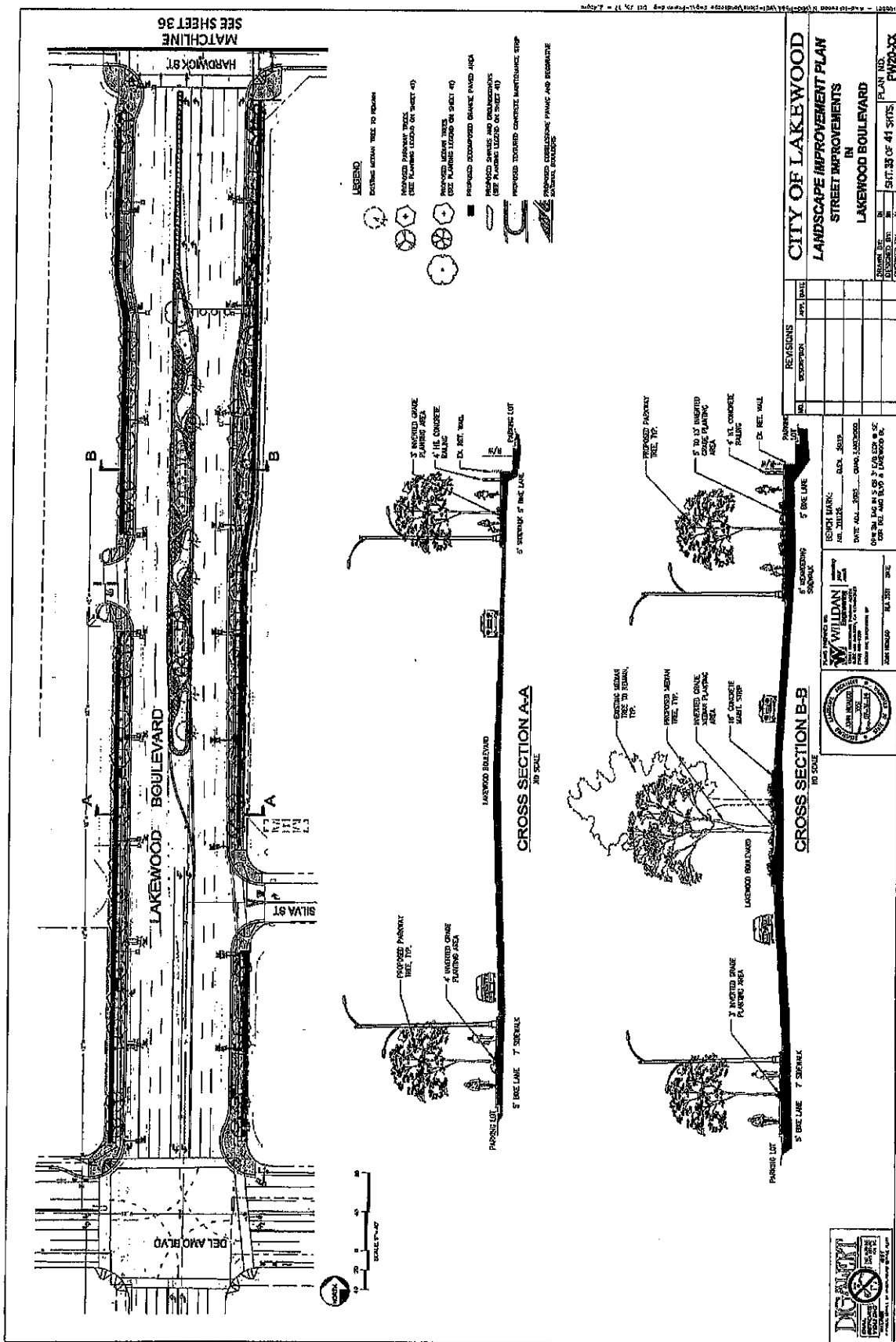
Project Concept Design with (Class I) Bike Path



Project Concept Design with (Class I) Bike Path

Figure 7

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018

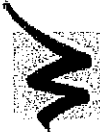


Streetscape Concept Plan

Figure 8

Lakewood Boulevard Capacity Enhancement Project

Source: Willdan Engineering, 2018



Streetscape Concept Plan

Figure 9

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018

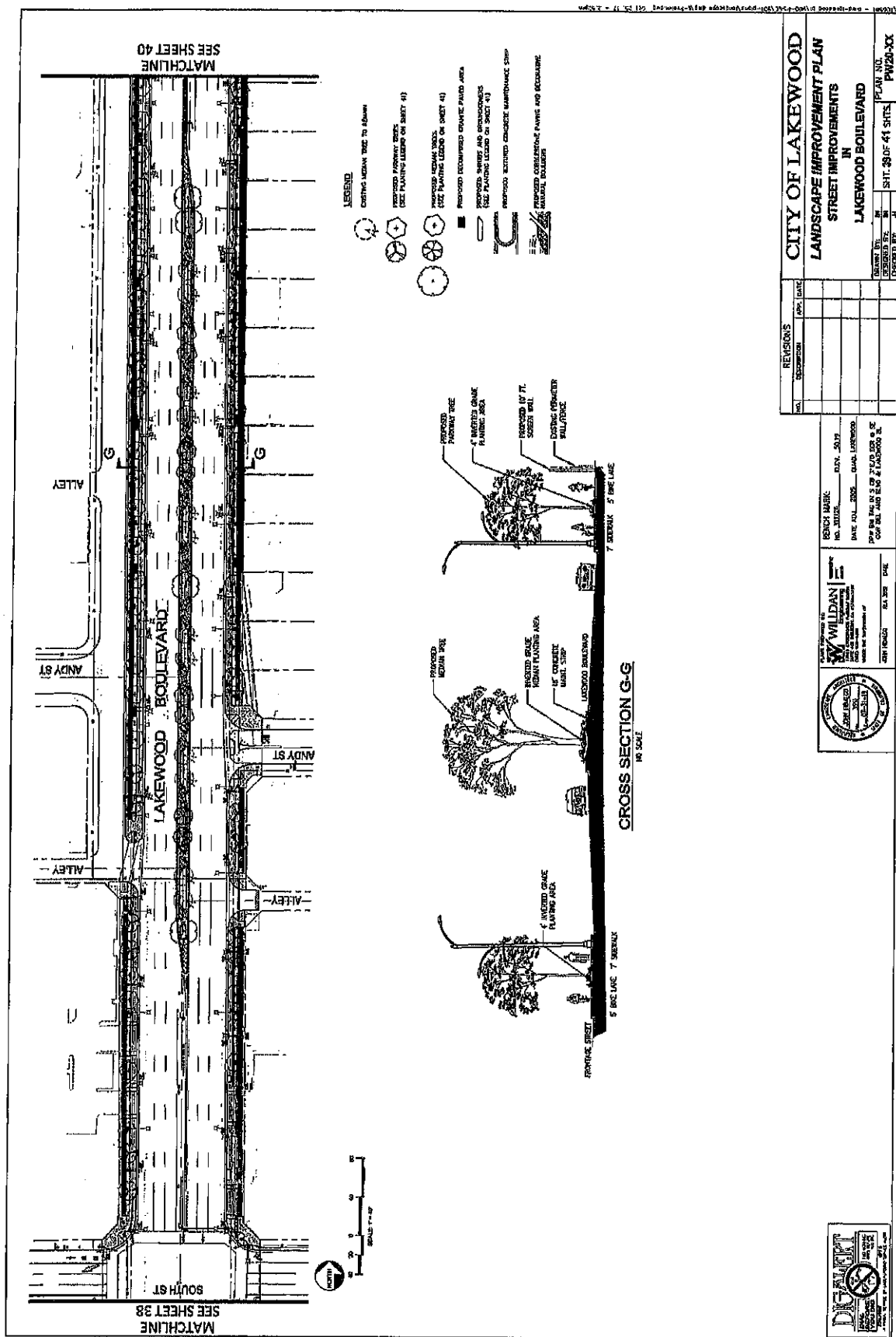
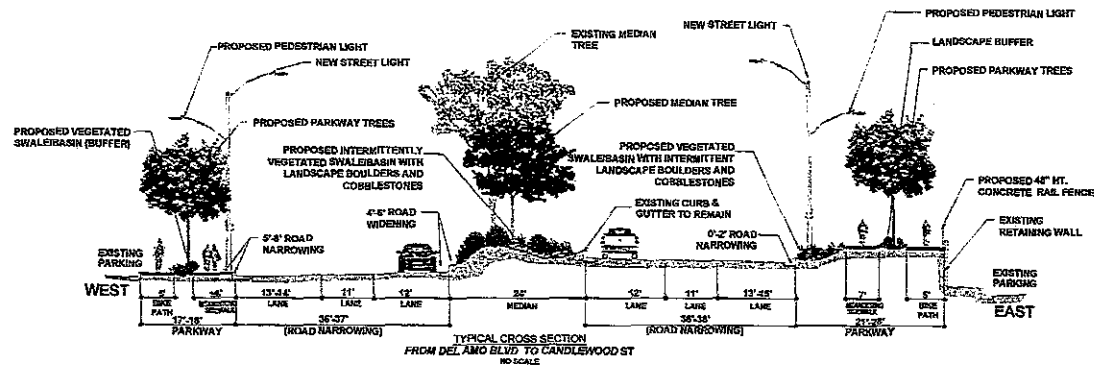


Figure 12
Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018

Streetscape Concept Plan

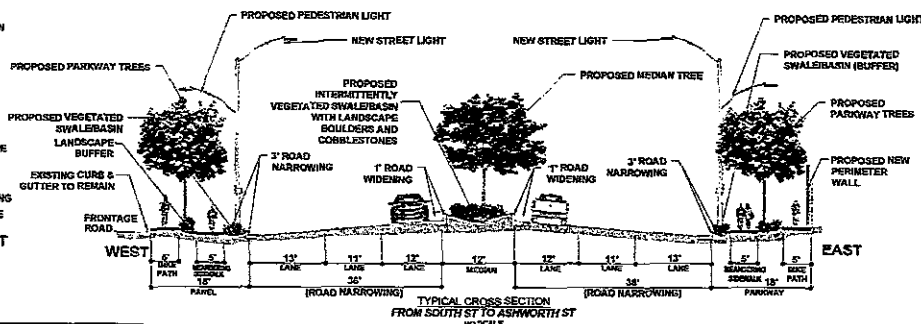
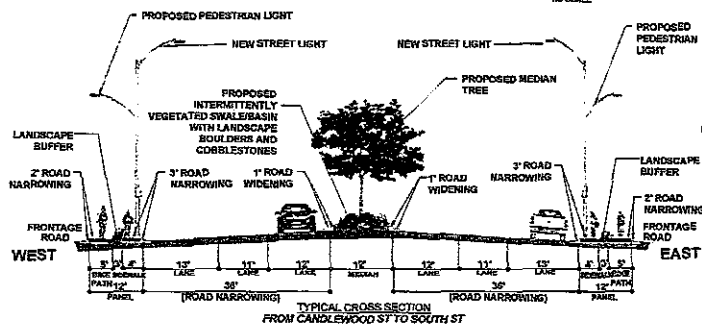


Figure 13



CONCEPTUAL CROSS SECTIONS

- BIKE LANE**
 - CLASS I
- PEDESTRIAN**
 - CONCRETE PAVED SIDEWALK
- LANDSCAPE**
 - DROUGHT ADAPTIVE PLANTING SPECIES
 - DRIP IRRIGATION WITH SMART CONTROLLER
- LOW IMPACT DEVELOPMENT (LID)**
 - CURB OPENINGS ALONG PARKWAY WITH VEGETATED BIO-INFILTRATION BASINS
- UTILITY**
 - UNDERGROUND EXISTING OVERHEAD FACILITY



EXISTING CONDITIONS

PROPOSED IMPROVEMENTS



PLANS PREPARED BY
WILLDAN Engineering
10000 CRENSHAW PARKWAY, SUITE 200
LOS ANGELES, CA 90045-3402
UNDER THE SUPERVISION OF
VERONICA MANCE
DATE: _____

REVISIONS		
NO.	DESCRIPTION	DATE

CITY OF LAKEWOOD

CONCEPT PLAN 2A

LAKEWOOD BOULEVARD

CROSS SECTION

DRAWN BY: **ERI**
DESIGNED BY: **ERI**
CHECKED BY: **JL/PTM**

SHT X OF X SHTS

PLAN NO.
CONCEPT



Streetscape Concept Plan

Figure 14

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018



Southerly west side view from Ashworth Street intersection



Northerly west side view from South Street intersection



Southerly east side view from Ashworth Street intersection



Northerly east side view from South Street intersection



Project Site Photographs

Figure 15

Lakewood Boulevard Capacity Enhancement Project
Source: Willdan Engineering, 2018



Southerly west side view from Candlewood Street intersection



Northerly east side view from Hardwick Street intersection



Southerly east side view from Candlewood Street intersection



Southerly view from Hardwick Street intersection



Project Phasing and Construction Schedule

The Lakewood Boulevard "Complete Streets" improvements will be constructed in two (2) separate phases: The first phase consisting of the utility undergrounding work to be performed by Southern California Edison and the second phase of the project to construct the bikeway, streetscape and roadway improvements which will occur separately on each side of the street to minimize disruption to local traffic and businesses during construction.

No start date has been determined at this time due to funding considerations. However, the four primary construction activities will be (1) demolition and excavation of the parkway and roadway, (2) construction of concrete curbs, (3) paving and striping, and (4) landscaping of parkways and center medians. Demolition and excavation will remove approximately 4,300 cubic yards of material. This work is anticipated to take approximately five (5) months to complete. Construction of the parkways and medians will require pouring of approximately 2,900 cubic yards of material. This work is anticipated to take approximately eight (8) months to complete. Paving and striping will require importing approximately 4,500 cubic yards of material. This work is anticipated to take approximately three (3) months to complete. Landscaping of the parkways and medians will require importing of approximately 4,400 cubic yards of material. This work is anticipated to take approximately five (5) months to complete. Based on the above construction activities, approximately twenty (20) months is anticipated to complete improvements on one side of the street with some concurrent activities occurring during paving and landscaping. Hence, a minimum of approximately 36 to 40 months will be required to complete all roadway, parkway and streetscape improvements.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The project is a City of Lakewood project, which is being developed and coordinated with its Gateway Cities Council of Governments (GCCOG). Approvals are required from the following agencies:

Los Angeles County Metropolitan Transportation Authority (Metro)

- Financing

Gateway Cities Council of Governments

- Participation Agreements

II. References

The following items are also referenced where appropriate in the Environmental Checklist Form:

California Energy Commission GIS Open Data,
http://www.arcgis.com/home/webmap/viewer.html?url=https://services3.arcgis.com/bWPjFyg029ChCGur/ArcGIS/rest/services/Transmission_Line/FeatureServer/0&source=sd

California Resources Agency, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, and Santa Monica Mountains Conservancy, *Common Ground – from the Mountains to the Sea: Watershed and Open Space Plan – San Gabriel and Los Angeles Rivers*, October 2001.

California, State of, Department of Transportation & Los Angeles County Metropolitan Transportation Authority, *I-710 Corridor Project (Los Angeles County, California – District 07-LA-710-PM 4.9/24.9 EA 249900) Draft Environmental Impact Report/Environmental Impact Statement and Section 4(f) Evaluation – Executive Summary*, June 2012.

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Lakewood, City of, *City of Lakewood Comprehensive General Plan – Technical Background Report*, November 1996. Prepared by City of Lakewood Community Development Department.

Lakewood, City of, *Municipal Code*

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Landrum and Brown, *Greenhouse Gas Assessment for: Lakewood Boulevard Improvements*, June 7, 2018

Landrum and Brown, *Noise Assessment for: Lakewood Boulevard Capacity Enhancement Project*, February 17, 2018

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U.S. Department of Transportation, Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2006, p. 12-12.

Willdan Engineering, *Traffic Impact Assessment Memorandum*, December 14, 2017.

12. Consultation and coordination

The following individuals were consulted in the preparation of this document:

- Max Withrow, P.E., Assistant Director of Public Works, City of Lakewood
- Bill Pagett, Consulting City Engineer, City of Lakewood

13. Report preparers

The following consulting firms assisted the City of Lakewood in the preparation of this Initial Study:

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Responsibility: **Cultural Resources Assessment**

PURPOSE OF THE INITIAL STUDY

The proposed Lakewood Boulevard Capacity Enhancement Project is analyzed in this Initial Study, in accordance with the California Environmental Quality Act (CEQA), to determine if approval of the Project would have a significant impact on the environment. This Initial Study has been prepared pursuant to the requirements of CEQA, under Public Resources Code 21000-21177, of the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387) and under the guidance of the City of Lakewood. The City of Lakewood is the Lead Agency under CEQA and is responsible for preparing the Initial Study for the Project.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. For each identified "Potentially Significant Impact," mitigation measures are identified in this document that can reduce the impacts to "Less Than Significant With Mitigation Incorporated":

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Population and Housing
<input type="checkbox"/>	Agricultural and Forestry Resources	<input type="checkbox"/>	Hazards and Hazardous Materials	<input checked="" type="checkbox"/>	Public Services
<input checked="" type="checkbox"/>	Air Quality	<input type="checkbox"/>	Hydrology and Water Quality	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Land Use and Planning	<input checked="" type="checkbox"/>	Transportation and Traffic
<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Mineral Resources	<input checked="" type="checkbox"/>	Tribal Cultural Resources
<input type="checkbox"/>	Geology and Soils	<input type="checkbox"/>	Noise	<input type="checkbox"/>	Utilities and Service Systems
				<input checked="" type="checkbox"/>	Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

 I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

 X I find that although the proposed project could have a significant effect on the environment, there will not be significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

 I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

 I find that proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

 I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Lisa Ann Rapp
Signature

February 25, 2019
Date

Lisa Rapp
Director of Public Works
City of Lakewood

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factor as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including offsite as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:
 - a) Earlier Analysis Used. Identify and state where they are available for review.
 - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify: a) The significance criteria or threshold, if any, used to evaluate each question; and b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
---------	--------------------------------------	--	------------------------------------	--------------

I. AESTHETICS – Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Have a substantial adverse effect on a scenic vista? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Substantially degrade the existing visual character or quality of the site and its surroundings? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 1220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

III. AIR QUALITY – 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 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)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Expose sensitive receptors to substantial pollutant concentrations? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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

☐ ☐ ☒ ☐

IV. BIOLOGICAL RESOURCES – Would the project:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

V. CULTURAL RESOURCES – 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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

VI. GEOLOGY AND SOILS – Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
- ii) Strong seismic ground shaking?
- iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| iv) Landslides? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VII. GREENHOUSE GAS EMISSIONS – Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

VIII. HAZARDS AND HAZARDOUS MATERIALS –

Would the project:

- | | | | | |
|--|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

IX. HYDROLOGY AND WATER QUALITY – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Violate any water quality standards or waste discharge requirements? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| f) Otherwise substantially degrade water quality? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| j) Inundation by seiche, tsunami, or mudflow? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

X. LAND USE AND PLANNING – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XI. MINERAL RESOURCES – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XII. NOISE – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIII. POPULATION AND HOUSING – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIV. PUBLIC SERVICES

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| i. Fire protection? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ii. Police protection? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| iii. Schools? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| iv. Parks? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| v. Other public facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XV. RECREATION

- | | | | | |
|--|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XVI. TRANSPORTATION/TRAFFIC – Would the project:

- | | | | | |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XVII. TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) A resource determined by the lead agency, in its direction and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

XVIII. UTILITIES AND SERVICE SYSTEMS – Would the project:

- | | | | | |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

- | | | | | |
|--|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

EXPLANATION OF CHECKLIST DETERMINATIONS

I. AESTHETICS

Would the project:

a. Have a substantial adverse effect on a scenic vista?

No Impact. The City of Lakewood General Plan identifies no scenic vistas in the immediate vicinity of the project site, and Lakewood Boulevard is not designated as a scenic highway. Moreover, the surrounding area is relatively flat and wholly urbanized with commercial, residential and institutional uses. The proposed project would not create above-ground structures that would obstruct views – rather, the project would remove overhead utility lines and supporting poles that interrupt the near viewshed. Accordingly, no impacts to a scenic vista, or to intermediate views along Lakewood Boulevard are anticipated.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a city-designated scenic highway?

No Impact. No officially designated or eligible State scenic highways are within the City boundary or in proximity to the City.

c. Substantially degrade the existing character or quality of the site and its surroundings?

Less Than Significant. The project area comprises the segment of Lakewood Boulevard from Ashworth Street to Del Amo Boulevard, a commercial corridor bordered by a mix of commercial retail, restaurants, and residential uses within an urban environment characterized mostly by low to mid-rise development. According to the City of Lakewood General Plan Conservation Element, there are no formally designated scenic resources or historic buildings along the proposed project alignment.⁵

Although no longer classified as a State Highway, Lakewood Boulevard has continued to accommodate regional travel between the City's north and south city limits as part of the proposed project. As such, Lakewood Boulevard serves as the gateway to the City and maintains mature trees on both landscaped medians and parkways along the existing project alignment.

The proposed project would disrupt the streetscape appearance along Lakewood Boulevard for more than a year. Street and parkway excavation for utility trenches and street widening, tree removal, and the presence of large construction equipment could be perceived as unsightly. However, the project would ultimately re-surface the street, remove and replace the existing landscaping, including adding gateway entry sign monuments on the median where none currently exist. The project also proposes replacing existing landscaping with drought adaptive landscape materials and placing underground existing overhead utilities to further enhance scenic values along this major corridor. During construction, standard City construction requirements would ensure that all work areas are kept clean and free of litter, and excess excavated material would be promptly transported off-site for disposal or recycling.⁶

⁵ City of Lakewood, *The City of Lakewood Comprehensive General Plan*, November 1996, pp. 4-1 to 4.5

⁶ City of Lakewood, Municipal Code, Section 7140, *Roadside Trees*, (2007), available at <http://weblink.lakewoodcity.org/WebLink8/DocView.aspx?id=68334&dbid=0> (accessed November 7, 2017).

Because the project, when complete, would improve Lakewood Boulevard's overall appearance, impacts associated with scenic resources and the project area's visual character are anticipated to be less than significant. No mitigation measures are required.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. The proposed project will not introduce new light sources in the project area that would result in light and glare impacts. The proposed project would relocate existing street lighting to accommodate widening along some portion of the project including proposed bikeway improvements along the parkways. The amount and quality of light in the project area would not be expected to change as no new lamps are proposed. As explained above, the project area is highly urbanized with low-rise commercial and residential development, and lacks important views or landmarks. Accordingly, no impacts associated with light or glare would occur.

II. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The project site is wholly within an urbanized area within the City of Lakewood, has not been used for farmland for generations, and is not shown on California state farmland maps.⁷ No impacts associated with farmland conversion are anticipated.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The project is located within the right-of-way of a regional arterial highway along an urbanized commercial corridor in Lakewood. The project site is not zoned for agricultural uses, and is not subject to a Williamson Act contract.

⁷ California Department of Conservation, *California Important Farmland Finder*, available at <https://maps.conservation.ca.gov/dlrp/ciff/> (accessed July 12, 2018).

d. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

e. Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site is not zoned for forest land/timber production, and does not contain forest land. No associated impacts with respect to conflicts with zoning or conversion of forest land are anticipated.

III. AIR QUALITY

The following analysis of air quality impacts is based on the *Air Quality Assessment for: Lakewood Boulevard Improvements* ("Air Quality Study"), prepared by Landrum and Brown, Inc., April 2, 2018 (provided in Appendix A).

Would the project:

a. Conflict with or obstruct implementation of the AQMP or Congestion Management Plan?

No Impact. A consistency determination plays an important role in local agency project review by linking local planning and individual projects to the relevant Air Quality Management Plan (AQMP). It fulfills the CEQA goal in informing decision-makers of the environmental efforts of the project under consideration at an early enough stage to ensure that air quality concerns are fully addressed. It also provides that local agency with ongoing information as to whether they are contributing to clean air goals contained in the AQMP. The most recent adopted comprehensive plan for the project area is the 2016 AQMP, which was adopted by the South Coast Air Quality Management District (SCAQMD) in March 3, 2017.⁸

The proposed project, constructing utility, roadway and parkway improvements including installation of a Class I bike path, would comply with the SCAQMD AQMP because except for the construction process, the project, as mostly an active transportation project, would likely reduce, if not, then at least, maintain current emissions as no significant vehicle service capacity would be increased. The proposed project would not result in an increase in population, employment, or housing. Therefore, the proposed project does not have the potential to substantially affect housing, employment, and population projections within the Southern California region, which is the basis of the AQMP projections. The proposed project would not conflict or obstruct implementation of the AQMP in any way. Therefore, no impact would occur.

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

⁸ South Coast Air Quality Management District, *2012 Air Quality Management Plan (AQMP)*, available at <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2012-air-quality-management-plan> (accessed May 23, 2018).

Less than Significant Impact With Mitigation. The project site is located within the South Coast Air Basin (Air Basin), which is characterized by relatively poor air quality. State and federal air quality standards are sometimes exceeded in many parts of the Air Basin. The project would contribute to local and regional air pollutant emissions. SCAQMD regional and local significance thresholds for construction and operation were used as noted in **Tables 1 and 2**, below. Based on the following analysis, implementation of the project would result in less than significant impacts relative to the daily significance thresholds for criteria air pollutant emissions established by SCAQMD.

Table 1
SCAQMD Regional Pollutant Emission Thresholds of Significance (lbs./day)

	CO	VOC	NOx	PM ₁₀	PM _{2.5}	SOx
Construction	550	75	100	150	55	150
Operation	550	55	55	150	55	150

Table 2
Localized Significance Thresholds of Significance (lbs./day)

	CO	NOx	PM ₁₀	PM _{2.5}
Construction	1,530.0	123.0	14.0	8.0
Operation	1,530.0	123.0	4.0	2.0

The proposed project would consist of relocation of existing overhead utilities and parkway and roadway improvements including installation of a Class I bike path. The construction emissions have been analyzed for both regional and local air quality impacts as well as for potential toxic air impacts.

The California Emissions Estimator Model (CalEEMod) model was used to calculate the construction-related regional emissions from the proposed project, and the input parameters utilized in this analysis have been detailed in Section 2.2 of the Air Quality Study. The worst-case summer or winter daily construction-related criteria pollutant emissions from the proposed project for each phase of construction activities are shown in **Table 3** and the CalEEMod daily printouts. **Table 4** presents the total emissions during these concurrent construction activities which are the sum of the emissions shown in Table 3 for the concurrent activities. Tables 3 and 4 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

The local air quality emissions from construction were analyzed through utilizing the methodology described in *Localized Significance Threshold Methodology (LST Methodology)*, prepared by SCAQMD, revised October 2009. The LST Methodology found the primary criteria pollutant emissions of concern are nitrogen oxides (NOx), carbon monoxide (CO), and particulate matter less than 10 micrometers in diameter (PM₁₀) and less than 2.5 micrometers in diameter (PM_{2.5}). In order to determine if any of these pollutants require a detailed analysis of the local air quality impacts, each phase of construction was screened using the SCAQMD's Mass Rate LST Look-up Tables. The Look-up Tables were

developed by the SCAQMD in order to readily determine if the daily on-site emissions of CO, NO_x, PM₁₀, and PM_{2.5} from the proposed project could result in a significant impact to the local air quality. Table 5 shows the on-site emissions from the CalEEMod model for the different construction phases and the calculated emission thresholds that have been detailed in Section 2.2 of the Air Quality Study.

The data provided in **Tables 5 and 6** shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. Therefore, project construction would not cause significant local air quality impacts. Additionally, project contractors must comply with the fugitive dust control measures required by SCAQMD's Rule 403. SCAQMD Rule 403 is a regulation implementing provisions of the California Health and Safety Code that prohibits any person to cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that: (a) the dust remains visible in the atmosphere beyond the property line of the emission source; or (b) the dust emission exceeds twenty percent opacity if the dust emission is the result of movement of a motorized vehicle. Compliance with Rule 403 would further decrease construction emissions.

Table 3
Total Construction Emissions by Activity

Activity (Construction Year)	Daily Emissions (lbs./day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Trenching (2019)	12.2	14.2	1.6	1.0	0.9	0.0
Trenching (2020)	20.3	18.4	2.1	1.3	1.1	0.0
Demolition (2020)	20.0	16.7	1.9	1.2	0.9	0.0
Construction (2020)	5.2	5.9	39.0	0.3	0.3	0.0
Construction (2021)	18.0	39.2	3.7	10.4	6.3	0.0
Paving (2021)	12.2	14.2	1.6	1.0	0.9	0.0
Architectural Coating (2021)	12.0	13.3	1.5	0.9	0.8	0.0
Site Preparation (2021)	42.5	56.5	5.8	4.2	2.7	0.1
Significance Threshold	550	100	75	150	55	150
Exceeds Threshold?	No	No	No	No	No	No

Source: Landrum & Brown, Table 7

Table 4
Total Concurrent Construction Emissions

Activity (Construction Year)	Daily Emissions (lbs./day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Trenching, Demolition and Construction (2020)	74.8	88.3	9.4	6.5	4.5	0.2
Construction, Paving, Architectural Coating, Site Preparation (2021)	58.2	78.4	46.6	13.0	8.2	0.1
Significance Threshold	550	100	75	150	55	150
Exceeds Threshold?	No	No	No	No	No	No

Source: Landrum & Brown, Table 8

Table 5
On-Site Construction Emissions by Construction Activity

Activity (Construction Year)	Daily Emissions (lbs./day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
Trenching (2019)	11.1	12.3	0.9	0.8
Trenching (2020)	19.4	17.9	1.1	1.0
Demolition (2020)	19.2	16.3	0.9	0.9
Construction (2020)	13.3	12.2	0.7	0.6
Construction (2021)	5.0	5.9	0.3	0.3
Paving (2021)	11.1	12.3	0.9	0.8
Architectural Coating (2021)	11.0	11.4	0.8	0.7
Site Preparation (2021)	41.4	53.8	3.9	2.6
Local Significance Threshold	1,530.0	123.0	14.0	8.0
Exceeds Threshold?	No	No	No	No

Source: Landrum & Brown, Table 9

Table 6
On-Site Emissions by Concurrent Construction Activities

Activity	Daily Emissions (lbs./day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
Trenching, Demolition and Construction, (2020)	71.9	83.2	5.8	4.3
Construction, Paving, Architectural Coating, Site Preparation (2021)	54.2	71.1	11.8	7.9
Local Significance Threshold	1,530.0	123.0	14.0	8.0
Exceeds Threshold?	No	No	No	No

Source: Landrum & Brown, Table 10

In the long-term, the proposed project roadway and parkway improvements are designed to support active transportation goals and improve safety along Lakewood Boulevard. Operation of the proposed project would not generate any new stationary or mobile sources of emissions, and therefore would not contribute to an increase in criteria pollutants. No long-term air quality impacts would occur.

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

Less than Significant Impact. Cumulative projects include local development as well as growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel throughout the local area. Therefore, from an air quality perspective, the cumulative analysis would extend beyond any local projects and, when wind patterns are considered, would cover an even larger area. Accordingly, the cumulative analysis for the project's air quality must be generic by

nature. The project area is out of attainment for ozone, PM10 and PM2.5. In accordance with CEQA Guidelines Section 15130(b), this analysis of cumulative impacts incorporates a three-tiered approach to assess cumulative air quality impacts.

- Consistency with the SCAQMD project-specific thresholds for construction and operations.
- Project consistency with existing air quality plans
- Assessment of the cumulative health effects of the pollutants

Consistency with SCAQMD Project-Specific Emissions Thresholds

The project site is located in the South Coast Air Basin, which is currently designated by the Environmental Protection Agency (EPA) for federal standards as a nonattainment area for ozone and PM2.5 and by the California Air Resources Board (CARB) for the State standards as a nonattainment area for ozone, PM10, and PM2.5. The regional ozone, PM10, and PM2.5 emissions associated with construction of the proposed project have been calculated in Section 2.2 of the Air Quality Study. The analysis found that development of the proposed project would result in less than significant regional emissions of volatile organic compounds (VOCs) and NOx (ozone precursors), PM10, and PM2.5 during construction of the proposed project. Therefore, a less than significant cumulative impact would occur from construction of the proposed project.

The greatest cumulative operational impact on the air quality of the Air Basin would be the incremental addition of pollutants mainly from increased traffic from residential, commercial, and industrial development. In accordance with SCAQMD methodology, projects that do not exceed SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. As the project will likely reduce operational emissions due to increased multi-modal travel with only minimal added maintenance equipment emissions for new landscape and streetscape amenities, this project would create a less than significant cumulative impact with respect to long-term emissions.

Consistency with Air Quality Plans

The SCAQMD Air Quality Management Plan (AQMP) noted in part (a) above is a regional blueprint for achieving air quality standards and healthful air. The most recent 2016 AQMP represents a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures. Generally, the AQMP focuses on reducing emissions from stationary (factories, refineries, etc.) and mobile (vehicles, trucks, buses, other petrochemical-fueled engines, etc.) sources.⁹

The proposed project consists of a utility, roadway and parkway improvements including construction of a Class I bike path that is within and immediately adjacent to the existing rights-of-way for Lakewood Boulevard and the cross streets within the project study area. The project would not of itself *cause* new vehicle trips, but the new bike path may result in vehicle trips being replaced by bicycle trips, reducing locally-generated vehicle emissions. Accordingly, the project is consistent with the 2016 AQMP goals.

⁹ South Coast Air Quality Management District, *Final 2016 AQMP-CARB/EPA/SIP Submittal*, available at <http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp> (accessed July 13, 2018).

Cumulative Health Impacts

The Air Basin is designated as nonattainment for ozone, PM10, and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards are set to protect public health, including the health of sensitive individuals (elderly, children, and the sick). Therefore, when the concentrations of those pollutants exceed the standard, it is likely that some sensitive individuals in the population would experience health effects. The regional analysis detailed in Section 2.2 of the Air Quality Study found that the proposed project would not exceed the SCAQMD regional significance thresholds for VOC and NOx (ozone precursors), PM10, PM2.5. As such, the proposed project would result in a less than significant cumulative health impact.

d. Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The proposed project would not expose sensitive receptors to substantial pollutant concentrations. The local concentrations of criteria pollutant emissions produced in the nearby vicinity of the proposed project which may expose sensitive receptors to substantial concentrations have been calculated in Section 2.2 of the Air Quality Study for construction which are discussed below. As stated above, long-term operational impacts from the project will have minimal to no significant impact resulting from future vehicle emissions. As such, the discussion below includes an analysis of the potential impacts from toxic air contaminant emissions resulting from only construction activities. The nearest off-site sensitive receptors are single-family residences located as near as 25 feet from the proposed roadway and parkway improvements.

The local air quality impacts from construction of the proposed project are analyzed in Section 2.2 of the Air Quality Study, and show that the construction of the proposed project would not exceed the local NOx, CO, PM10, and PM2.5 thresholds of significance discussed in Section 2.1 of the Air Quality Study. Therefore, construction of the proposed project would create a less than significant construction-related impact to local air quality, and no mitigation would be required.

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

Less Than Significant Impact. Project construction equipment and activities, including diesel exhaust emissions and paving operations, would generate odors. There may be situations where construction activity odors would be noticeable by persons at nearby uses, but these odors would not be unfamiliar to Lakewood residents, or necessarily objectionable. In addition, these odors would be temporary and would dissipate rapidly from the source with an increase in distance. Long-term odors, which would be associated with operation of vehicles on the roadway, would be the same as for the existing conditions; therefore, impacts would be less than significant.

IV. BIOLOGICAL RESOURCES

Would the project:

- a. **Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

No Impact. The proposed street-widening, parkway improvements and utility undergrounding project along Lakewood Boulevard would not affect candidate, sensitive, or special status species because the project area is completely urbanized with commercial and residential development, and lacks habitat for such species. Accordingly, the probability of their occurrence, even transient, is highly remote. No impacts to special-status species are anticipated.

- b. **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

- c. **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

- d. **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites?**

No Impact. The proposed project would not affect riparian habitat, wetlands or other sensitive natural communities because the project area is wholly urbanized, and, as such, does not encompass such resources. The project would likewise not affect fish or wildlife movement, because no habitat exists to support fish or wildlife species. Accordingly, no impacts to wildlife, fish or their habitat are anticipated.

- e. **Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?**

Less than Significant Impact. The proposed project would not conflict with local policies protecting biological resources, including trees, because the project area does not encompass areas where such resources (except street trees) exist. Lakewood Municipal Code Section 7140, *Roadside Trees*, is intended to protect City-owned street trees, and establishes a permit process for trimming, removing and/or replacing them. The proposed project would unavoidably remove approximately 304 street trees, but would install approximately 299 replacement trees according to City specifications, and would add landscaping to both street parkways and medians, consistent with the City of Lakewood Master Tree List and Tree Planting Program per Lakewood General Plan Conservation Policy 1.2.¹⁰ It is estimated that

¹⁰ Conservation Element Policy 1.2 states that the City will continue to implement this street tree program which utilizes about 31 species of trees for street tree maintenance and replacement., *City of Lakewood Comprehensive General Plan – Policy Document*, p. 4-4.

approximately 299 replacement trees will be installed along the parkway and median as part of the project improvements. Accordingly, no impacts associated with local policy conflicts are anticipated.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed project would not conflict with any Habitat Conservation Plans, Natural Community Conservation Plans, or any similar plans, since there is none that encompass the project area. As noted in IV(a-d) above, the project area is wholly urbanized and supports no natural habitat. No associated impacts are anticipated.

V. CULTURAL RESOURCES

The following analysis of cultural resources impacts is based on the Cultural Resource Investigation for: Lakewood Boulevard Improvements ("Cultural Resource Report"), prepared by Greenwood and Associates, Inc., May 2018 (provided in Appendix B).

Would the project:

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

No Impact. As further explained below, the proposed improvements on Lakewood Boulevard would not cause a substantial adverse change in the significance of a historical resource as defined in the CEQA Guidelines § 15064.5. Briefly, that section identifies historical resources as those which are (1) listed or eligible for listing in the California Register of Historical Resources, (2) in a local historical register or otherwise identified as significant by a historical resource survey, or (3) a resource that the lead agency considers to be historically significant, *if* the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, § 5024.1, Title 14 CCR, Section 4852) including these criteria:

- a) The resource is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- b) The resource is associated with the lives of persons important in our past;
- c) The resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- d) The resource has yielded, or may be likely to yield, information important in prehistory or history.

Projects cause a "substantial adverse change" when resources are proposed to be destroyed, relocated or altered to the extent that their historical context or the surroundings are changed to the degree that the resource becomes ineligible for listing.

The City's General Plan does not identify Lakewood Boulevard or any of its adjacent structures as historical resources, and there are no local historical resource surveys that include the boulevard. However, the Cultural Resources Investigation performed for the project notes that the boulevard may be historically significant as it served as a primary route for the design of Lakewood Village, a planned

subdivision community developed during the 1930s, and later as a primary north-south approach route to Lakewood Center as “the heart of the planned community,” which was then considered as representative of innovative urban design for becoming one of the first few shopping malls in the country at the time. Likewise, Lakewood Boulevard was conceived and built as a monumental roadway, the community’s widest, with a broad center median flanked by a green fringe and parallel frontage streets to buffer the residential areas and streamline traffic. The present configuration of the boulevard within the project area appears little changed from the scheme developed in the 1940s where the Lakewood Boulevard corridor itself, including the median and parkway elements present along its length, may be viewed as potentially historic urban design elements.

Upon further review by an architectural historian, a survey into the history of Lakewood Boulevard reveals that the road was initially established before 1900 and then modified over the years.¹¹ As part of its history, the road was part of State Route 19, a regional arterial street within the larger countywide and state roadway system, from at least the 1930s to until 2012 when the Lakewood segment was relinquished to the City for maintenance. Although the City of Lakewood has an interesting development history, the boulevard is not considered to be an essential aspect of the city’s growth. Further inspection of the roadway components as the road, medians and sidewalks also demonstrate that these boulevard improvements are not innovative and unique to the city, as similar frontage roads and center medians were constructed in neighboring cities which share the same features and elements. Additionally, a review of historic images of the city suggests that current features along the boulevard are not original, as aerial images suggest that most of the center median landscaping was added sometime in the 70s or 80s, in addition to other roadway elements that had been altered over the years. As such, the City’s segment of Lakewood Boulevard is not deemed to be historically significant and is ineligible for listing in the National or California Registers as it lacks historic integrity. Accordingly, the project would not cause a substantial adverse change in the significance of a historical resource, and no impacts are anticipated.

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

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

Less than Significant Impact with Mitigation. The cultural resource inventory performed for the project found no evidence of archaeological resources, cemeteries or other evidence directly indicating the presence of human remains in the project area.¹² The report suggests that monitoring during construction for such resources is not necessary for this project, in light of the area’s long history of urban development. However, it is always possible for deeply-buried cultural resources to be discovered during excavation and trenching for utility undergrounding. A review of historical maps and other archival materials indicates a low to moderate potential of encountering buried historic or prehistoric archaeological deposits within the project footprint. Additionally, the project area is within an area known to be associated with the prehistoric and proto-historic Native American populations generally referred to as the Gabrieliño/Tongva.¹³ Although the area has been urbanized for decades, local tribal representatives indicate that the Lakewood area is generally sensitive for archaeological resources, including Native American resources. These resources can include Native American cultural materials (shells, animal bones, stone tools, or stone flakes), historic materials (trash deposits or scatters

¹¹ Email correspondence from Shannon Carmack, Architectural History Program Manager at Rincon Consultants, Inc., dated June 11, 2018.

¹² Greenwood and Associates, Lakewood Boulevard Capacity Enhancement Project, Lakewood, California, Cultural Resources Inventory Report, May 2018, p. 20.

¹³ Id., pp. 7-8.

containing bottle glass, ceramics, metal items or structural remains), or human remains. **Mitigation Measures CUL-1 and CUL-2** requires that work be temporarily stopped if such resources are found, that they be evaluated and monitored by a licensed archaeologist, and recovered as appropriate. However, as discussed in Response XVII.b, additional on-site archaeological monitoring will be required per **Mitigation Measure TCR-1** for excavations or any earth-moving activities exceeding three feet below grade surface. With application of this mitigation measure, impacts from the proposed project to archeological resources or human remains are anticipated to be less than significant.

Mitigation Measures

CUL-1 The unanticipated exposing of archaeological resources has the potential to destroy or cause substantial damage to significant cultural resources. Should buried cultural resources be encountered during project-related construction activities, all ground-disturbing activity should be immediately suspended within a 100-foot radius of the find until a qualified professional archaeologist, retained by the City, is contacted to evaluate the significance of the find (per CEQA regulations). Examples of Native American cultural materials might include shell or bone, grinding stone tools such as mortars, bowls, pestles, or manos, flaked stone tools such as projectile points or scrapers, or stone flakes associated with tool manufacture. Historic materials may include trash deposits or scatters containing bottle glass, ceramics, metal items, or structural remains. If the archaeological resources are found to be potentially significant, impacts to the resources will be mitigated in a manner consistent with California Office of Historic Preservation (OHP) guidelines. Appropriate mitigation may include avoidance of the resources, testing, and/or data recovery. Ground disturbance in the area of suspended activity shall not recommence until authorized by the archaeologist. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed. Salvage operations requirements pursuant to Section 15064.5 of the CEQA Guidelines shall also be followed.

CUL-2 If human remains are encountered, all ground-disturbing activities shall immediately be suspended within a 100-foot radius of the find, or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional remains. The Los Angeles County Coroner must be contacted. If the remains are of Native American origin, the most likely descendants of the deceased must be identified by the Native American Heritage Commission (NAHC). The City of Lakewood will consult with the Native American most likely descendant(s) to identify a mutually acceptable strategy for treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the NAHC is unable to identify a most likely descendant; if the descendant fails to make a recommendation within 24 hours of being notified by the NAHC or the City; or if the descendant is not capable of reaching a mutually acceptable strategy through mediation by the NAHC, the Native American human remains and associated grave goods will be reburied with appropriate dignity on the proposed project site in a location not subject to further subsurface disturbance.

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

Less Than Significant with Mitigation Incorporation. The site is essentially flat and located in an urban environment with no unique geological features. This portion of the City is not known or expected to contain paleontological resources for the shallow depths of excavation that is anticipated for the project. Although the potential to encounter paleontological resources is considered remote, **Mitigation**

Measure CUL-3 addresses the potential that paleontological resources be encountered during construction located along the corridor alignment. Therefore, through implementation of **Mitigation Measure CUL-3**, impacts to paleontological resources as a result of the proposed project would be less than significant.

CUL-3 During excavation and grading activities, if paleontological resources (fossilized bones, organisms, etc.) are discovered, the project contractor shall stop all work and contact the City. The City shall retain a qualified paleontologist to evaluate the significance of the find. If the resources discovered are rare or otherwise important, the paleontologist shall present the City with options for preserving them. The City shall commit to the most feasible course of action, which may include retrieval and cataloging of the resource with an appropriate repository (e.g. the Natural History Museum of Los Angeles County).

VI. GEOLOGY AND SOILS

Would the project:

- a. **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
 - i. **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

Less Than Significant Impact. The proposed roadway and bikeway improvements and utility undergrounding activities would have no significant impact on the topography or ground surface relief features of the project area. Proposed improvements would be constructed on existing roadways or through areas already built or surfaced. No significant amount of grading is expected to occur as a result of the project.

According to the City of Lakewood Hazard Mitigation Plan, the closest active fault system to the project is the Los Alamitos Fault and the Newport-Inglewood Fault. The Los Alamitos Fault's location is postulated in the vicinity of Carson Street and Bellflower Boulevard, which is located approximately 1.5 miles southeast of the project alignment. The fault is not included in an Alquist-Priolo Special Studies Zone and the implications of a significant earthquake along this fault and the chances of a ground rupturing occurring are not known.

The Newport-Inglewood Fault Zone is approximately three miles southwest of the City Lakewood and is expressed at the surface as a series of low, elongated hills extending from Newport to Beverly Hills, including Signal and Dominguez Hills. The Norwalk Fault and the Cherry Hill Fault both part of the Newport-Inglewood Fault Zone are within two miles (3.2 kilometers) northeast and southwest of the City, respectively. The length of the fault zone is approximately 44 miles. Subsurface movement along the fault resulted in the 1933, magnitude 6.3, Long Beach earthquake, which caused significant damage to the City of Long Beach. Nevertheless, based on current available geologic information, no active faults are known to exist on or in the immediate vicinity of the project site. The project site is not located within an Alquist-Priolo Fault Zone for surface fault rupture hazards. Because there are no known active faults located on the project site, the potential for fault rupture on the site is low, and associated impacts are expected to be less than significant.

ii. Strong seismic ground shaking?

Less Than Significant Impact. As is typical of all of southern California, the project site is located in a seismically active region and is potentially subject to severe ground shaking generated by high seismic activity. However, as discussed previously, ground shaking caused by severe seismic activity is considered to be low due to the distant locations of active faults and the absence of the seismic activity from local faults according to historical data and other documented evidence. Moreover, the proposed project would improve an existing roadway and renovate pedestrian facilities – the project of itself would not markedly change the number of people present in the project area, who are already subject to risk of loss or injury from earthquakes. Exposure of people or structures to substantial adverse effects due to strong seismic ground shaking is likely less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. The project site is located within a seismic hazard zone that is known for soft soils and potential high groundwater level.¹⁴ As such, this area is susceptible to liquefaction. However, since the project site is relatively level and there are no proposed above-ground structures included as part of the proposed improvements, it is not likely that the project will increase the exposure of people or property to ground failure or liquefaction. Therefore, associated impacts are considered to be less than significant.

iv. Landslides?

No Impact. The City of Lakewood is relatively flat and so is the project site. Consequently, hazards such as slope instability, mudslides and landslides are not considered to be likely. The project is not located in an area susceptible to landslide or slope failure.

b. Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. During project construction, the exposure of soils in open or excavated areas will temporarily increase the potential for soil erosion. Soil erosion could be caused either by water or wind, a situation which could be exacerbated during the rainy season (November 1 through April 1). Required compliance with the South Coast Air Quality Management District (SCAQMD) Rule 403 (Fugitive Dust) would reduce erosion due to wind to a less than significant level. Required compliance with the Best Management Practices (BMP) of the National Pollution Discharge Elimination System (NPDES) permit and implementation of the required Storm Water Pollution Prevention Plan would reduce erosion due to water to a less than significant level. Construction plans shall specify measures for controlling erosion at the project site.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Soils in Lakewood are generally clay and silt loams of various classifications due to deposits from the San Gabriel River and its tributaries during the recent geologic past. According to the City of Lakewood Seismic Safety Element, the project area is underlain by Hanford Soils with soil characteristics from fine sandy loam to loam conditions.

¹⁴ Seismic Hazard Zone Report for the Long Beach 7.5-Minute Quadrangle, Los Angeles County, California, Page 15, Department of Conservation – Division of Mines and Geology, 1998.

As noted in (a) above, the project site is located within a seismic hazard zone with soft soils and potential high groundwater level, so is susceptible to liquefaction. However, since the project site is relatively level, and the project consists primarily of ground-level improvements (paving, landscaping, replacement of curbs, gutters, etc.) instability from construction operations is not considered an issue, and with proper engineering construction, settlement from roadway and parkway construction operations is considered very unlikely. Therefore, associated impacts are considered to be less than significant.

d. Be located on expansive soil, as defined in Table 18 I B of the Uniform Building Code (1994), creating substantial risks to life or property?

No Impact. As noted above, the project site is located in an area underlain by Hanford Association soils. These soils are characteristically a pale-brown, slightly acidic sandy loam which consists of deep, typically over 60 inches in thickness, well drained soils that form in moderately coarse textured alluvium.¹⁵ These soils are well-drained and considered to have low expansion potential.

The project is to provide intersection and roadway improvements within an existing built environment, where no structures are proposed and any potential impacts from expansive soils will have no impact.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The proposed project is a roadway and utility infrastructure improvement project. It does not include a septic component. There are no septic tanks or alternative wastewater disposal systems in the project vicinity.

VII. GREENHOUSE GAS EMISSIONS

The following analysis of greenhouse gas emissions impacts is based on the Greenhouse Gas Assessment for: Lakewood Boulevard Improvements ("Greenhouse Gas Study"), prepared by Landrum and Brown, Inc., April 2, 2018 (provided in Appendix C).

Would the project:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?

Less Than Significant Impact. The proposed project consists of utility, roadway and parkway improvements including installation of a Class I bike path. Construction of the proposed project would result in creating greenhouse gas (GHG) emissions, primarily from the operation of internal combustion engines that may have the potential to exceed the applicable GHG emissions standards. Project operation is not anticipated to create any additional GHG emissions, since the existing land uses adjacent to Lakewood Boulevard are anticipated to remain unchanged, and the project itself would not increase vehicular traffic on Lakewood Boulevard. Rather, the analysis provided in Section 2.3 of the Greenhouse Gas Study found that the proposed project would result in a slight reduction in congestion and improved level of service which would likely lead to a reduction in GHG emissions.

¹⁵ United States Department of Agriculture, Natural Resources Conservation Service, Official Soil Series Descriptions, Available at: https://soilseries.sc.egov.usda.gov/OSD_Docs/H/HANFORD.html, accessed August 31, 2016.

The project's construction-related GHG emissions were calculated with the CalEEMod model based on the parameters detailed in Section 2.2 of the Greenhouse Gas Study. A summary of the results is shown in Table 7 and the CalEEMod model run is provided in Appendix of the Greenhouse Gas Study.

The data provided in Table 4 shows that the proposed project would create 2,928.60 metric tons of carbon dioxide (CO₂) equivalent (MTCO₂e) from construction activities. As detailed in **Table 7**, construction-related GHG emissions will be produced at different levels throughout the construction phase. According to the SCAQMD draft threshold of significance detailed in Section 2.1, a cumulative global climate change impact would occur if the GHG emissions created from the ongoing operations would exceed 3,000 MTCO₂e per year. Therefore, a less than significant generation of greenhouse gas emissions would occur from development of the proposed project. Impacts would be less than significant.

Table 7
Construction GHG Emissions

Activity	Annual Emissions (MT/Year)			
	CO ₂	CH ₄	N ₂ O	CO ₂ EQ
Trenching (2019)	387.6	0.1	0.0	389.0
Construction (2020)	384.4	0.1	0.0	385.8
Construction (2021)	757.9	0.1	0.0	760.8
Trenching (2020)	175.9	0.0	0.0	176.8
Demolition (2020)	174.6	0.0	0.0	175.5
Paving (2021)	562.2	0.1	0.0	565.1
Architectural Coating (2021)	222.4	0.1	0.0	223.9
Site Preparation (2021)	263.5	0.0	0.0	264.6
Total Emissions	2,928.60	0.52	-	2,941.53
Project Life Average Annual Construction Emissions*	97.62	0.2	0.00	98.05
Screening Threshold:				3,000
Exceeds Threshold?				No

*Based on 30 Year Project Life Per SCAQMD Significance Thresholds

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. The California Air Resources Board's (CARB) Scoping Plan is California's strategy to achieve the GHG emissions reduction target (1990 levels by year 2020) established by Assembly Bill (AB) 32. The proposed project's construction-related GHG emissions would be further reduced by complying with statewide measures that have been adopted since AB32. Based on the CalEEMod results discussed above, the proposed project would not significantly add to the cumulative GHG totals for the State of California. Moreover, the project adds bicycle lanes to this portion of Lakewood Boulevard, consistent with state goals for facilitating "clean" transportation methods. Therefore, the proposed project would not interfere with the State of California's ability to achieve GHG reduction goals and strategies. No impact would occur and no mitigation measures are required.

VIII. HAZARDS AND HAZARDOUS MATERIALS

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?**

Less Than Significant Impact (a and b). The proposed project would not create a significant hazard to the public associated with hazardous material transport, use, disposal, or release, because although some hazardous materials would be present during construction, mandatory adherence to existing regulations and controls would prevent significant public harm. The only source of hazardous materials that could be exposed during construction is vehicle/equipment fuels and fluids and road surfacing materials. Release or spillage of these fuels or materials during construction could lead to contamination of surrounding soils or water. Section 402 of the Clean Water Act (33CFR26 Section 1342) regulates the discharge of water pollutants through the National Pollutant Discharge Elimination System (NPDES). This permit requires all construction activities within the County, including the proposed project, to limit to the maximum extent feasible, discharges of water pollutants by using Best Management Practices (BMPs). The BMPs for this project, such as equipment maintenance and emergency procedures, would reduce the potential for accidental spills and reduce the harm from any spills that may occur. The project will not result in an increase in hazardous emissions or an increased presence of hazardous materials with the exception of possible short-term exposure to vehicle emissions during construction. Associated impacts are thus expected to be less than significant.

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

No Impact. There are no school facilities located along Lakewood Boulevard within one-quarter mile of the project area. Schools near the project that are located within one-half mile include Craig Williams Elementary School, Holmes Elementary School, Captain Raymond Collins School, Buena Vista High School and National Polytechnic College. As stated above, any potential hazardous spill or release of hazardous substances would be limited during the construction phase of the project. Moreover, handling of hazardous materials resulting in spills or other hazards is unlikely due to mandatory safeguards for its transport, storage and application. Such hazardous substances like gasoline or other petroleum-based products that would be used during construction activities would be contained on-site in the event of accidental spill or release. Accordingly, impacts related to hazardous-material-release near schools are expected to be less than significant.

- 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?**

No Impact. The proposed project is not on a site listed as a hazardous material site, nor is any such properties within one-half-mile of the project site (See California Department of Toxic Substances Control Envirostor searchable database, <http://www.envirostor.dtsc.ca.gov/public/>, accessed April 12, 2018). Accordingly, the proposed project would not expose the public to related hazards. No impacts with respect to hazardous materials sites are anticipated.

- 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?**

No Impact. The project is not located within an airport land use plan, and is not in the vicinity of a public or private airport. The nearest airport is Long Beach Airport, which is located approximately 1.5 miles to the south of the project. The site is not located in either the Clear Zone or the Approach Safety Zone of the airport. Therefore, the project would not result in an airport-related 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?**

Less Than Significant Impact. As a major arterial street, Lakewood Boulevard is designated as an evacuation route in the City's General Plan. Typically, construction of the project will require closure of two travel lanes (one in each direction) during construction of the roadway improvements, which would still allow for emergency vehicle access through the area. Temporary traffic disruption will be minimized by maintaining traffic flow during construction and limiting all work to midweek, off-peak hours. The completed project would not be a traffic generator and would not alter any traffic patterns. Therefore, the project would cause no significant impact to emergency response or evacuation plans.

- 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?**

No Impact. The proposed project would not of itself expose significant numbers of people or structures to wildland fire risk, because the project area is located in an urban environment, and is not near fire-prone wildland. According to the Lakewood Hazard Mitigation Plan 2009, there is no risk of wildland/urban interface fires in Lakewood. Thus, there are no impacts with respect to wildland fires.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

- a. **Violate any water quality standards or waste discharge requirements?**

Less Than Significant Impact. The proposed roadway and parkway improvements and utility undergrounding would not violate water quality standards or waste discharge requirements, because as explained in more detail below, all construction work would be required to incorporate water-quality-protection best management practices (BMPs) that would minimize construction and operation-related pollutant runoff. The proposed project would reconstruct 21 catch basins with new retractable trash screens, install trash screens on connector pipes, modify landscaped medians and parkway improvements, and would resurface the street. The landscaped medians would be designed so that no irrigation runoff would flow into the street.

All road construction (grading, scraping, watering for dust mitigation, placement of infrastructure, installation of concrete and asphalt paving, curbs and gutters or asphalt concrete dike, sidewalks, etc.)

would be subject to federal and state regulations protecting water quality. Specifically, the federal Clean Water Act (CWA) assigns jurisdiction to federal, state, and local agencies over specific activities that could affect stream channels, wetlands, and other water bodies. Section 402(p) of the CWA sets forth the National Pollutant Discharge Elimination System (NPDES) storm water permitting program, administered by the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) under delegation by the United States Environmental Protection Agency (U.S. EPA). Where projects would affect an area larger than one acre, the project proponent must prepare and implement a Storm Water Pollution Prevention Plan (SWPPP), which details the BMPs for reducing or eliminating pollutant discharge from construction areas. Smaller projects, such as the present road-improvement project (encompassing 0.61 acre), still must incorporate BMPs.

BMPs for the project would include, but not be limited to:

1. Good housekeeping: conducting an inventory of products used, implementing proper storage & containment, and properly cleaning all leaks from equipment and vehicles;
2. Non-storm water management: properly washing vehicles in contained areas, cleaning streets and minimizing irrigation runoff;
3. Erosion control: covering disturbed areas with mulch, temporary seeding, soil stabilizers, binders, fiber rolls or blankets, temporary vegetation, permanent seeding;
4. Sediment control: straw wattles along drainage pathways and around storm drains;
5. Run-off and run-on controls: berms and run-off/on diversions;
6. Screens on catch basins and on connector pipes to prevent trash from entering waterways;
7. Inspection, maintenance and repair of BMPs to ensure continued efficacy.

By applying these and other BMPs, impacts are anticipated to be less than significant, and no supplementary mitigation measures would be required.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The proposed project would not deplete groundwater supplies or result in lowered ground water tables because as explained further below, the project would not result in substantial water demand during construction or operation, and would not significantly increase impermeable surface area. The project will provide roadway and parkway improvements (i.e., street widening, paving, sidewalk, curb and gutter, landscaped medians etc.) along Lakewood Boulevard, reducing street widths to accommodate a Class I bike path along the parkway. Although the project would incrementally add impervious areas where new paving would be installed for the bike path, the reduction in roadway paving and addition of bioswales and drought tolerant landscaping will result in a net increase for infiltration capacity.

Additionally, the proposed roadway and parkway improvements would not be expected to deplete groundwater supplies because construction activities (concrete mixing, water application for dust control, etc.) would use limited amounts of water. The proposed landscaping associated with the project would both replace existing landscaping and add new plant material; all new plants would be varieties selected to require minimal irrigation. Given the project's overall low water consumption, impacts with respect to

groundwater supply are anticipated to be less than significant, and no additional mitigation measures are required.

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site?**
- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?**

Less Than Significant Impact (c and d). The proposed project would not substantially change the existing drainage pattern of the area, causing erosion or flooding, simply because the proposed street improvements would minimally alter the existing street geometry, and incrementally add street and gutter capacity for directing and channeling storm water flows. Although street-surface drainage patterns might change slightly with the reduction of raised landscaped medians, such changes are not expected to rise to a level of significance, since the medians are already located at the roadway's high point would not cause significant changes to existing surface flows. The project would not be expected to cause erosion or siltation off-site. Although utility undergrounding would require trenching and excavation, the project area is relatively flat, covered with impermeable surfaces, and is not susceptible to surface erosion. The BMPs applied in Part IX.a. above would minimize the amount of sediment carried from the site into sub-surface storm drains. Any excess excavated material would be removed from the project area. Likewise, the project would not be expected to contribute to surface flooding, because the existing storm drainage system, including any new catch basins required as part of the project, is designed to accommodate excess stormwater flows. Moreover, the City does not lie within a FEMA-designated flood hazard area.¹⁶ Accordingly, impacts with respect to erosion, siltation and flooding are anticipated to be less than significant, and no additional mitigation measures are required.

- e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

Less Than Significant Impact. The proposed project would not contribute substantial amounts of runoff water exceeding storm water drainage system capacity, because the planned street and parkway improvements is designed to be consistent with the City's General Plan, which evaluated surface runoff and drainage capacity. Moreover, the proposed project would not substantially increase the amount of polluted runoff because BMPs described in IX(a) above would be in place to reduce pollution from runoff water. Impacts associated with storm water infrastructure capacity and polluted runoff are anticipated to be less than significant, and no additional mitigation measures are required.

- f. Otherwise substantially degrade water quality?**

¹⁶ The Federal Emergency Management Agency (FEMA) Map for the project vicinity (Map No. 06037C1960F, panel 1960F) indicates that the area is generally at a very low risk of flooding because of the network of engineered storm drain channels. The proposed project is located within FEMA Zone X, which includes areas subject to inundation by 0.2-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are less than one foot, or where areas are protected by levees from the one-percent annual chance flood. Department of Homeland Security, Federal Emergency Management Agency, *Flood Insurance Rate Map, Los Angeles County, California, Panel 1960 of 2350 (Map No. 06037C1960F)*, September 26, 2008, available at <http://msc.fema.gov/portal/search?AddressQuery=Lakewood%2C%20CA#searchresultsanchor> (accessed April 12, 2018).

Less Than Significant Impact. The proposed project would not otherwise substantially degrade water quality, primarily because the BMPs described in (a) above would minimize runoff water contamination. Impacts associated with water quality are anticipated to be less than significant, and no additional mitigation measures are required.

g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. (g, h) The proposed project would not construct housing or other structures, thus would not directly subject housing or structures to flood hazards.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. According to the City's Hazard Mitigation Plan, there are two dams upstream of Lakewood that could pose an inundation hazard for portions of the City of Lakewood in the event of catastrophic failure: Hansen Dam and Whittier Narrows Dam. The Hansen Dam is located at the eastern end of the San Fernando Valley, near Pacoima. According to the U.S. Army Corps of Engineers, the northwest corner of the City could be inundated should the Hansen Dam fail due to an earthquake or any other reason. With the completion of the 105 freeway, the risk has been reduced. Thus, the expected level of damage within the City of Lakewood for the failure of Hansen Dam would be fairly low.

Preliminary information pertaining to flooding resulting from failure of the Whittier Dam indicates that water levels could rise to two to four feet throughout much of the City. The inundation area for failure of the Whittier Narrows dam includes about 80% of the City of Lakewood. Only the southwest corner of the City is excluded from inundation in this scenario. However, topography and flow conditions indicate that water depths and velocities would be highest near the San Gabriel River and decrease to zero at the mapped inundation area boundary. In a worst case scenario, the catastrophic failure of the Whittier Narrows Dam, damages in the City of Lakewood would be extremely high with a potential for loss of life. However, the project site is not located within the area of inundation.

As noted above in IX.(g.,h.), according to FEMA Map 06037C1960F, the project is located in Zone X which has been determined to have a 1-percent annual chance of flooding since completion of improvements to the Los Angeles and Rio Hondo Rivers to mitigate flooding among nearby local communities.¹⁷ For this reason, the potential risk to life and property resulting from a dam or levee failure is remote. Therefore, the project would have no impact from potential flooding of levees or dams.

j. Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project would not directly expose people or structures to inundation by seiche or tsunami, because there are no large bodies of water nearby to generate such effects. The City of Lakewood, at its closest point, is located approximately 3.9 miles from the Pacific Ocean and an elevation

¹⁷ The California Resources Agency, San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, and Santa Monica Mountains Conservancy, "Common Ground – from the Mountains to the Sea: Watershed and Open Space Plan – San Gabriel and Los Angeles Rivers," October 2001.

of 35 feet above sea level. Furthermore, the project is located within an urban environment where mudflows and inundation are considered to be a remote possibility.

X. LAND USE AND PLANNING

Would the project:

a. Physically divide an established community?

No Impact. The proposed project would not construct new streets or otherwise alter the existing surrounding pattern of development and established communities. Rather, the project would improve pedestrian and bike access along Lakewood Boulevard with the installation of a Class I bike path along the existing parkway. The proposed project would retain the existing roadway configuration with the addition of new bike paths and sidewalks extending along both sides of the Lakewood Boulevard. Therefore, no impact would occur.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The proposed project is consistent with the Circulation Element of the City of Lakewood General Plan. This Element designates Lakewood Boulevard as a Major Arterial, programmed for regional, sub-regional and intra-city travel service.¹⁸ As such, Lakewood Boulevard is classified to have three travel lanes in each direction, with medians, and up to 84 feet of paving within a 100-foot right-of-way. The proposed project would maintain this roadway configuration of six travel lanes along Lakewood Boulevard between the north and south City limits and would improve the parkways to accommodate a bike path and sidewalk with new drought adaptive landscaping. The project is both consistent with the desired Major Arterial design, and with the Circulation Element goal to "[f]acilitate convenient and safe pedestrian, bicycle and other modes of transportation that decrease dependence upon motorized vehicles."

Accordingly, because the project is consistent with both General Plan design criteria for major arterials and with General Plan policy for pedestrian and bicycle improvements, no conflicts with applicable land use plans exist, and no related impacts are anticipated.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed project would not conflict with a habitat conservation plan or natural community conservation plan, because none exist that apply to the project site. No associated impacts are anticipated, and no mitigation is required.

¹⁸ City of Lakewood, *City of Lakewood Comprehensive General Plan – Policy Document, Circulation Element*, November 1996, p. 3-1.

XI. MINERAL RESOURCES

Would the project:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. No mineral resources of statewide or regional importance have been identified in the City. According to the City of Lakewood Comprehensive General Plan (1996), there are no known significant mineral resources or deposits of regional or statewide importance located in Lakewood. Most of Lakewood is classified as MRZ 1, an area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. Therefore, project construction and operation would not result in the loss of availability of any known mineral resource that would be of local, regional, or statewide importance. No impact would occur and no mitigation measures would be necessary.

b. 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?

No Impact. The City of Lakewood Comprehensive General Plan Conservation Element does not designate any portion of the City as a locally important mineral resource recovery site. Project construction and operation would not result in the loss of availability of any known mineral resource so no impact would occur.

XII. NOISE

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?

Less Than Significant Impact. The following analysis of noise impacts is based on the Noise Assessment for: Lakewood Boulevard Capacity Enhancement Project (herein referred to as the "Noise Study"), prepared by Landrum and Brown, Inc., dated February 17, 2018 (Appendix D). This Noise Study evaluates the potential noise impacts at noise-sensitive land uses resulting from construction and operation of the project.

Measurement of Sound

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; a sound 20 dB higher is perceived to be four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA)

performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, and temperature also play a significant role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. This criterion is based on known impacts of noise on people, such as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud as to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

SLEEP INTERFERENCE is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent to which these physiological responses cause harm or are signs of harm is presently unknown.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1000 feet	— 110 —	Rock band
Gas lawn mower at 3 feet	— 100 —	
Diesel truck at 50 feet at 50 mph	— 90 —	Food blender at 3 feet
Noisy urban area, daytime	— 80 —	Garbage disposal at 3 feet
Gas lawn mower, 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area	— 60 —	Normal speech at 3 feet
Heavy traffic at 300 feet	— 50 —	Large business office
Quiet urban daytime	— 40 —	Dishwasher next room
Quiet urban nighttime	— 30 —	Theater, large conference room (background)
Quiet suburban nighttime	— 20 —	Library
Quiet rural nighttime	— 10 —	Bedroom at night, concert hall (background)
	— 0 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: Caltrans 2013.

Figure 17 – A-Weighted Noise Levels

Noise Measurement Scales

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the myriad of noise metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community response. Most of the metrics use the A-Weighted noise level to quantify noise impacts on humans. A-Weighting is a frequency weighting that accounts for human sensitivity to different frequencies. Noise metrics can be divided into two categories: single event and cumulative. Single-event metrics describe the noise levels from an individual event such as an aircraft fly-over or perhaps a heavy equipment pass-by such as those activities shown in **Figure 17**. Cumulative metrics average the total noise over a specific time period, which is typically 1 or 24-hours for community noise problems. For this type of analysis, cumulative noise metrics is typically used.

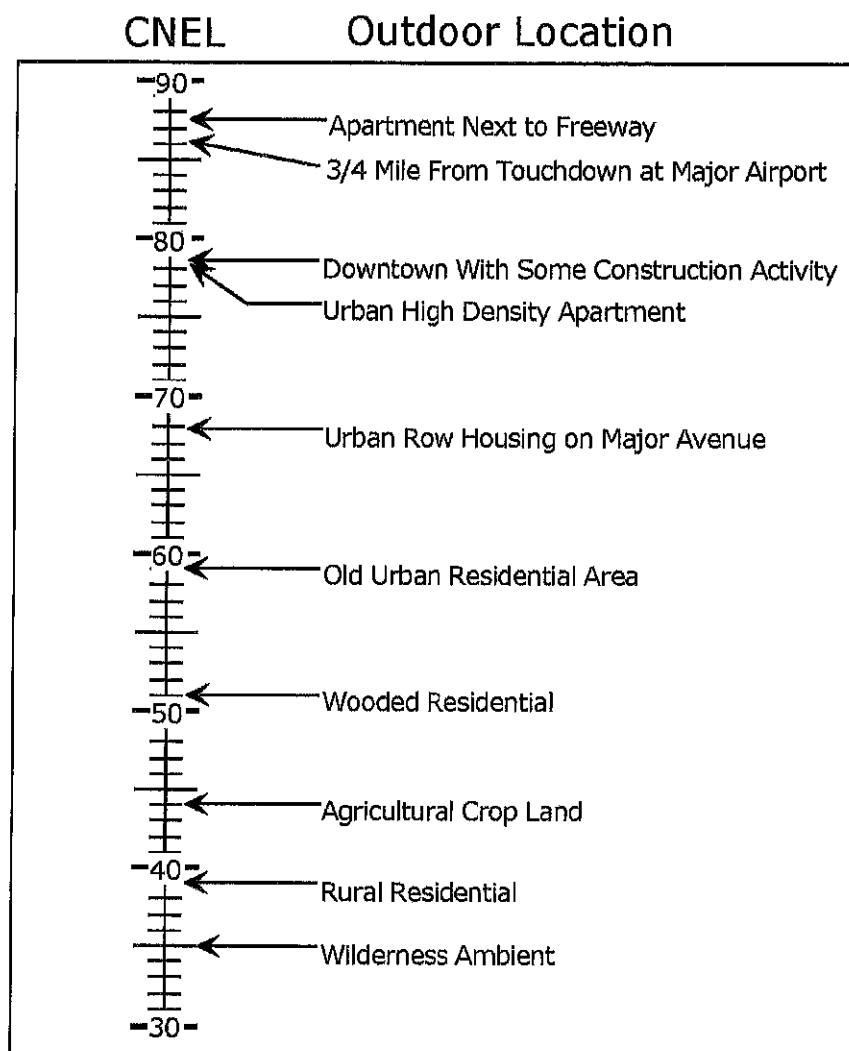
Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on people, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. The two most predominate noise scales are the: Equivalent Noise Level (LEQ) and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs along with the Ldn and L(%) scales that are also used for community noise assessment.

LEQ is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for 1 hour. This 1-hour noise level can also be referred to as the Hourly Noise Level (HNL), the energy average of all the events and background noise levels that occur during that time period.

CNEL, Community Noise Equivalent Level, is the predominant rating scale now in use in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in **Figure 18**.

LDN, the day-night scale is similar to the CNEL scale except that evening noises are not penalized. It is a measure of the overall noise experienced during an entire day. The time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized. In the Ldn scale, those noise levels that occur during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where resting at home and sleep are the most probable activities.

L (%) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 5 minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty-minute measurement period. It is L(%) that is used for many Noise Ordinance standards. For example, most daytime City, State and City Noise Ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words the Noise Ordinance states that no noise level should exceed 55 dBA for more than fifty percent of a given period. The L(%) levels are not used for the City of Noise Ordinance.



Source: U.S. Environmental Protection Agency, "Impact Characterization of Noise Including Implications of Identifying and Achieving Levels of Cumulative Noise Exposure," EPA Report NTID 73.4, 1973.

Figure 18 – Typical Outdoor Noise Levels

Noise Setting

Existing single-family residences border on both sides of Lakewood Boulevard. Many of these residences are buffered with a frontage street located between the homes and vehicle traffic on Lakewood Boulevard. However, the residences along the east side of Lakewood Boulevard from South Street to Ashworth Street abut Lakewood Boulevard with rear yard facing homes and buffered by a six-foot high block wall.

Currently, the primary source of noise impacting residents in the project site area is traffic noise from vehicles on Lakewood Boulevard. Additional noise is generated by adjacent commercial uses that include neighborhood and regional shopping centers located between Candlewood Street and Del Amo Boulevard and surrounding the intersection of Lakewood Boulevard and South Street.

Regulatory Setting

State of California

The State of California's 2013 Green Building Code (California Code of Regulations, Title 24, Part 11) specifies an interior noise standard for non-residential uses exposed to exterior noise levels from transportation noise sources (aircraft, roadway or rail) exceeding 65 CNEL or a one-hour Leq of 65 dBA or greater. The standard specifies minimum outdoor-indoor-transmission-class (OITC) ratings for exterior walls or a performance standard of a one-hour interior noise level of 50 dBA Leq(H). Prior State Building Codes also contained interior noise standards for residential buildings but these have been omitted from in the most recent updates to the code.

City of Lakewood Noise Element

The Noise Element of the Comprehensive General Plan includes goals and implementation programs to help mitigate or offset noise impacts on the community. Most of these goals pertain to efforts to reduce noise impacts from railroad rights-of-ways as well as noise generated by the Long Beach Airport. Specific noise regulations (concerning construction) are included in the City's municipal code, as discussed below.

City of Lakewood Municipal Code

Section 8019 of the Lakewood Municipal Code establishes permitted hours of construction that seek to control sources of noise for construction projects. These regulations state that "No person shall engage in any act of grading, construction, reconstruction, or demolition, including but not limited to the use of any air compressors; jackhammers; power-driven drill; riveting machine; excavator/truck, tractor or other earth moving equipment; or any machine, tool, device or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in a dwelling, apartment, hotel, mobile home, or other place of residence, except during the hours of 7 A.M. to 7 P.M, Monday through Saturday; and 9 A.M. to 7 P.M., on Sundays."

Exemptions to the above-stated hours of permitted construction can include the following:

- Work performed in a zone prohibiting residential uses when such work is at least five hundred (500) feet from a residential zone within any jurisdiction.
- Work performed by a public utility or governmental agency when such work is necessary for the preservation of life or property and such necessity requires work within the prohibited hours.
- Emergency work necessary for the preservation of life or property when such necessity arises during prohibited hours or immediate action is required prior to the time permissions could be obtained except when this work is performed by a public utility or governmental agency.

In addition to the foregoing, the Director of Community Development may approve a written request for construction activity during prohibited hours, provided the written request states the reason and the facts upon which the reasons are based, and the Director makes the following findings:

1. The work to be done is in the best public interest; or
2. Hardship or injustice or unreasonable delay would result from the interruption of the work during the specified times; or
3. The building or structure involved is devoted or intended to be devoted to a use immediately incident to public defense.

Existing Noise Levels

Noise measurements were performed in order to document the existing aural environment and noise levels currently experienced on and around the project site. Short-term, 15-minute, noise measurements were performed at the eight locations and described in **Table 8**. The noise measurements were taken along Lakewood Boulevard from Del Amo Boulevard to just north of Ashworth Street on Thursday, November 9, and Wednesday, November 22, 2017.

The primary source of noise in the project area is traffic noise from vehicles on Lakewood Boulevard. Traffic on the major cross streets (Ashworth Avenue, South Street, Candlewood Street, Del Amo Boulevard) and on local streets also contributes to the noise environment and the general din of traffic noise throughout the area defines the background noise levels. Noise is also generated by businesses in and around the Lakewood Center and other business activities in the area. The noise measurement locations were selected to document the existing noise levels and environment at the sensitive land uses located along the project.

Noise measurements performed at all receiver locations shows that the Leq noise level at all fifteen measurements exceeded the City of Lakewood Noise Ordinance standard of 65 dBA for residential land uses. In fact, the background L90 noise level exceeded the Noise Ordinance standard for residential land uses level at measurement Sites 3 through 7. The sources of noise during each measurement period are primarily traffic related including associated activities with commercial use for several adjacent residences and aircraft. As noted, control of these sources by municipal noise ordinances is precluded by state and federal law.

Table 8
Ambient Noise Measurement Sites

Site	Location
1	West mid-section of Chase Bank parking lot, Del Amo Blvd and Lakewood Blvd
2	Southwest entrance to Big Lots rear parking lot, Candlewood St and Lakewood Blvd
3	Lakewood Boulevard, north of Candlewood St near intersection of frontage road and Camerino St
4	5442 Lakewood Boulevard, frontage road, between Camerino St and Michelson St
5	5637 Lakewood Boulevard, frontage road, between Michelson St and Pimenta St
6	Lakewood Boulevard, north of Andy Street, adjacent to backyard at 5193 Pepperwood Ave
7	6103 Lakewood Boulevard, north of Hedda Street, between Hedda St and Ashworth St
8	Lakewood Boulevard, at the Metro bus stop, north of Ashworth St, and adjacent to the residential backyard located at 4303 Ashworth St

Short Term Construction Impacts

The primary noise generation activities for each component are identified, including those major activities that have been identified to generate noise levels substantially higher than traffic levels. The project has four major construction components; (1) utility undergrounding, (2) roadway median and parkway improvements, (3) overlay repaving and (4) roadway re-striping. The first component of the project will be utility under-grounding. The second component of the project is the modification of existing raised medians and repair, replacement of curbs, driveways and ramps, including the construction of new sidewalk and a Class I bike path. This work will increase multi-modal access, improve ADA accessibility and improve drainage conditions. The third component of the project will be to repave Lakewood Boulevard with an asphalt overlay between Del Amo Boulevard and Ashworth Street. This resurfacing will first involve the grinding of the top two inches of AC and PCC and overlay with two inches of asphalt-concrete (AC) pavement on the roadway surface. The final component of the project will re-stripe Lakewood Boulevard with three travel lanes in each direction.

Potential noise generating activities will occur during all phases of project construction. Based on the scope of construction activities and equipment required for use, jackhammers, hoe rams and saws would generate some of the highest noise levels during the initial phases of construction. Jackhammers generate noise levels between 76 and 99 dBA at 50 feet and most typically generate a noise level of approximately 88 dBA. Hoe-rams generate similar noise levels. Saws are shown to generate noise levels between 67 dBA and 96 dBA at 50 feet and most generally generate a noise level of approximately 76 dBA. However, this is representative of all saws used in construction. The saws used to cut asphalt and concrete are large and quite noisy, generating noise levels similar to jackhammer/hoe rams noise levels. While the noise levels generated by jackhammers and concrete saws are quite high, they only generate noise when they are operating which are intermittent and only operate in one location for a limited amount of time.

During excavation and later phases of construction, noise levels generated by a loader/backhoe and an asphaltic milling machine or "scraper" is representative of the loudest noise that would be generated by all other construction activities associated with the project. The scraper generates a pass-by noise level of approximately 100 dBA at a distance of 50 feet, about 12 dB louder than a typical jackhammer/hoe-ram. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

The Noise Study shows that construction activities could generate noise levels ranging from 69 to 102 dBA for equipment operating nearest the sidewalk or curb. However, noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance. Also, noise barriers such as a structure, building or wall would reduce noise when they break the line-of-sight between a noise source and a receptor. For many of the uses along the project there are noise barriers between the roadway and the sensitive receptors but the barriers are discontinuous (Noted as broken on the table). In these cases, some receptor/source location combinations will have reduced noise levels from building or barriers breaking the line of sight, and in other areas the receptor will have direct line-of-sight conditions and the noise level will not be reduced. This occurs most often where sensitive uses are set back from Lakewood Boulevard, and alongside streets that intersect the road. The openings for the side streets allow for direct line-of-sight from the residences to a portion of the roadway but the line-of-sight to most of the roadway is blocked. If all of the residential receivers which have walls were to receive 10 dB of noise reduction, most of the residences along Lakewood Boulevard would still be impacted by noise from construction equipment. Construction even during the daytime hours would result in a significant noise impact. According to Section 8019 of the Noise Ordinance, noise from construction activities is exempt if it takes place between 7:00 a.m. and 7:00 p.m., Monday through Saturday, and between the hours of 9:00 a.m. and 7:00 p.m. on Sunday. Construction contracts for the

project will be allowed by the City and will require compliance with this section of the Noise Ordinance. To reduce the potential impacts from construction, contractors are required to implement noise reduction measures during construction. Noise would be reduced because construction would be conducted in accordance with applicable local noise standards. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise. However, implementing Mitigation Measure NOI-1, noted below, would minimize the temporary noise impacts from construction to a less than significant impact.

Long Term Operational Impacts

Potential long-term noise operational impacts associated with the proposed project are largely from traffic noise and possible minimal and intermittent recreational noise from use of the parkway and bike path for active transportation purposes. Traffic noise was evaluated for project opening (2022). According to the traffic analysis identified in Response XVI.(a), there are no roadway segments with a projected traffic noise level increase as the roadway configuration will remain as a six-lane arterial. Since the project will not increase the capacity of this roadway, the project ADT is the same as the existing ADT. Therefore, the worst case increase due to the project is 0.0 dB. Similarly, no projected change in traffic noise levels relative to the opening year (2022) traffic volumes with and without the proposed project. As shown in Table 7 of the Noise Study, there are no roadway segments with a projected traffic noise level increase due to the project. Therefore, the worst-case increase due to the project is 0.0 dB. This data shows there will be no long-term noise impacts due to the project.

Noise impacts resulting from the project can be considered either short-term construction related or long-term operational related. Hence, the Noise Study has determined that short-term construction noise would be regulated by noise control provisions in the City's Municipal Code as identified in **Mitigation Measure NOI-1** while project operation would result in no noise impacts.

Mitigation Measure

NOI-1 Control of Construction Hours – All noise generating construction activities shall be limited to the allowable hours between 7:00 a.m. and 7:00 p.m. Monday through Saturday, and 9:00 a.m. and 7:00 p.m. on Sundays. As long as the project construction occurs within these hours, it will be in compliance with the construction hours portion of the Noise Ordinance.

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

Less Than Significant Impact. The Municipal Code does not address ground-borne vibration. Short term, construction related activities are the most common source of groundborne noise that could affect occupants of neighboring uses throughout the project study area. The Federal Transit Administration (FTA) uses a peak particle velocity (PPV) of 0.2 inch per second as the vibration damage threshold of fragile buildings and a PPV of 0.12 inch per second for extremely fragile historic buildings.¹⁹

The project would be constructed using heavy construction equipment (e.g. bulldozer, loaded trucks) that would generate a limited amount of ground-borne vibration during construction activities at short distances away (i.e., within 50 feet) from the source. Based on the vibration data by the FTA, typical vibration velocities from the operation of a large bulldozer would be approximately 0.089 inches per second PPV at 25 feet from the source of activity. Several east side residences located between Andy Street and Ashworth Street, which are approximately 30 to 35 feet from the project construction area,

¹⁹ U.S. Department of Transportation, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006, p. 12-12.

would be exposed to vibration velocities of 0.089 inches per second PPV. As this value is below the 0.2 inches per second PPV significance criteria (potential building damage for older residential building), vibration impacts associated with construction would be less than significant at these residences. As such, while the construction of the proposed project would generate localized vibration, impacts would be less than significant. Traffic and multi-modal operation of the street following the proposed improvements would not measurably change relative to existing conditions and therefore no operational vibration impact would occur.

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

Less Than Significant Impact. The proposed project would improve multi-modal access along Lakewood Boulevard to meet current and future active transportation demands and improve safety within the project study area. Given that Lakewood Boulevard is an established regional arterial street, the proposed project would not introduce new stationary and/or mobile noise sources upon its operation as discussed above in Response XII(a), and therefore would not markedly change the ambient noise environment in the project area. Therefore, associated noise impacts would be less than significant.

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

Less Than Significant Impact. As discussed, temporary or periodic increases in ambient noise levels in the project vicinity will occur as a result of construction activities. However, provisions in the City's municipal code regulate the permitted hours of construction activities. Conformance with these regulations will reduce periodic increases in ambient noise levels to less than significant.

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?

No Impact (e, f). The proposed project would not expose people to levels of aircraft noise beyond those that currently exist. The Long Beach Airport (public) is located approximately 2.0 miles south of the project site. There are no private airstrips in the vicinity of the proposed project. The project would not influence airport operations; accordingly, the project would not generate impacts from airport noise, or expose people to new airport noise.

XIII. POPULATION AND HOUSING

Would the project:

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. As discussed, the project involves bikeway, roadway and streetscape improvements. This action would not directly increase the population or housing in the City of Lakewood. The project would

improve multi-modal travel along Lakewood Boulevard with the installation of sidewalks, where needed, and dedicated bike access along the parkway. Other improvements include roadway resurfacing and minor curb improvements to accommodate the expanded parkway improvements.

- b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**
- c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

No Impact (b, c). As discussed, the project involves parkway and roadway improvements. Although anticipated right-of-way acquisition will be required along an existing utility easement from Southern California Edison, the ROW take is and will not require displacement of housing or people. As such, the project would not result in the loss of residential units or require replacement housing. No impacts associated with housing displacement are anticipated.

XIV. PUBLIC SERVICES

Would the project:

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- a. Fire protection?**
- b. Police protection?**

Less Than Significant Impact with Mitigation Incorporation. As discussed, the proposed project does not involve the development of residences and would not significantly induce growth. Consequently, the amount of people served by local fire and police protection services would not increase as a result of the project. However, the project will temporarily disrupt circulation on Lakewood Boulevard during construction. These disruptions could cause short-term impacts on police, fire and other emergency services since there may be a temporary increase in traffic congestion due to the closure of one or two travel lanes in each direction during construction, as typical of any improvement project within the public right-of-way, which causes emergency service providers to seek alternate routes.

Additionally, the proposed project may result in short term construction-related impacts to commercial uses on Lakewood Boulevard. As construction activities for the project may restrict access along Lakewood Boulevard, vehicular access via an existing driveway to commercial businesses may be restricted on a periodic basis pending project construction activities along Lakewood Boulevard. All properties affected by project construction along Lakewood Boulevard will be notified in advance regarding potential impacts to their properties including vehicular and pedestrian access during construction.

Such impacts are potentially significant in spite of many alternate routes which emergency services can use or access temporarily restricted to construction. Thus, implementation of **Mitigation Measure PS-1**

and PS-2 would reduce this impact to a less than significant level. Operation of the proposed project will encourage more pedestrian and biking activity on Lakewood Boulevard but will not significantly increase population as a result of project implementation, and therefore would not require additional police and fire protection services, facilities, or equipment.

Mitigation Measures

PS-1 The project contractor shall prepare and implement a Traffic Control Plan in consultation with police and fire agencies. The Traffic Control Plan shall be prepared and approved by the City Engineer prior to the construction phase of the project and shall address detours and alternative routes for automotive traffic, bicycles, pedestrians and emergency service vehicles. The Plan shall include one traffic lane in each direction be open throughout construction and that flaggers be used to direct vehicle movement during temporary lane closures, would minimize such temporary impacts.

PS-2 Prior to each construction phase, the City of Lakewood shall send written notice to all property addresses and property owners along the affected area of Lakewood Boulevard, and to all emergency service providers for that area of the City, indicating construction start and end dates, total project duration, and a description of construction phase activities. This information shall be prominently posted on the City's website home page, and updated throughout construction.

c. Schools?

No Impact. As discussed, the project does not involve the development of residences and would not significantly induce growth. Consequently, the number of people served by the local school system would not increase as a result of the project, and no school construction would be required. Therefore, the project would have no impacts associated with new school construction.

d. Parks?

No Impact. No parks are located within or adjacent to the project site. The project would not introduce any new population that would create additional demands on existing or planned park facilities, and would not require new park construction. Therefore, no impacts to existing park facilities or impacts associated with park construction would occur.

e. Other public facilities?

No Impact. No libraries, community centers, or other community facilities are located within the project site. The proposed project is a non-residential use that would not involve the addition of any housing units that would increase population. Therefore, no additional demand for library or other public facility construction would result, and no impact would occur. Impacts associated with the proposed public facility's construction and operation are otherwise discussed throughout this document.

XV. RECREATION

Would the project:

- a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

No Impact. The proposed project involves utility, infrastructure and streetscape improvements along Lakewood Boulevard, which would not result in a measurable demand for parks and recreation services. Therefore, no additional demand for park facilities would result, accelerating physical deterioration of City parks facilities, and no impact would occur.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact With Mitigation Incorporation. The proposed project would replace the existing parkway with a new bike path and sidewalk to enhance and promote alternative modes of travel along Lakewood Boulevard. As stated in the discussion under XIV(d) above, the proposed project would expand recreational use with a dedicated bike path and new sidewalks that will require widening along some segments of Lakewood Boulevard. Impacts associated with project construction are discussed throughout this document, and are anticipated to be less than significant with incorporation of mitigation measures.

XVI. TRANSPORTATION/TRAFFIC

The following analysis of noise impacts is based on the Technical Memorandum for the Lakewood Boulevard Regional Corridor Capacity Enhancement Project (Traffic Memorandum), prepared by Willdan Engineering, dated January 31, 2018, p. 6 (Appendix E).

Would the project:

a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. The proposed project would not conflict with transportation or circulation plans or policies, since it would improve Lakewood Boulevard to increase multi-modal travel, consistent with the Lakewood 1996 Comprehensive General Plan Circulation Element (Circulation Element), Policy 4.0, "Facilitate convenient and safe pedestrian, bicycle and other modes of transportation that decrease dependence upon motorized vehicles." The Circulation Element classifies Lakewood Boulevard as a Major Arterial and designated truck route, designed to provide regional, sub-regional, and intra-city service, with three travel lanes in each direction.²⁰ Lakewood Boulevard presently has limited pedestrian and bicycle facilities, with significant gaps between major intersections. With the project, Lakewood Boulevard would install a Class I bike path and new sidewalk to enhance access for pedestrians and bicyclists and potentially reduce vehicle trips along Lakewood Boulevard and adjacent streets, consistent with the General Plan.

Traffic associated with the operation of the proposed project would not be notably affected, as any increase in vehicle trips would not be directly caused by the project, but traffic flows could be affected

²⁰ City of Lakewood, *The City of Lakewood Comprehensive General Plan: Technical Background Report* (November 1996), Section 3.1.2.

during construction. However, because construction impacts would be temporary, and are inherent in accomplishing General Plan objectives, they are not anticipated to conflict with applicable plans, ordinances, and policies intended to maintain the function of the local and regional circulation system.

The Traffic Memorandum prepared for the project indicates that both Level of Service (LOS) and vehicle-to-facility capacity (v/c) ratios would either remain the same or not appreciably change for the worst-performing intersections along the project length. Accordingly, the project would not cause General Plan significance thresholds to be exceeded, conflicts with the Transportation Element policies for intersection effectiveness would not be expected, and associated impacts would be less than significant.

The traffic memorandum did not evaluate specific roadway segments between intersections for LOS or v/c.²¹ However, because the project will not alter the existing roadway configuration, it is reasonable to assume that the project itself would not *cause* LOS and v/c to deteriorate below existing conditions.²² Accordingly, conflicts with the Transportation Element policies for roadway function would not be expected, and associated impacts would be less than significant.

Finally, no conflicts with City policies related to alternative transportation are anticipated. Transportation Element Policies 9 – 11 generally set forth the City's support of alternative transportation, specifically "ongoing efforts to improve connections with other regional transit facilities and services" (Policy 11). The Long Beach and Metro transit lines serve various portions of Garfield Avenue. The proposed project would not alter or eliminate transit routes and would not change transit stops, although specific bus stop locations might temporarily change during construction. Any effects on transit would end following project completion. Accordingly, impacts associated with alternative transportation policy or operation would be less than significant.

b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The Congestion Management Program (CMP) is a state-mandated program enacted by the State legislature to address impacts that urban congestion has on local communities and the region as a whole. New projects located in the City must comply with the CMP provisions that require evaluating freeway segments where a project could add 150 or more trips in each direction during peak hours. The CMP also requires evaluating all designated CMP roadway intersections where a project could add 50 or more trips during peak hours. According to the traffic memorandum, the proposed project would not result in a net increase of more than 20 trips during with either the A.M. or P.M. peak hours at any project-area freeway segment or CMP intersection. Thus, the project would not generate 150 or more trips to a freeway segment or 50 trips to a CMP roadway intersection, and would not cause significant impacts to CMP-designated facilities.

c. 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 Impact. The project is not an air traffic-related use and would not result in the disruption or change of air traffic patterns in the area. Thus, no impact would occur in this regard.

²¹ Willdan Engineering, *CEQA – City of Lakewood; Lakewood Boulevard Regional Corridor Capacity Enhancement Project: Technical Memorandum*, January 31, 2018, p. 6 (Appendix E).

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Less Than Significant Impact. The proposed project does not include design features that would increase hazards. Rather, the project would construct parkway improvements including enhanced pedestrian and bikeway safety measures. Other roadway improvements include modifications to existing curbs and medians to accommodate the new parkway improvements and an additional left turn lane at the intersection of Lakewood Boulevard and Hardwick Street. Additionally, the project would not involve the construction of any uses that would be considered incompatible with existing roadways. Construction truck activity could create a temporary hazard to vehicles traveling on Lakewood Boulevard. However, per standard construction traffic procedures, truck ingress and egress would be controlled by a flagger, or other equivalent means determined appropriate by the City, which would minimize the potential for vehicular hazards associated with truck activity along Lakewood Boulevard. Thus, impacts in this regard would be less than significant.

e. Result in inadequate emergency access?

Less Than Significant Impact with Mitigation Incorporation. The proposed project may result in temporary congestion and delay, since peak project-related traffic would be associated with temporary construction and delivery truck trips on Lakewood Boulevard. As mentioned above, all construction activities would be carried out in accordance with all City, LACSD, and LACFD emergency access requirements and access would be maintained during construction activities. However, as noted in Response XIV(a-b) (Public Services) above, Mitigation Measures PS-1 and PS-2 would require that one traffic lane in each direction be open throughout construction and that flaggers be used to direct truck ingress/egress during temporary lane closures as needed and that all affected property and business owners be notified of proposed construction activities prior to each phase of construction. As such, implementation of Mitigation Measures PS-1 and PS -2 would reduce impacts to emergency access to less than significant levels.

f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The proposed project would not conflict with adopted policies supporting alternative transportation. Construction activities would be coordinated with MTA and other transit agencies, as necessary, in order to minimize impacts to alternative transportation facilities (e.g., bus stops, bike lanes). Access to public transportation and bike lanes would be maintained throughout construction, as required by the City and MTA. As a result, no impacts would result from the proposed project and no mitigation is required.

XVII. TRIBAL CULTURAL RESOURCES

Would the project:

a. Listed or eligible for listing in the California Register Of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or

No Impact. As the project site has been subject to past subsurface disturbance associated with roadway and infrastructure improvements over the years, including adjacent land use development along Lakewood Boulevard, it is unlikely that undisturbed archeological resources exist on the project site. Nevertheless, the unanticipated discovery of unique archeological resources is possible during soil excavation activities. As discussed in response V(a), above, there are no structures considered to be architecturally or historically significant, including culturally significant to Native American tribes (although there are associations with persons notable in Lakewood's history). Additionally, the City's General Plan and the technical report prepared by Greenwood and Associates did not identify any historical resources, including tribal cultural resources, located on or near the project site.²³

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant with Mitigation Incorporated. As discussed in Section V (b-d) (Cultural Resources) above, the Cultural Resource Investigation prepared for the project found no direct evidence of archaeological resources, cemeteries or other evidence indicating the presence of tribal cultural resources on the project site.²⁴ Consultation with the Native American Heritage Commission (NAHC) likewise produced no evidence of archaeological or cultural resources within a half-mile of the project site; however, the NAHC advised government-to-government Native American consultation to determine if local tribal representatives had particular knowledge or concerns about the project site, particularly since the project area is within an area known to be associated with the prehistoric and proto-historic Gabrieliño/Tongva populations.

As part of its Native American (NA) consultation, the City notified nine locally recognized Native American representatives identified on NAHC list via mail and email in a notice letter dated March 15, 2018. Two responses were received from Mr. John Tommy Rosas, Tribal Administrator, of the Tongva Ancestral Territorial Tribal Nation and Mr. Andrew Salas, Chairperson, of the Gabrieliño Band of Mission (Kizh Nation) requesting formal AB 52 consultation. The City received one letter response via email from Mr. Andrew Salas, Chairperson, of the Gabrieliño Band of Mission (Kizh Nation) requesting formal AB 52 consultation in an August 8, 2017 letter. In response, the City addressed the concerns of both NA groups regarding potential sensitive tribal cultural resources impacted by the project and expressed its desire to continue cooperative efforts to monitor site conditions as appropriate during project implementation in its letters dated April 17, 2018 and April 25, 2018. Having received no further response from these NA contacts after 30 days from the last letter issued on April 25, 2018, the City concluded its NA consultation on May 25, 2018.

Included in the consultation with Mr. Rosas and Mr. Salas, the City acknowledged that there is a low to moderate potential of previously undiscovered tribal cultural resources to underlie the project,²⁵ and such disturbance would represent a potentially significant impact. As such, the City has proposed **Mitigation Measure TCR-1** which requires part- or full-time archaeological monitoring during excavation into the younger Quaternary Alluvial deposits (shallow alluvium directly below the ground surface) and subsequent Native American/Gabrieliño monitoring would follow should evidence of tribal cultural

²³ Greenwood and Associates, Cultural Resources Assessment, May 2018. (Appendix B).

²⁴ Id., pp. 23-24.

²⁵ Id.

resources be discovered. **Mitigation Measure TCR-1(d)** requires the City to receive and follow direction from the Native American Monitor regarding appropriate disposition of non-human tribal resources. Compliance with this Mitigation Measure would reduce impacts to a less than significant level.

Mitigation Measure

TCR-1 Implementation of an archaeological monitoring program shall consist of the following:

- a) The City shall coordinate with Southern California Edison to conduct an archaeological monitoring program during excavations deeper than three feet required for undergrounding of overhead utilities,
- b) The archaeological monitoring program shall be conducted in a manner consistent with archaeological standards and, in this case, conducted on a full-time or part-time basis, at the discretion of the Lead Agency;
- c) Should evidence of archaeological resources be uncovered, the archaeological monitoring program shall continue on a full-time basis until it is determined no more alluvium with potential to bear archaeological material is being impacted;
- d) If evidence of Native American resources is identified, a Native American Monitor of Gabrielino descent shall be added to the remainder of the monitoring program. The City shall follow the Native American Monitor's direction regarding appropriate documentation, curation and disposition of non-human tribal resources;
- e) If, at any time, evidence of human remains is uncovered, the County Coroner must be notified immediately and permitted to examine the find in situ. If the remains are determined to be of Native American descent, the Native American Heritage Commission shall be contacted and the Most Likely Descendent (MLD) named. In consultation with the MLD, City, Coroner, Native American Monitor, and archaeological consultant, the disposition of the remains will be determined.

XVIII. UTILITIES AND SERVICE SYSTEMS

Would the project:

- a. **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**
- b. **Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

No Impact. The proposed project involves roadway and other infrastructure improvements. It will not generate wastewater, and does not require any wastewater treatment facility expansion. Therefore, the proposed project would not have the potential to exceed wastewater treatment requirements, and no impact to wastewater treatment requirements of the applicable Regional Water Quality Control Board would occur.

- c. **Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**
- d. **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**
- e. **Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

No Impact. As stated above, the project is a roadway and other infrastructure improvements to increase multi-modal travel and underground existing overhead utilities and does not include the construction of any new habitable developments that would create impervious surfaces, generating increased stormwater runoff, generate wastewater, solid waste, or increase the demand for water supplies or wastewater treatment. Although the project would replace existing stormwater facilities (catch basins and culverts), it will not markedly expand stormwater drainage capacity. New median and parkway landscaping is required to be water-efficient, and would not by itself demand irrigation water in quantities sufficient to require new allocations or water entitlements. Finally, the project itself would not generate wastewater. Accordingly, no impacts to these utilities and service systems are anticipated.

- f. **Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?**

Less than Significant Impact. The completed project will generate excess concrete and asphalt material during the demolition of portions of the existing roadway and parkway prior to construction of the roadway and parkway improvements. Thus, development of the project would produce inert fill. Excavation and construction debris would be recycled or transported to La Puente Hills Landfill and disposed of appropriately. However, the amount of debris generated during project construction is not expected to significantly impact landfill capacities. Therefore, there would be a less than significant impact to solid waste disposal.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. Disposal of waste materials generated during construction will comply with all local, state, and federal requirements for integrated waste management (e.g., recycling, green waste) and solid waste disposal, and no evidence has been presented that indicates that compliance is impossible. As stated above, the amount of solid waste generated from the project will not exceed the standards or capacity of local disposal facilities. No impacts related to solid waste regulations are anticipated.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

Less Than Significant Impact with Mitigation Incorporation. There are no sensitive fish or wildlife habitat areas in the vicinity of the proposed project. The project is also located within an area of low biological resource value since the surrounding area is considered urbanized and highly disturbed with little to no native vegetation to support any sensitive species. Therefore, no degradation of the environment or any adverse impacts to any sensitive plant or animal species will result from the project. The Cultural Resources Assessment prepared for the project notes that Lakewood Boulevard is sensitive for archeological, and cultural (including Native American) resources. As such, mitigation measures have been incorporated into the study to address the potential to uncover such resources during the excavation/construction phase of the project. This includes the provision of full-time monitoring during excavation/construction for archeological, and cultural resources. A Native American Monitor of Gabriellino descent will monitor excavation/construction activities for Native American resources if Native American resources are uncovered during the course of excavation/construction activities.

- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

No Impact. Project impacts are limited to the short-term construction activities (e.g., noise, dust, temporary drainage, traffic detours and temporary access, etc.) for these utility, streetscape and infrastructure improvements. The project is intended to increase multi-modal travel, reduce vehicle trips, implement green street improvements and enhance the streetscape along Lakewood Boulevard, and would not contribute to an existing capacity demand. Short-term cumulative impacts would be minimized by avoiding simultaneous construction of each component (i.e., street, sidewalk, utilities, etc.) of this project. Coordination within the separate components of this project and with other current and future infrastructure projects within proximity of each other will be necessary to avoid significant environmental impacts to the general public and affected businesses. As such, no adverse cumulative impacts were identified in the initial analysis. Therefore, no impacts would result from the proposed project.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. Any potentially adverse effects on human beings associated with the project will be limited to project construction. Short-term exposure to potential noise, air and water pollution associated with heavy construction vehicles may be expected. However, implementation of mitigation measures during the construction phase will minimize the potential adverse impacts associated with project construction to a less than significant impact. Appropriate measures and management practices such as limiting construction periods, providing structural mitigations, and coordination with affected businesses and other service agencies will be employed during construction as necessary. Otherwise, the project will not have any long-term adverse impacts on human beings but will instead enhance traffic operations and safety at this intersection. Based on the analysis in this Initial Study, and with application of the incorporated mitigation measures, the project will not present substantial adverse effects on human beings. Therefore, potential direct and indirect impacts on human beings that result from the proposed project are less than significant.

APPENDIX A: AIR QUALITY ASSESSMENT LANDRUM AND BROWN

Air Quality Assessment For:

LAKEWOOD BOULEVARD IMPROVEMENTS

CITY OF LAKEWOOD

Prepared For:
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June 7, 2018

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1.0 Existing Air Quality

1.1 Project Description

This report analyzes the potential air quality impacts associated with the proposed Lakewood Boulevard Improvement project. Regional air quality impacts from construction and operation of the proposed project are analyzed, as are potential local air quality impacts.

Lakewood Boulevard between Del Amo Boulevard and Ashworth Street is proposed to be rehabilitated and a parkway constructed for bicycles and pedestrians within the existing Right of Way. Improvements will consist of reconstructing existing medians; improving and repairing existing pavement; modifying and repairing existing curbs, sidewalks and ramps including improving Americans with Disabilities Act (ADA) accessibility; widen and narrowing the road as needed within the existing Right of Way, generally three feet or less to maintain minimum lane widths; modify traffic systems to accommodate the parkway including traffic signals, signage, street lighting; relocate utilities and adjust to grade as needed to accommodate improvements; add or replace street trees; add aesthetics improvements including landscaped planters and modify transit stops. The project is anticipated to be constructed within the existing right of way. **Figure 1** presents a vicinity map showing the project location and **Figure 2** shows an aerial photograph of the project site.

1.2 Local, State, and Federal Air Quality Agencies

The Environmental Protection Agency (EPA) is the primary federal agency for regulating air quality. The EPA implements the provisions of the Federal Clean Air Act (FCAA). This Act establishes National Ambient Air Quality Standards (NAAQS) that are applicable nationwide. The EPA designates areas with pollutant concentrations that do not meet the NAAQS as non-attainment areas for each criteria pollutant. States are required by the FCAA to prepare State Implementation Plans (SIP) for designated non-attainment areas. The SIP is required to demonstrate how the areas will attain the NAAQS by the prescribed deadlines and what measures will be required to attain the standards. The EPA also oversees implementation of the prescribed measures. Areas that achieve the NAAQS after a non-attainment designation are redesignated as maintenance areas and must have approved Maintenance Plans to ensure continued attainment of the NAAQS. In addition, the EPA sets national vehicle and stationary source emission standards as well as providing research and guidance for air pollution programs.

Figure 1 Vicinity Map

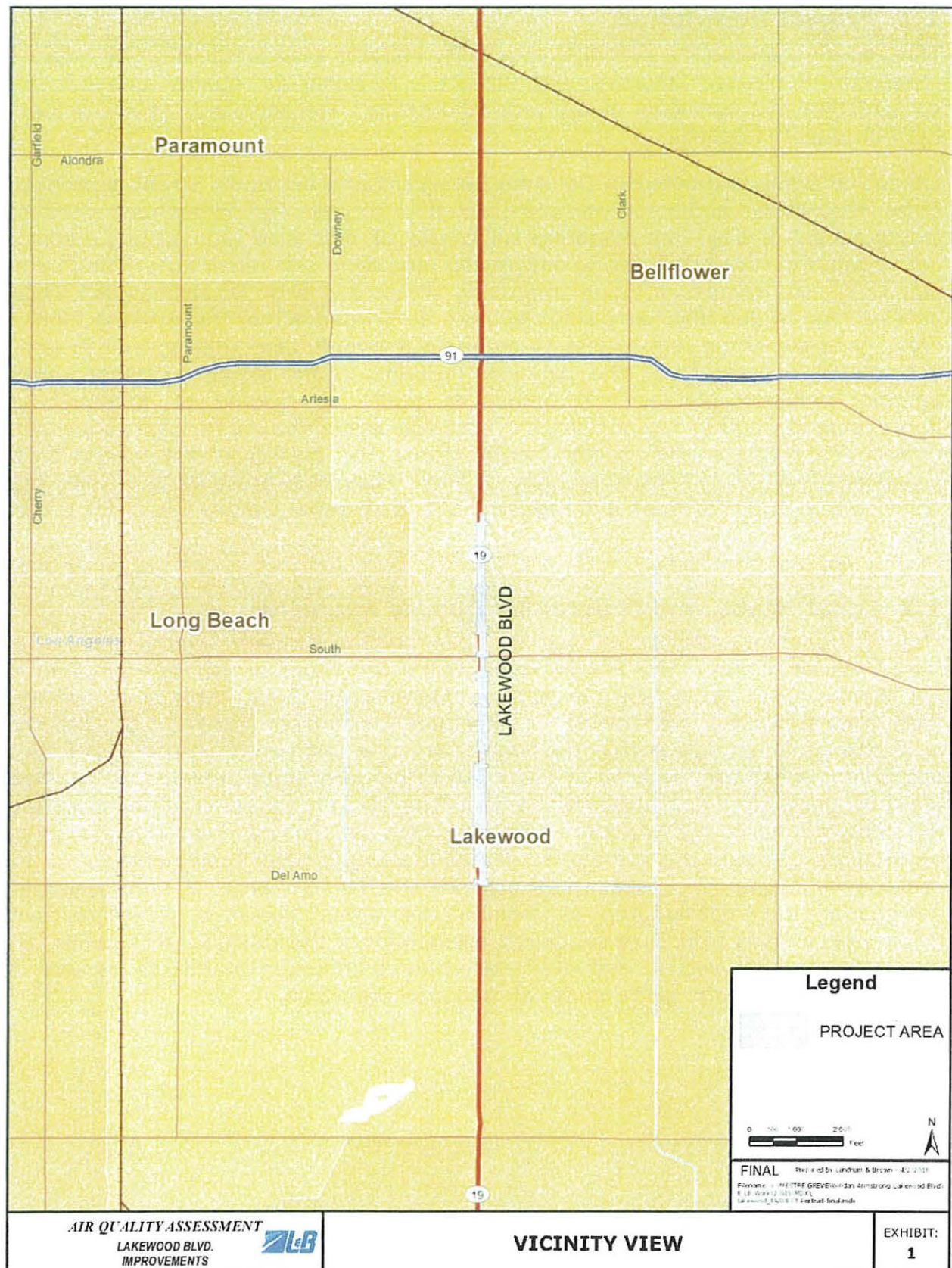


Figure 2 Project Site



The California Air Resources Board (CARB) was established in 1967 by the California legislature to attain and maintain healthy air quality, conduct research into the causes and solutions to air pollution, and systematically attack the serious problem caused by motor vehicles, which are the major causes of air pollution in the State. CARB sets and enforces emission standards for motor vehicles, fuels, and consumer products in the state of California. It sets the health based California Ambient Air Quality Standards (CAAQS) and monitors air quality levels throughout the state. The Board identifies and sets control measures for toxic air contaminants. The Board also performs air quality related research, provides compliance assistance for businesses, and produces education and outreach programs and materials. CARB is also responsible for compiling the SIP for submission to the EPA. Components of the SIP are prepared by local air polluting control districts in coordination with CARB.

California is divided into 15 Air Basins to better manage air pollution. Air basin boundaries define areas with similar geographical and meteorological features as well as political boundaries. While air pollution can move freely within an air basin, it can also sometimes be transported from one basin to another. The proposed project is located in the South Coast Air Basin (SCAB). The SCAB is comprised of parts of Los Angeles, Riverside and San Bernardino counties and all of Orange County. The Basin is bounded on the west by the Pacific Ocean and surrounded on the other sides by mountains. To the north lie the San Gabriel Mountains, to the north and east the San Bernardino Mountains, to the southeast the San Jacinto Mountains and to the south the Santa Ana Mountains. The Basin forms a low plain and the mountains channel and confines airflow that trap air pollutants.

The State has established 35 air pollution control districts to set and enforce regulations to control pollutant emissions from local pollution sources within their jurisdictions. The air district responsible for the SCAB is the South Coast Air Quality Management District (SCAQMD). The local air districts are responsible for preparing the portion of the SIP applicable within their boundaries. The districts also adopt and enforce regulations for stationary sources as well as develop and implement indirect source and transportation control measures.

The Southern California Association of Governments (SCAG) is an important partner to the SCAQMD, as it is the designated metropolitan planning authority for the area. SCAG is responsible for preparing the portion of the SIP that relates to transportation control measures (TCM) as well as providing land use and population projections. TCM are intended to reduce and improve vehicular travel and associated pollutant emissions.

The California Clean Air Act (CCAA) required all air pollution control districts in the state to prepare a plan prior to December 31, 1994 to reduce pollutant concentrations exceeding the CAAQS and ultimately achieve the CAAQS. The districts are required to review and revise these plans every three years. The SCAQMD satisfies this requirement through the publication of an Air Quality Management Plan (AQMP). The AQMP is developed by SCAQMD and SCAG in coordination with local governments and the private sector. The AQMP is incorporated into the SIP by CARB to satisfy the CCAA requirements discussed above. The AQMP is discussed further in Section 1.5.

1.3 Criteria Pollutants, Health Effects and Standards

Under the Federal Clean Air Act (FCAA), the U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six major pollutants; ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead. These six air pollutants are often referred to as the criteria pollutants. The NAAQS are two tiered: primary, to protect public health, and secondary, to prevent degradation to the environment (i.e., impairment of visibility, damage to vegetation and property).

Under the California Clean Air Act (CCAA), the California Air Resources Board have established California Ambient Air Quality Standards (CAAQS) to protect the health and welfare of Californians. State standards have been established for the six criteria pollutants as well as four additional pollutants; visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 1 presents the state and national ambient air quality standards. A brief explanation of each pollutant and their health effects is presented follows.

1.3.1 Ozone (O₃)

Ozone is a secondary pollutant; it is not directly emitted. Ozone is the result of chemical reactions between volatile organic compounds (VOC) (also referred to as reactive organic gasses (ROG)) and nitrogen oxides (NO_x), which occur only in the presence of bright sunlight. Sunlight and hot weather cause ground-level ozone to form in the air. As a result, it is known as a summertime air pollutant. Ground-level ozone is the primary constituent of smog. Because ozone is formed in the atmosphere, high concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when ozone levels are unhealthy. Numerous scientific studies have linked ground-level ozone exposure to a variety of problems, including:

- lung irritation that can cause inflammation much like a sunburn;
- wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities;
- permanent lung damage to those with repeated exposure to ozone pollution; and
- aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.

**Table 1
Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standards ^{1,2}	Federal Standards ³	
			Primary ^{2,4}	Secondary ^{2,5}
Ozone (O ₃)	1 Hour	0.09 ppm (180 µg/m ³)	--	--
	8 Hour	0.070 ppm (137 µg/m ³)	0.070 ppm ⁶ (137 µg/m ³)	Same as Primary
Respirable Particulate Matter (PM ₁₀) ⁷	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary
	AAM ¹³	20 µg/m ³	--	Same as Primary
Fine Particulate Matter (PM _{2.5}) ⁶	24 Hour	--	35 µg/m ³	Same as Primary
	AAM ¹³	12 µg/m ³	12 µg/m ³	15 µg/m ³
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	None
	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m ³)	--	--
Nitrogen Dioxide (NO ₂) ⁸	1 Hour	0.18 ppm (338 µg/m ³)	100 ppb (196 µg/m ³)	--
	AAM ¹³	0.030 ppm (56 µg/m ³)	0.053 ppb (100 µg/m ³)	Same as Primary
Sulfur Dioxide (SO ₂) ⁹	1 Hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	--
	3 Hour	--	--	0.5 ppm (1,300 µg/m ³)
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	--
	AAM ¹³	--	0.030 ppm (80 µg/m ³)	--
Lead ^{10, 11}	30 day Avg.	1.5 µg/m ³	--	--
	Calendar Quarter Rolling 3-Month Average	--	01.5 µg/m ³ 0.15 µg/m ³	Same as Primary
Visibility Reducing Particles ¹²	8 hour	Extinction coefficient of 0.23 per km -- visibility ≥ 10 miles (0.07 per km -- ≥30 miles for Lake Tahoe)	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)		
Vinyl Chloride ¹⁰	24 Hour	0.01 ppm (26 µg/m ³)		

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

3. National standards (other than ozone, PM₁₀, PM_{2.5}, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
7. On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
9. On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
10. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
12. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
13. Annual Arithmetic Mean--No Standard

Ground-level ozone can have detrimental effects on plants and ecosystems. These effects include:

- interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather;
- damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, national parks, and recreation areas; and
- reducing crop yields and forest growth, potentially impacting species diversity in ecosystems.

1.3.2 Particulate Matter (PM₁₀ & PM_{2.5})

Particulate matter includes both aerosols and solid particles of a wide range of size and composition. Of particular concern are those particles smaller than 10 microns in size (PM₁₀) and smaller than or equal to 2.5 microns (PM_{2.5}). The size of the particulate matter is referenced to the aerodynamic diameter of the particulate. Smaller particulates are of greater concern because they can penetrate deeper into the lungs than large particles.

The principal health effect of airborne particulate matter is on the respiratory system. Short term exposures to high PM_{2.5} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long term exposures to high PM_{2.5} levels are associated with premature mortality and development of chronic respiratory disease. Short-term exposure to high PM₁₀ levels are associated with hospital admissions for cardiopulmonary diseases, increased respiratory symptoms and possible premature mortality. The EPA has concluded that available evidence does not suggest an association between long-term exposure to PM₁₀ at current ambient levels and health effects.

PM_{2.5} is directly emitted in combustion exhaust and formed from atmospheric reactions between of various gaseous pollutants including nitrogen oxides (NO_x) sulfur oxides (SO_x) and volatile organic compounds (VOC). PM₁₀ is generally emitted directly as a result of mechanical processes that crush or grind larger particles or the re suspension of dusts most typically through construction activities and vehicular travels. PM_{2.5} can remain suspended in the atmosphere for days and weeks and can be transported long distances. PM₁₀ generally settles out of the atmosphere rapidly and are not readily transported over large distances.

1.3.3 Carbon Monoxide (CO)

Carbon monoxide is a colorless and odorless gas, which in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Carbon monoxide combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High carbon monoxide concentrations can lead to headaches, aggravation of cardiovascular disease, and impairment of central nervous system functions. Carbon monoxide concentrations can vary greatly over comparatively short distances. Relatively high concentrations are typically found near crowded intersections, along heavily used roadways carrying slow-moving traffic, and at or near ground level. Even under the most severe meteorological and traffic conditions, high concentrations of carbon monoxide are limited to locations within a relatively short distance (i.e., up to 600 feet or 185 meters) of heavily traveled roadways. Overall carbon monoxide emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

1.3.4 Nitrogen Dioxide (NO₂)

Nitrogen gas, normally relatively inert (unreactive), comprises about 80% of the air. At high temperatures (i.e., in the combustion process) and under certain other conditions it can combine with oxygen, forming several different gaseous compounds collectively called nitrogen oxides (NO_x). Nitric oxide (NO) and nitrogen dioxide (NO₂) are the two most important compounds. Nitric oxide is converted to nitrogen dioxide

in the atmosphere. Nitrogen dioxide (NO_2) is a red-brown pungent gas. Motor vehicle emissions are the main source of NO_x in urban areas.

Nitrogen dioxide is toxic to various animals as well as to humans. Its toxicity relates to its ability to form nitric acid with water in the eye, lung, mucus membrane and skin. In animals, long-term exposure to nitrogen oxides increases susceptibility to respiratory infections lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of NO_2 can suffer lung irritation and potentially, lung damage. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

NO_x is a combination of primarily NO and NO_2 . While the NAAQS only addresses NO_2 , NO and the total group of nitrogen oxides is of concern. NO and NO_2 are both precursors in the formation of ozone and secondary particulate matter as discussed in Sections 1.3.1 and 1.3.2. Because of this and that NO emissions largely convert to NO_2 , NO_x emissions are typically examined when assessing potential air quality impacts.

1.3.5 Sulfur Dioxide (SO_2)

Sulfur oxides (SO_x) constitute a class of compounds of which sulfur dioxide (SO_2) and sulfur trioxide (SO_3) are of greatest importance. Ninety-five percent of pollution related SO_x emissions are in the form of SO_2 . SO_x emissions are typically examined when assessing potential air quality impacts of SO_2 . Combustion of fossil fuels for generation of electric power is the primary contributor of SO_x emissions. Industrial processes, such as nonferrous metal smelting, also contribute to SO_x emissions. SO_x is also formed during combustion of motor fuels. However, most of the sulfur has been removed from fuels greatly reducing SO_x emissions from vehicles.

SO_2 combines easily with water vapor, forming aerosols of sulfurous acid (H_2SO_3), a colorless, mildly corrosive liquid. This liquid may then combine with oxygen in the air, forming the even more irritating and corrosive sulfuric acid (H_2SO_4). Peak levels of SO_2 in the air can cause temporary breathing difficulty for people with asthma who are active outdoors. Longer-term exposures to high levels of SO_2 gas and particles cause respiratory illness and aggravate existing heart disease. SO_2 reacts with other chemicals in the air to form tiny sulfate particles which are measured as $\text{PM}_{2.5}$. The health effects of $\text{PM}_{2.5}$ are discussed in Section 1.3.2.

1.3.6 Lead (Pb)

Lead is a stable compound, which persists and accumulates both in the environment and in animals. In humans, it affects the blood-forming or hematopoietic, the nervous, and the renal systems. In addition, lead has been shown to affect the normal functions of the reproductive, endocrine, hepatic, cardiovascular, immunological, and gastrointestinal systems, although there is significant individual variability in response to lead exposure. Since 1975, lead emissions have been in decline due in part to the introduction of catalyst-equipped vehicles, and decline in production of leaded gasoline. In general, an analysis of lead is limited to projects that emit significant quantities of the pollutant (i.e. lead smelters) and are not applied to transportation projects.

1.3.7 Visibility Reducing Particulates

Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The Statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. A separate standard for visibility-reducing particles that is applicable only in the Lake Tahoe Air Basin is based on reduction in scenic quality.

1.3.8 Sulfates (SO_4^{2-})

Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and / or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

1.3.9 Hydrogen Sulfide (H_2S)

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. It can also be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard will result in exposure to a very disagreeable odor. In 1984, an ARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

1.3.10 Vinyl Chloride (Chloroethene)

Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer in humans.

1.4 SCAB Attainment Designations

Based on monitored air pollutant concentrations, the EPA and CARB designate areas relative to their status in attaining the NAAQS and CAAQS respectively. Table 2 lists the current attainment designations for the SCAB. For the Federal standards, the required attainment date is also shown. The Unclassified designation indicates that the air quality data for the area does not support a designation of attainment or non-attainment.

Table 2 shows that the EPA has designated SCAB as extreme non-attainment for ozone, non-attainment for PM_{2.5}, and attainment/maintenance for PM₁₀, CO and NO₂. The basin has been designated by the state as non-attainment for ozone, PM₁₀, and PM_{2.5}. For the federal designations, the qualifier "extreme" affects the required attainment dates as the federal regulations have different requirements for areas that exceed the standards by greater amounts at the time of attainment/non-attainment designation. The SCAB is designated as in attainment of the Federal SO₂ and lead NAAQS as well as the state CO, NO₂, SO₂, lead, hydrogen sulfide, and vinyl chloride CAAQS.

Table 2
Designations of Criteria Pollutants for the SCAB

Pollutant	Federal	State
Ozone (O ₃)	Extreme Non-Attainment (2024)	Non-Attainment
Respirable Particulate Matter (PM ₁₀)	Attainment/ Maintenance	Non-Attainment
Fine Particulate Matter (PM _{2.5})	Non-Attainment (2021)	Non-Attainment
Carbon Monoxide (CO)	Attainment/ Maintenance	Attainment
Nitrogen Dioxide (NO ₂)	Attainment/ Maintenance	Attainment
Sulfur Dioxide (SO ₂)	Attainment	Attainment
Lead	Attainment*	Attainment
Visibility Reducing Particles	n/a	Unclassified
Sulfates	n/a	Unclassified
Hydrogen Sulfide	n/a	Attainment
Vinyl Chloride	n/a	Attainment

* A portion of Los Angeles County is designated as non-attainment for Lead due to high lead concentrations near the Exide automobile battery plant.

1.5 Air Quality Management Plan (AQMP)

As, discussed in Section 1.2, the Federal CAA (FCAA) requires all states with designated non-attainment areas to prepare SIP to demonstrate attainment of the NAAQS. SIPs for California are compiled by CARB. Local air pollution control districts are responsible for preparing the portions of the SIP that address local non-transportation pollutant sources within their jurisdiction and demonstrate attainment of the NAAQS by the required date. Further, the CCAA requires SCAQMD to publish a plan to reduce pollutant concentrations exceeding the CAAQS. In the SCAB, SCAQMD develops the AQMP for the air basin to satisfy these requirements. The AQMP is the most important air management document for the basin because it provides the blueprint for meeting state and federal ambient air quality standards. The plan is prepared in coordination with SCAG, local governments and the private sector with considerable public outreach and input.

The AQMP provides considerable background information on historical air quality in the SCAB and control efforts as well as pollution sources and impacts. Existing and future air pollutant emissions inventories for the basin are presented and analyzed along with the results of modeling of the pollutant concentrations that would occur under each of the inventoried conditions. To comply with the FCAA SIP requirements, the plan must then present control measures, along with their estimated effectiveness, to ensure that future concentrations will be less than the NAAQS by the attainment date required for each pollutant. The CCAA requires the plan to show 5% annual reductions for non-attainment pollutants, or include all feasible measures and an expeditious adoption schedule.

The Plans often discuss emerging air pollution issues. For example, the most recent Plan, the 2016 AQMP, discusses changes to the NAAQS, including two since the last AQMP in 2012. The changes are the US EPA revising the PM_{2.5} annual average standard from 15 to 12 $\mu\text{g}/\text{m}^3$ and finalizing the new 2015 eight-hour average ozone standard to 0.070 ppm. In order to attain the 2008 eight-hour ozone NAAQS, the NO_x emissions in the Basin will need to be reduced by about 51% by 2023, and 59% by 2032 below the emission rates projected for those years that include known future reductions. As most sources will be controlled by that time, attainment of the ozone standards will require development and broad deployment of zero and near zero emission technologies for on land transportation sources. With upcoming attainment deadlines and the EPA promulgating additional reductions with the 2015 eight-hour ozone NAAQS, this issue will become even more serious.

The 2016 AQMP also discusses ultrafine particulates which are particulates with a diameter of less than 0.1 μm (UFP or PM_{0.1}). Due to their small size, UFPs can penetrate deeply into the human respiratory tract, into the blood stream, and be transported to other critical organs such as the heart and brain. UFPs have been shown to be toxic and have health impacts, but are not specifically regulated. The Plan describes the results of research to characterize the physical and chemical properties of UFPs and their potential impact on people as well as the results of ambient UFP measurements in different environments. Potential control, mitigation, and policy strategies for limiting UFP exposures are discussed with recommendations for future actions to address this emerging and important topic

The AQMP is required to be updated every three years by the CCAA. It also must be updated in response to new or modified NAAQS. In recent years, updating of the AQMP has primarily been driven by new or modified NAAQS. As discussed above, the SCAB is not in attainment of the ozone and particulate NAAQS. Previously, the basin was not in attainment of the CO and NO₂ NAAQS as well. The 1997 AQMP included a demonstration of attainment of the NO₂ NAAQS as well as the Maintenance Plan required to assure continued attainment of the standard. The EPA re-designated the SCAB as attainment/maintenance for NO₂ in 1998 and approved SCAQMD's maintenance plan to ensure continued attainment of the standard. In 2005, SCAQMD submitted re-designation request and maintenance plan for the CO NAAQS separate from the AQMP process. The EPA approved the CO Re-Designation and Maintenance plan in 2007.

When the FCAA was adopted, the SCAB was designated as non-attainment for Total Suspended Particulates (TSP). Standards for both daily average and annual average concentrations were specified. Subsequent scientific data showed that the adverse health effects from exposure to particulate pollution were caused by particulates with a diameter of 10 microns (µm) or smaller, PM₁₀. In 1987, the EPA revised the particulate NAAQS to be based on PM₁₀ rather than TSP with an attainment date of December 31, 2001. The 1997 AQMP as amended in 1998 and 1999 determined that this attainment date was not feasible and requested a five-year extension for attainment. This extension was granted in April 2003. In December 2009 the SCAQMD submitted the 2009 South Coast PM₁₀ Re-Resignation Request and Maintenance Plan to the EPA. The EPA approved the Re-designation Request and Maintenance Plan in June 2013.

By 1997, additional research into particulate matter health effects showed that particulate matter with a diameter of 2.5 µm or smaller, PM_{2.5}, had adverse health effects at concentrations lower than those allowed by the 1987 PM₁₀ standard. In 1997 the EPA revised the particulate NAAQS to specify limits for PM_{2.5} concentrations in addition to the previously adopted PM₁₀ standards. The SCAB was identified as being non-attainment for the new PM_{2.5} standards in April 2005. The required attainment date for the 1997 PM_{2.5} NAAQS was April 5, 2010. The 2007 AQMP presented the attainment plan for the 1997 PM_{2.5} NAAQS. As a part of the 2007 AQMP, SCAQMD requested an attainment extension. The attainment plan and extension were approved in November 2011 with a revised attainment date of April 5, 2015. In 2016, the EPA determined the 1997 annual PM_{2.5} designation and 1997 24-hour PM_{2.5} as attainment.

In 2006, the EPA lowered the daily average PM_{2.5} NAAQS from 65 µg/m³ to 35 µg/m³ due to scientific research showing adverse health effects at lower concentrations. Further, the EPA rescinded the annual average PM₁₀ NAAQS as research indicated that adverse health effects were not associated with long-term exposures to PM₁₀. The daily average PM₁₀ NAAQS was retained. The SCAB was identified as being non-attainment for the 2006 PM_{2.5} standards in November 2011. The 2012 AQMP presented the attainment plan to achieve the 2006 PM_{2.5} NAAQS by the 2014 deadline. The EPA issued a proposed rule to partially approve the PM_{2.5} portion of the 2012 AQMP and 2015 AQMP Supplement in October 2015. The attainment demonstration was not approved due to impracticality and reclassified as "serious" with an attainment date no later than December 31, 2019.

The pollutant that is most problematic in the SCAB is ozone. The basin has been designated as non-attainment since the adoption of the FCAA in 1971. Originally, the ozone NAAQS was in terms of the maximum one-hour average concentration. By 1997, research had indicated that a longer exposure of eight-hours was better correlated with adverse health effects than one-hour average concentrations. In response to this research, the EPA replaced the 0.12 ppm one-hour ozone NAAQS with the 0.08 ppm eight-hour ozone NAAQS. While the one-hour standard was rescinded by the EPA with the adoption of the eight-hour standard, anti-backsliding provisions in the FCAA have required the EPA to continue to apply the one-hour standard to areas that were designated as non-attainment for the one-hour standard. The SCAB was designated as non-attainment for the 1997 eight-hour ozone standard in 2004.

All of the AQMPs up to and including the 2003 AQMP addressed attainment of the one-hour ozone standards. The 2007 AQMP was prepared to address the 1997 eight-hour ozone NAAQS and demonstrate attainment of the standard by 2024 as required by the EPA. The EPA approved this plan in December 2011.

While the 2016 AQMP was prepared to primarily address the three NAAQS standards including the 2008 eight-hour Ozone, 2012 annual PM_{2.5}, 2006 24-hour PM_{2.5}, along with revisions to the 1997 eight-hour ozone and 1979 one-hour ozone NAAQS standards. The updated plan presented new measures designed to reduce reliance on reduction from future anticipated, but unknown, technological advances expected to reduce NO_x and VOC emissions. On September 3, 2014 (79 FR 52526) the EPA announced that it was approving the portions of the 2012 AQMP that relate to attainment of the one-hour ozone and 1997 eight-hour ozone AAQS in the SCAB. Specifically, the control strategy for the 1997 eight-hour ozone standard and the attainment demonstration for the one-hour ozone standard were approved. EPA also found that the demonstrated attainment date for the one-hour ozone standard, December 31, 2022 to be appropriate given the severity of the problem and the limited emissions remaining that have not already been regulated.

In 2015, the EPA lowered the eight-hour ozone standard from 0.075 ppm to 0.070 ppm. The SCAB is expected to be designated as extreme non-attainment when the EPA assigns designations by October 1, 2018. EPA published proposed rules for implementation in May 2013. Under the proposed rule the state had until 2016 to submit an attainment plan and extreme classification requires the basin to attain the standard by December 31, 2032. However, court challenges have delayed adoption of the final implementation rules to 2018. In December 2014, the EPA announced plans to further reduce the eight-hour ozone standard to between 0.065 and 0.70 ppm while seeking comment on reducing the standard to as low as 0.060 ppm.

1.6 Climate

The climate in and around the project area, as with all of Southern California, is controlled largely by the strength and position of the subtropical high pressure cell over the Pacific Ocean. It maintains moderate temperatures and comfortable humidity, and limits precipitation to a few storms during the winter "wet" season. Temperatures are normally mild, excepting the summer months, which commonly bring substantially higher temperatures. In all portions of the basin, temperatures

well above 100 degrees F. have been recorded in recent years. The annual average temperature in the basin is approximately 62 degrees Fahrenheit.

Winds in the project area are usually driven by the dominant land/sea breeze circulation system. Regional wind patterns are dominated by daytime onshore sea breezes. At night the wind generally slows and reverses direction traveling towards the sea. Wind direction will be altered by local canyons, with wind tending to flow parallel to the canyons. During the transition period from one wind pattern to the other, the dominant wind direction rotates into the south and causes a minor wind direction maximum from the south. The frequency of calm winds (less than 2 miles per hour) is less than 10 percent. Therefore, there is little stagnation in the project vicinity, especially during busy daytime traffic hours.

Southern California frequently has temperature inversions which inhibit the dispersion of pollutants. Inversions may be either ground based or elevated. Ground based inversions, sometimes referred to as radiation inversions, are most severe during clear, cold, early winter mornings. Under conditions of a ground-based inversion, very little mixing or turbulence occurs, and high concentrations of primary pollutants may occur local to major roadways. Elevated inversions can be generated by a variety of meteorological phenomena. Elevated inversions act as a lid or upper boundary and restrict vertical mixing. Below the elevated inversion, dispersion is not restricted. Mixing heights for elevated inversions are lower in the summer and more persistent. This low summer inversion puts a lid over the South Coast Air Basin (SCAB) and is responsible for the high levels of ozone observed during summer months in the air basin.

1.7 Monitored Air Quality

Air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates for the SCAB were presented in the 2016 AQMP. The data indicate that on-road (e.g.; automobiles, busses and trucks) and off-road (e.g.; trains, ships, and construction equipment) mobile sources are the major source of current emissions in the SCAB. Mobile sources account for approximately 43% of VOC emissions, 82% of NO_x emissions, 27% of direct PM_{2.5} emissions, and 41% of SO_x emissions. Area sources (e.g., architectural coatings, residential water heaters, and consumer products) account for approximately 41% of VOC emissions and 13% of direct PM_{2.5} emissions. Point sources (e.g., chemical manufacturing, petroleum production, and electric utilities) account for approximately 47% of SO_x emissions.

The SCAQMD has divided its jurisdiction into 38 source receptor areas (SRA) with a designated ambient air monitoring station in most areas. The project is located in the South Coastal Los Angeles County SRA (SRA 4). The designated monitoring station for this SRA is the Long Beach - Hudson station, which is located approximately 5.5 miles southwest of the site near the intersection of Webster Avenue and Willow Street. The air pollutants measured at the Long Beach - Hudson site include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), Sulfur dioxide (SO₂) and respirable particulate matter (PM₁₀). Fine particulate matter (PM_{2.5}) is not measured at the Long Beach - Hudson station. Sulfur dioxide levels in the SCAB have been well below state and federal standards for many years.

The nearest station where fine particulate matter (PM_{2.5}) is monitored is the Long Beach – 710 Freeway station. This station is located approximately 3.5 miles west of the site near the intersection of Long Beach Boulevard and I-710 Freeway. The air pollutants measured at the Long Beach – 710 Freeway station include nitrogen dioxide (NO₂) and fine particulate matter (PM_{2.5}). The Long Beach – 710 Freeway station became active in 2015.

The air quality data monitored at the Long Beach - Hudson station from 2013 to 2016 are presented in Table 3. The data monitored for the same time period at the Long Beach – 710 Freeway station are presented in Table 4. The air quality data monitored were obtained from the CARB air quality data website (www.arb.ca.gov/adam/) and the SCAQMD Historical Data website (<http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year>).

The monitoring data presented in show that the only air quality standards exceeded in the project area in the past four years are particulates and ozone. Table 3 shows that the state one-hour ozone standard has not been exceeded in the past four years at the Long Beach - Hudson Station. At the Long Beach - Hudson Station the state and federal eight-hour ozone standards were exceeded at most one day each year in 2014.

The higher occurrence of ozone standard exceedances in 2014 illustrates the importance of weather conditions in determining ozone concentrations. One would expect that emissions of ozone precursors, ROG's and NO_x, in 2014 were similar to the previous years. The higher ozone levels and more frequent exceedances in 2014 were due to weather conditions. There were more periods of high heat and stagnant conditions that are favorable to the production and accumulation of ozone in the SCAB in 2014 than there were in prior years.

Tables 3 show the federal 24-hour PM₁₀ standard was not exceeded each available year at the Long Beach - Hudson stations. The state 24 PM₁₀ standard was exceeded in 2015 and 2016. The state annual average PM₁₀ standard was exceeded in 2015 and 2016 at the Long Beach - Hudson station. Table 4 shows the federal 24-hour PM_{2.5} standard was exceeded in 2015 but not in 2016 at the Long Beach – I-710 Freeway Station. The federal annual average PM_{2.5} standard was not exceeded at in 2015 and 2016.

CARB conducts various quality assurance and data review processes after the end of the year to generate the statistics. As this process is completed, partial results are posted on the website. When full results are posted there may be more days of exceedances of the 24-hour PM_{2.5} standards.

Table 3
Air Quality Measured at the Long Beach - Hudson Monitoring Station

Pollutant	California Standard	National Standard	Year	% Msrd. ¹	Max. Level	Days State Standard Exceeded ²	Days National Standard Exceeded ²
Ozone	0.09 ppm	None	2016	93	0.079	0	0
1 Hour			2015	96	0.087	0	0
Average			2014	96	0.087	0	0
			2013	99	0.090	0	0
Ozone	0.070 ppm	0.070 ppm	2016	50	0.059	0	0
8 Hour			2015	96	0.067	0	0
Average			2014	96	0.072	1	1
			2013	99	0.069	0	0
CO	9.0 ppm	9.0 ppm	2016	99	2.2	n/a	n/a
8 Hour			2015	99	2.2	n/a	n/a
Average			2014	95	2.6	n/a	n/a
			2013	88	4.7	n/a	n/a
NO₂	0.25 ppm	0.10 ppm	2016	100	0.075	0	No
1 Hour			2015	95	0.101	0	Yes
Average			2014	93	0.135	0	Yes
			2013	89	0.081	0	No
NO₂	None	0.053 ppm	2016	100	0.018	n/a	No
AAM ³			2015	95	0.019	n/a	No
			2014	93	0.020	n/a	No
			2013	89	0.021	n/a	No
Respirable Particulates	50 µg/m ³	150 µg/m ³	2016	16	75.0	3	0
PM₁₀			2015	16	80.0	6	0
24 Hour Average			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a
Respirable Particulates	20 µg/m ³	None	2016	16	31.9	Yes	n/a
PM₁₀			2015	16	31.5	Yes	n/a
AAM ³			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a

1. Percent of year where high pollutant levels were expected that measurements were made.

2. For annual averaging times a yes or no response is given if the annual average concentration exceeded the applicable standard. For the PM₁₀ and PM_{2.5} 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean-- Data Not Reported, n/a - no applicable standard

Sources: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed 4/2/18

SCAQMD Historical Data Website <http://www.aqmd.gov/smog/historicaldata.htm> accessed 4/2/18

Table 4
Air Quality Measured at the Long Beach – I-710 Freeway Monitoring Station

Pollutant	California Standard	National Standard	Year	% Msrd.¹	Max. Level	Days State Standard Exceeded²	Days National Standard Exceeded²
NO₂	0.25 ppm	0.10 ppm	2016	100	0.095	0	0
1 Hour			2015	69	0.094	0	0
Average			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a
NO₂	None	0.053 ppm	2016	100	0.023	n/a	No
AAM ³			2015	69	0.023	n/a	No
			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a
Fine Particulates	None	35 µg/m ³	2016	96	33.3	n/a	0
PM_{2.5}			2015	92	48.5	n/a	Yes
24 Hour Average			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a
Fine Particulates	12 µg/m ³	15 µg/m ³	2016	96	11.9	No	No
PM_{2.5}			2015	92	12.8	Yes	No
AAM ³			2014	n/a	n/a	n/a	n/a
			2013	n/a	n/a	n/a	n/a

1. Percent of year where high pollutant levels were expected that measurements were made.

2. For annual averaging times a yes or no response is given. If the annual average concentration exceeded the applicable standard. For the PM₁₀ and PM_{2.5} 24-hour standards, daily monitoring is not performed. The first number shown in Days State Standard Exceeded column is the actual number of days measured that State standard was exceeded. The second number shows the number of days the standard would be expected to be exceeded if measurements were taken every day.

3. Annual Arithmetic Mean

-- Data Not Reported, n/a – no applicable standard

Sources: CARB Air Quality Data Statistics web site www.arb.ca.gov/adam/ accessed 4/2/18

SCAQMD Historical Data Website <http://www.aqmd.gov/home/air-quality/air-quality-data-studies/historical-data-by-year> accessed 3/29/18

2.0 Potential Air Quality Impacts

Air quality impacts are usually divided into short term and long term. Short-term impacts are usually the result of construction or grading operations. Long-term impacts are associated with the built out condition of the proposed project.

2.1 Thresholds of Significance

2.1.1 Regional Air Quality

In their "1993 CEQA Air Quality Handbook", the SCAQMD has established significance thresholds to assess the impact of project related air pollutant emissions. Table 5 presents these significance thresholds. There are separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds are considered to have a less than significant effect on regional air quality. It should be noted the thresholds recommended by the SCAQMD are very low and subject to controversy. It is up to the individual lead agencies to determine if the SCAQMD thresholds are appropriate for their projects.

Table 5
SCAQMD Regional Pollutant Emission Thresholds of Significance

	Regional Significance Threshold (lbs/day)					
	CO	VOC	NO _x	PM ₁₀	PM _{2.5}	SO _x
Construction	550	75	100	150	55	150
Operation	550	55	55	150	55	150

2.1.2 Local Air Quality

As part of the SCAQMD's environmental justice program, attention was focused on localized effects of air quality. In accordance with Governing Board direction, SCAQMD staff developed localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. The LST's represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. The LST methodology is described in "Final Localized Significance Threshold Methodology" dated June 2003 by the SCAQMD and is available at the SCAQMD website (<http://aqmd.gov/ceqa/handbook/LST/LST.html>).

The LST mass rate look-up tables provided by the SCAQMD allow one to determine if the daily emissions for proposed construction or operational activities could result in significant localized air quality impacts. If the calculated on-site emissions for the proposed construction or operational activities are below the LST emission levels found on the LST mass rate look-up table, then the proposed construction or operation activity will not result in a significant impact on local air quality.

The LST mass rate look-up tables are applicable to the following pollutants only: oxides of nitrogen (NO_x), carbon monoxide (CO), respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}). LST's are derived based on the location of the activity (i.e., the source/receptor area); the emission rates of NO_x, CO, PM₁₀, and PM_{2.5}; and the distance to the nearest exposed individual. This distance is based upon the uses around the project and the Ambient Air Quality Standard (AAQS) averaging times for the pollutants of concern. The shortest AAQS averaging time for CO and NO₂ are for one-hour and the nearest exposed individual is the location where a person could be expected to remain for 1-hour. The shortest averaging time for the PM₁₀ and PM_{2.5} AAQS is 24 hours and the nearest exposed individual is the location where a person could be expected to remain for 24-hours. Typically, this is the nearest residential use.

The LST methodology presents mass emission rates for each SRA, project sizes of 1, 2, and 5 acres, and nearest receptor distances of 25, 50, 100, 200, and 500 meters. For project sizes between the values given, or with receptors at distances between the given distances, the methodology uses linear interpolation to determine the thresholds. If receptors are within 25 meters of the site, the methodology document says that the threshold for the 25-meter distance should be used.

The project is located in SRA 4. The approximate 1.4-mile-long proposed roadway widening is lined partially with commercial uses but does contain some sensitive receptors including schools, churches, and hotels. Therefore, the thresholds were calculated based on an observer distance of 82 feet (25 meters). When the Project site is larger than 5-acres, the largest project size for which screening tables are provided, the thresholds for a 5-acre project site can be used as a screening threshold. If the emissions from a project with a larger site are less than the allowable emissions for a 5-acre project site, then the larger project site will not result in a significant localized air quality impact.

The LST thresholds specific for the proposed project are presented in Table 6. A project with on-site daily emission rates below these thresholds is considered to have a less than significant effect on local air quality.

Table 6
Localized Significance Thresholds

	Localized Significance Threshold (lbs/day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
Construction	1,530.0	123.0	14.0	8.0
Operation	1,530.0	123.0	4.0	2.0

In addition, the project would result in a local air quality impact if the project results in increased traffic volumes and/or decreases in Level of Service (LOS) that would result in an exceedance of the CO ambient air quality standards of 20 ppm for 1-hour Carbon Monoxide (CO) concentration levels, and 9 ppm for 8-hour CO concentration levels. If the CO concentration levels at potentially impacted intersections with the project are lower the standards, then there is no significant impact. If future CO concentrations with the project are above these levels, then the project will have a significant local air quality impact.

2.2 Short-Term Impacts

Temporary impacts will result from project construction activities. Air pollutants will be emitted by construction equipment and fugitive dust will be generated during demolition of the existing improvements as well as during landscaping of the site.

2.2.1 Construction Emission Calculation Methodology

Emissions during the primary phases of construction were calculated using CalEEMod program (version 2013.3.2). The CalEEMod model calculates total emissions resulting from each construction activity, on-site and off-site, which are compared to the SCAQMD Regional Thresholds. On-site project emissions, which are compared to the SCAQMD Local Significance Thresholds, were calculated by scaling the emissions from on-road sources so that only the emissions from on-site portion of the trip are included. Each worker was assumed to have a 14.7 mile component. Vendor trip lengths were identified for each phase to match the number of deliveries expected during each phase. Each hauling trip were set to a 20 mile component except architectural coatings. Architectural coatings haul trip length was identified by the amount of striping that needs to be performed.

While CalEEMod includes considerable default construction information for a variety of project types, it does not provide any default assumptions for the parameters used to estimate construction emissions for a roadway improvement project. The parameters used to estimate construction emissions were developed based on the quantities and areas to be affected by the construction and developed in conjunction with the design engineer for the project Willdan Group Inc.

The project will be constructed in two (2) separate phases: The first phase consisting of the utility undergrounding work to be performed by Southern California Edison and the second phase of the project to construct the bikeway, streetscape and roadway improvements which will occur separately on each side of the street to minimize disruption to local traffic and businesses during construction. During this phase, 200 cubic yards of material will be exported.

The four primary construction activities of the second phase will be (1) demolition and excavation of the parkway and roadway, (2) construction of concrete curbs, (3) paving and striping, and (4) landscaping of parkways and center medians. Demolition and excavation will remove approximately 8,300 cubic yards of material. This work is anticipated to take approximately five (5) months to complete. Construction of the parkways and medians will require pouring of approximately 2,900 cubic yards of material and exporting 500 cubic yards of material. This work is anticipated to take approximately eight (8) months to complete. Paving and striping will require importing approximately 9,100 cubic yards of material. This work is anticipated to take approximately three (3) months to complete. Landscaping of the parkways and medians will require importing of approximately 9,400 cubic yards of material. This work is anticipated to take approximately five (5) months to complete. Based on the above construction activities, approximately twenty (20) months is anticipated to complete improvements on one side of the street with some concurrent activities occurring during paving and landscaping.

The following paragraphs provide the information used to develop the construction activity estimates used for the construction emissions estimate. Worksheets showing the relevant input parameters used to calculate the emissions as reflected in the CalEEMod output file are provided in the appendix. The CalEEMod input and output files are available upon request.

Utility Work: The project will relocate the existing utilities underground, consisting of over 15,200 feet total of trenching on both sides of Lakewood Blvd. Material exports will be 200 cubic yards and generate 0.06 trips per day during the duration of the project. Vendor trips, including trenching, will generate 29.1 trips per day. The duration of the project is anticipated to take 86 weeks.

Demolition and Excavation of Parkway and Roadway: The project will remove existing distressed pavement from the roadway in preparation for the pavement overlay. Existing concrete curbs and medians will be demolished in preparation of constructing replacement drought tolerant landscaped medians. This project will also remove material within the right-of-way along the roadway for preparation to construct a parkway. The project will export approximately 4,500 cubic yards of material in preparation to construct the parkway and pavement overlay. This work is

anticipated 22 weeks to complete. Hauling of the material will generate approximately 3.5 truck trips per day.

Construction of Concrete Curbs and Wall: The project will construct new concrete curbs for reconstructed medians, roadway edges and parkway. A retaining wall/fence between Candlewood Street and Del Amo Boulevard will be constructed between the parkway and a retaining wall. Concrete pouring will require approximately 2,900 cubic yards of material. Deliveries, including concrete deliveries, will generate an average of 2.6 truck trips per day. Export of material is anticipated to be 500 cubic yards and generate 0.28 trips per day. This work is anticipated to take approximately 35 weeks to complete.

Paving and Striping: The project will pave approximately 9,000 cubic yards of material for the roadway rehabilitation and for paving the parkway. Road striping will occur after paving. Approximately 731,100 square feet of roadway area will be overlaid, using 4,500 cubic yards of material. Approximately 219,400 square feet of parkway area will be overlaid, using approximately 4,500 cubic yards of material. Material delivery will generate approximately 14.0 truck trips per day.

Roadway striping will use approximately 161 gallons of paint (assuming 112 gallons of paint for six lanes per mile) and result in 592 lbs of VOC's for 6 lanes. Striping will use an off road truck that will generate 18.4 hauling trips at a trip length of 0.28 miles. This work is anticipated to take approximately 13 weeks to complete.

Landscaping Median and Parkway: The project will landscape the medians and parkway with approximately 9,500 cubic yards of material and 300 plants. Import of plant and fill material is anticipated to generate an average of 8.7 truck trips per day. This work is anticipated to take approximately 22 weeks to complete.

Note that delays in the start of construction would not significantly affect emission estimates. In fact, the CalEEMod program includes a reduction in on-road and off-road vehicle exhaust emissions each year to account for new construction equipment and on-road vehicles manufactured under stricter emission standards becoming a larger part of the construction fleet (a fleet average emission factor is used to estimate emissions). So for emissions modeling purposes, a delay moving the activity into the following year would actually result in a slight reduction in the exhaust emissions estimates. Lengthening the duration of each activity would result in the same or lower daily emissions as daily activity levels for emission sources would either not change or decrease as the work is spread out over a longer period of time. A shortening of any of the construction activities assumed could result in higher emissions and would require a re-analysis of the emission impacts.

2.2.2 Regional Construction Emissions

Using the estimates presented above, the air pollutant emissions were calculated and presented in Table 7. The daily emissions are calculated and these represent the highest level of emissions during each construction activity.

Table 7
Total Construction Emissions by Activity

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Trenching - 2019	12.2	14.2	1.6	1.0	0.9	0.0
Trenching - 2020	20.3	18.4	2.1	1.3	1.1	0.0
Demolition - 2020	20.0	16.7	1.9	1.2	0.9	0.0
Construction - 2020	5.2	5.9	39.0	0.3	0.3	0.0
Construction - 2021	18.0	39.2	3.7	10.4	6.3	0.0
Paving - 2021	12.2	14.2	1.6	1.0	0.9	0.0
Architectural Coating - 2021	12.0	13.3	1.5	0.9	0.8	0.0
Site Preparation - 2021	42.5	56.5	5.8	4.2	2.7	0.1
Significance Threshold Exceed Threshold?	550 No	100 No	75 No	150 No	55 No	150 No

Table 7 shows that no individual construction activity will generate emissions that exceed the SCAQMD Regional Emissions Significance Thresholds. In 2020, trenching will occur concurrently with demolition and construction. In 2021, construction will occur concurrently with painting, paving, and landscaping. Table 8 presents the total emissions during these concurrent construction activities. These are simply the sum of the emissions presented in Table 7 for the concurrent activities.

Table 8
Total Concurrent Construction Emissions

Activity	Daily Emissions (lbs/day)					
	CO	NO _x	VOC	PM ₁₀	PM _{2.5}	SO _x
Trenching, Demolition, Construction - 2020	74.8	88.3	9.4	6.5	4.5	0.2
Construction, Paving, Architectural Coating, Site Preparation - 2021	58.2	78.4	46.6	13.0	8.2	0.1
Significance Threshold Exceed Threshold?	550 No	100 No	75 No	150 No	55 No	150 No

Table 8 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Regional Emissions Significance Thresholds. Therefore, the construction of the project will not result in a significant regional air quality impact.

2.2.3 On-site Construction Emissions

On-site emissions for each of the construction activities were calculated based on the CalEEMod output as discussed in Section 2.2.1 and are presented in Table 9. The applicable LST thresholds are also presented.

Table 9
On-Site Emissions By Construction Activity

Activity	Daily Emissions (lbs/day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
Trenching - 2019	11.1	12.3	0.9	0.8
Trenching - 2020	19.4	17.9	1.1	1.0
Demolition - 2020	19.2	16.3	0.9	0.9
Construction - 2020	13.3	12.2	0.7	0.6
Construction - 2021	5.0	5.9	0.3	0.3
Paving - 2021	11.1	12.3	0.9	0.8
Architectural Coating - 2021	11.0	11.4	0.8	0.7
Site Preparation - 2021	41.4	53.8	3.9	2.6
Significance Threshold	1,530	123	14	8
Exceed Threshold?	No	No	No	No

Table 9 shows that no individual construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. In 2020, trenching and demolition will occur concurrently with construction. In 2021, construction, paving, and striping will occur concurrently with site preparation and landscaping. Table 10 presents the total emissions during these concurrent construction activities. These are simply the sum of the emissions presented in Table 9 for the concurrent activities.

Table 10
On-Site Emissions By Concurrent Construction Activities

Activity	Daily Emissions (lbs/day)			
	CO	NO _x	PM ₁₀	PM _{2.5}
Trenching, Demolition, Construction - 2020	71.9	83.2	5.8	4.3
Construction, Paving, Architectural Coating, Site Preparation - 2021	54.2	71.1	11.8	7.9
Significance Threshold	1,530	123	14	8
Exceed Threshold?	No	No	No	No

Table 10 shows that no concurrent construction activity will generate emissions that exceed the SCAQMD Localized Significance Thresholds. Therefore, the construction of the project will not result in a significant local air quality impact.

2.2.4 Diesel Particulate Matter Emissions During Construction

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (Diesel Particulate Matter or DPM) as a Toxic Air Contaminant (TAC). It is assumed that the majority of the heavy construction equipment utilized during construction would be diesel fueled and emit DPM. Impacts from toxic substances are related to cumulative exposure and are assessed over a 70-year period. Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance over a 70-year lifetime (California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Guide to Health Risk Assessment.) Demolition and grading for the project, when the peak diesel exhaust emissions would occur, is expected to take approximately six months, cumulatively, with all construction expected to take approximately one year. Because of the relatively short duration of construction compared to a 70-year lifespan, diesel emissions resulting from the construction of the project are not expected to result in a significant impact.

2.3 Long Term Impacts

The primary source of long-term operational air pollutant emissions associated with the project will be motor vehicles. Long-term operational emissions from the project also include landscape maintenance equipment and maintenance painting. However, the project is more likely to lead to a reduction in emissions due to reduced congestion and increased trips associated with an improved Level of Service.

2.3.1 Local Air Quality Impacts Near Intersections Affected by Traffic Generated by The Project

Increased traffic volumes during construction will result in increased pollutant emissions in the vicinity of the roads utilized by this traffic, which can cause pollutant levels to exceed the ambient air quality standards. Carbon monoxide (CO) and particulates (PM₁₀ and PM_{2.5}) are the pollutants of major concern along roadways.

The most notable source of CO is motor vehicles. For this reason, carbon monoxide concentrations are usually indicative of the local air quality generated by a roadway network, and are used as an indicator of its impacts on local air quality. CO concentrations are highest near intersections where queuing increases emissions.

The road improvements will ultimately result in an improved Level of Service which may reduce congestion and increase trips. The reduction in congestion may further reduce local CO and particulate matter concentrations.

The project is not anticipated to cause or significantly contribute to any CO or particulate matter concentrations exceeding the AAQS along the project. Therefore, the Project will not result in a significant local air quality impact along roadways serving the project.

2.4 Compliance with Air Quality Planning

The following sections deal with the major air planning requirements for this project. Specifically, consistency of the project with the AQMP is addressed. As discussed below, consistency with the AQMP is a requirement of the California Environmental Quality Act (CEQA).

2.4.1 Consistency with AQMP

An EIR must discuss any inconsistencies between the proposed project and applicable GPs and regional plans (California Environmental Quality Act (CEQA) guidelines (Section 15125)). Regional plans that apply to the proposed project include the South Coast Air Quality Management Plan (AQMP). In this regard, this section will discuss any inconsistencies between the proposed project with the AQMP.

The purpose of the consistency discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-maker determines that the project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD's CEQA Handbook states that "New or amended GP Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP." Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the plan if it furthers one or more policies and does not obstruct other policies. The Handbook identifies two key indicators of consistency:

- (1) Whether the project will 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 (except as provided for CO in Section 9.4 for relocating CO hot spots).
- (2) Whether the project will exceed the assumptions in the AQMP based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criterion 1 - Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis contained in this report, there will not be significant short-term construction and long-term operational impacts due to the project based on the SCAQMD thresholds of significance. Emissions generated during construction will not exceed SCAQMD's LST criteria, and therefore, it is unlikely that development of the project will increase the frequency or severity of existing air quality violations in the immediate vicinity of the project. Further, the project is not projected to result in any exceedances due to traffic volume increases at intersections. The proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards, thus the project is found to be consistent with the AQMP for the first criterion.

Criterion 2 - Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the project with the assumptions in the AQMP. Thus, the emphasis of this criterion is to insure that the analyses conducted for the project are based on the same forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth

Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA.

Since the SCAG forecasts are not detailed, the test for consistency of this project is not specific. The SCAG forecasts are based on the General Plans of municipalities in the basin. The project is consistent with the University's Long Range Development Plan (LDRP) which is effectively the University's General Plan. Further, the analysis presented above shows that the total project emissions are less than the SCAQMD significance thresholds. The emissions increase due to the project is minor and will not interfere with the AQMP or the attainment of the ambient air quality standards. Therefore, emissions from the project site at project completion will not be greater than those anticipated in the AQMP.

3.0 Mitigation Measures

3.1 Short-Term Impacts

The analysis presented in Section 2.2 concluded that the construction of the project would not result in any significant short-term air quality impacts. Note that demolition and construction activities will need to comply with SCAQMD's Rule 403 to minimize fugitive dust emissions.

3.2 Long-Term Impacts

The analysis presented in Section 2.3 concluded that the project would not result in any significant long-term air quality impacts. No mitigation measures are required.

4.0 Unavoidable Significant Impacts

With the mitigation measures described in Section 3.0, all significant impacts will be reduced to a level of insignificance and the project will not result in any unavoidable significant impacts.

Appendix

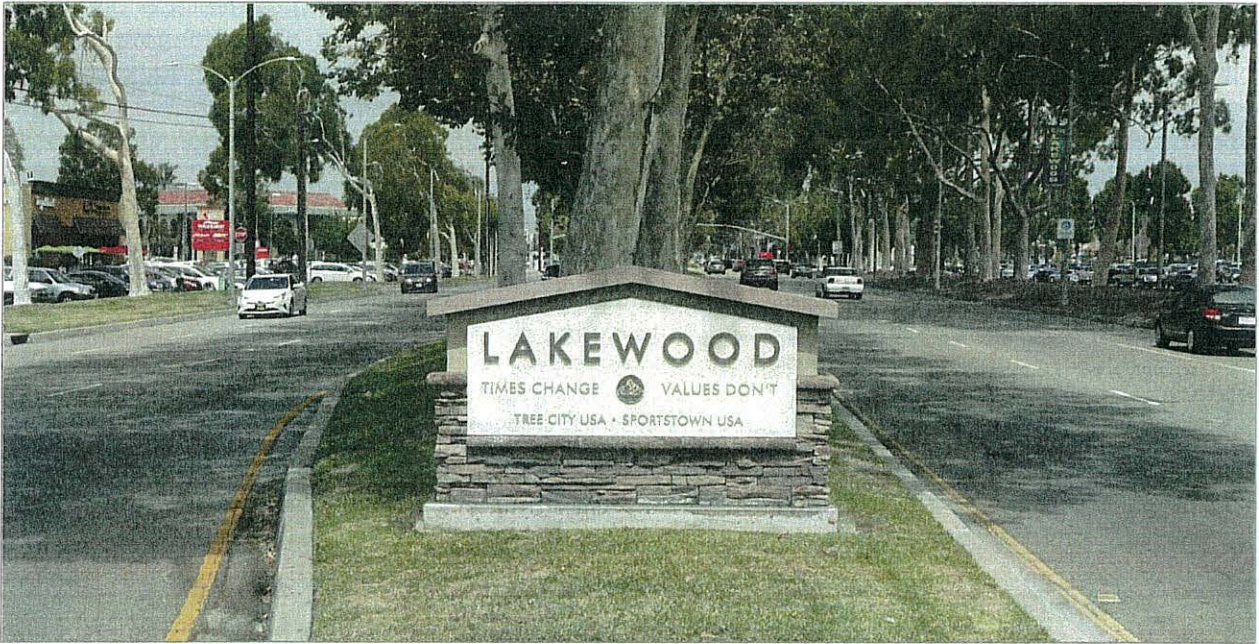
CalEEMod Operational Input Summary

CalEEMod Input and Output Files Available Upon Request

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Lakewood Boulevard Capacity Enhancement Project Lakewood, California

Cultural Resources Inventory Report



Prepared for
Willdan Engineering

13191 Crossroads Parkway North, Suite 405
Industry, California 91746

Contact: Robert Sun

Prepared by
Greenwood and Associates

725 Jacon Way
Pacific Palisades, CA 90272

Dana N. Slawson, M. Arch.
John M. Foster, RPA

May 2018

and ornamental grasses, mixed with a variety of drought-tolerant groundcover and perennials along the center median.

To accommodate the parkway improvements, a reduction of existing curb-to-curb width of 5 to 6 feet will be required along the project. The present six lane configuration of Lakewood Boulevard would be maintained through narrowing of the center median by up to three feet, and also via lane width reductions. The typical parkway configuration would accommodate a 5-foot wide bike lane and a separate sidewalk between 4 to 7 feet in width (refer to Appendix B).

As the project is presently proposed, additional street right-of-way would be required along the east and west sides of Lakewood Boulevard to accommodate parkway improvements. These ROW acquisitions are relatively minor -- approximately 16,356 square feet in total -- and will not result in significant changes that would alter the capacity of Lakewood Boulevard. Areas of ROW acquisition include the northwest corner of Del Amo and Lakewood Boulevards, where a 12 to 16-foot strip adjacent to modern commercial/office uses would be acquired, as well as a 10-foot strip of existing parkway area abutting residential properties along the east side of Lakewood Boulevard from Andy Street to Ashworth Street.

Other project improvements would include intersection and signal modifications, utility undergrounding, streetscape improvements, storm drain upgrades, and street overlay and striping.

Traffic signal modifications include installation of traffic signal poles, conduit, controllers and service cabinets. These modifications would occur at four intersections along Lakewood Boulevard: Hardwick Street, Candlewood Street, South Street, and Ashworth Street. An additional north-bound left-turn would be installed at the intersection of Hardwick Street.

The project would eliminate utility poles by placing the existing Southern California Edison (SCE) overhead power and telecommunication lines in underground ducts on both the east and west side of the roadway. Relocation of underground gas, electric and telephone facilities may be required as well. SCE will perform the actual undergrounding work, which will involve digging trenches up to six feet deep and two feet wide within the roadway.

Additional streetscape elements the project will include are the installation of two City entry monument signs at the north and south City limits of Lakewood Boulevard, and the installation of other street signage. The project will repair, replace, and modify curbs, driveways and sidewalks. Between 90 and 95 percent of existing sidewalks and gutters will be removed and replaced and new sidewalks will be added along sections of the boulevard where they do not currently exist, including a meandering sidewalk in the parkway on the east side of Lakewood Boulevard between South Street and Ashworth Street. Where appropriate, sidewalk improvements will include installation or replacement of Americans with Disabilities Act (ADA) compliant access curb ramps.

The project will provide storm drain upgrades including reconstruction of existing catch basins. Storm water quality treatment facilities or "infiltration basins" will be installed along Lakewood Boulevard which are intended to remove potential contaminants in runoff from discharging into stormwater facilities. Typically seven feet long, four feet wide and six feet deep, they will be installed along parkways and involve removing portions of the sidewalk, constructing the drywell walls and top in place. To increase groundwater recharge, the landscaped center medians will also be reconstructed as a bio-retention area to reduce stormwater runoff.

2.0 Methods

2.1 Research Methods

A search of cultural resource records was conducted for the proposed project at the South Central Coastal Information Center (SCCIC) at California State University, Fullerton, by Greenwood and Associates staff on September 11, 2017. The search consisted of a check of the California Historical Resources Information System (CHRIS) for any previously recorded cultural resource sites and isolates within a 0.5-mile radius of the proposed project area. The records search examined maps depicting previous surveys and study locations, as well as locations of previously recorded historical and archaeological resources. Copies of records for resources within the search were obtained, and a bibliography of all past studies was compiled.

Current inventories of the National Register of Historic Places (Listed Properties and Determined Eligible Properties), the California Register of Historical Resources, the California Historical Landmarks, and California Points of Historical Interest were also consulted. The database of the California State Historic Resources Inventory (HRI) for Los Angeles County was reviewed to identify any local resources previously evaluated for historic significance, and historical maps were inspected for information regarding historical development in the vicinity of the proposed project area. Additional research included review of local histories and regional overviews, along with other manuscripts and archival materials obtained from private, library, and internet sources.

Specialized research was conducted by Mr. Dana N. Slawson, M. Arch., at the Los Angeles County Library, Angelo M. Iacoboni Branch, and the in-house reference library maintained by Greenwood and Associates. Reference materials secured from internet sources were also consulted.

2.2 Field Methods

A pedestrian reconnaissance of the Lakewood Boulevard project area was completed by Greenwood and Associates architectural historian and archaeologist Dana Slawson, M. Arch., on September 15, 2017. The reconnaissance examined buildings, structures, built features, and landscape elements within the proposed project boundaries, and also considered aspects of the streetscape and the surrounding environment. Concentrations of various functional types were recorded, as were areas of older construction, and individual buildings and features of potential historical interest. Additionally, areas of exposed soil within the project limits were examined for evidence of possible archaeological deposits. Representative photographs of the project area were taken.

2.3 Native American Consultation

A request to the Native American Heritage Commission (NAHC) for a search of their Sacred Lands File, and for a list of Native American contacts within the region of the project area, was submitted on behalf of the City of Lakewood on September 19, 2017. A response from the NAHC was received on October 10, 2017, and contact with representatives of the various local Native American groups was subsequently initiated. A summary of the proposed project was

provided, and groups were encouraged to respond with any information or concerns that they may have relative to the project scope and location (Table 1). To date, one response has been received from a Native American group indicating a concern regarding the proposed project. This report will be updated as additional communications are received. Native American consultation documents are included in Appendix C.

Table 1. Coordination with Local Native American Groups

Native American Contact	Contact	Results
Charles Alvarez Gabrielino-Tongva Tribe 23454 Vanowen Street West Hills, CA, 91307	Mail, Email	No response
Robert Dorame, Chairperson Gabrielino Tongva Indians of California Tribal Council P.O. Box 490 Bellflower, CA 90707	Mail, Email	No response
Sandonne Goad, Chairperson Gabrielino/Tongva Nation 106 1/2 Judge John Aiso St. No. 231 Los Angeles, CA 90012	Mail, Email	No response
Anthony Morales, Chairperson Gabrielino/Tongva San Gabriel Band of Mission Indians P.O. Box 693 San Gabriel, CA 91778	Mail, Email	No response
Andrew Salas, Chairperson Gabrieleño Band of Mission Indians - Kizh Nation P.O. Box 393 Covina, CA, 91723	Mail, Email	Mr. Salas submitted a response stating that his group had concerns regarding the archaeological sensitivity of the Project Area and indicating that the Gabrieleño Band of Mission Indians/Kizh Nation would like to engage in AB-52 consultation with City representatives.

AB-52 Consultation

Under California State Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environment Quality Act, a lead agency (City of Lakewood) is required to provide formal notification of a proposed project to California Native American tribes that are traditionally and culturally affiliated with the geographic area of the project, if the tribe has requested to be informed of and consulted on projects in that geographic area.

A total of nine individuals representing six Native American groups have requested project notification from the City of Lakewood. Letters of notification were submitted to the representatives listed below by the City Department of Public Works on March 15, 2018. Two groups, the Tongva Ancestral Territorial Tribal Nation and the Gabrieleño Band of Mission Indians-Kizh Nation, provided responses to the City indicating that their tribal organizations have concerns for potential project-related impacts to cultural resources and requesting that a certified Native American archaeological monitor be present during project related ground disturbing activities. The City subsequently replied to the concerned parties with an approach to

treatment of potential cultural resources that would accommodate the concerns of the tribal groups. To date, no additional consultation between the Native American groups and the City has been requested. All correspondence regarding the discretionary notification of tribal groups and notification under the requirements of AB-52 is included in Appendix C.

Table 2. AB-52 Notification List

Gabrieliño-Tongva Tribe Linda Candelaria, Co-chairperson 1999 Avenue of the Stars, Ste 1100 Los Angeles, CA 90067	Gabrieliño-Tongva Tribe Bernie Acuna, Co-chairperson 1999 Avenue of the Stars, Ste 1100 Los Angeles, CA 90067	Gabrieliño-Tongva Tribe Conrad Acuna 1999 Avenue of the Stars, Ste 1100 Los Angeles, CA 90067
Gabrieliño Tongva Indians of California Tribal Council Robert Dorame, Chairperson P.O. Box 490 Bellflower, CA 90707	Gabrieliño/Tongva Nation Sandonne Goad, Chairperson 106 1/2 Judge John Aiso St. No. 231 Los Angeles, CA 90012	Gabrieliño/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson P.O. Box 693 San Gabriel, CA 91778
Gabrieliño Band of Mission Indians - Kizh Nation Andrew Salas, Chairperson P.O. Box 393 Covina, CA, 91723	Gabrieliño/Tongva Nation Sam Dunlap, Cultural Resources Director P.O. Box 86908 Los Angeles, CA 90066	Tongva Ancestral Territorial Tribal Nation John Tommy Rosas, Tribal Admin. Email: tattnlaw@gmail.com

3.0 Project Setting

3.1 Environmental Setting

The project is located in the City of Lakewood, in Los Angeles County, north of Long Beach and approximately 15 miles southeast of downtown Los Angeles. Set in a low-density, predominantly residential environment, the proposed project encompasses an approximately 1.45-mile segment of Lakewood Boulevard that is currently a six-lane divided street spanning between the north and south City limits: from Ashworth Street to Del Amo Boulevard. The existing roadway configuration ranges from 100 to 220 feet of public right-of-way consisting of travel lanes, striped and raised center medians, parkways, and in some segments, frontage roads on one or both sides of the street along the project. The existing curb to curb width varies from 84 to 116 feet and flanking parkways range from 5 to 28 feet wide along Lakewood Boulevard.

Lakewood Boulevard is one of the major north-south arterial streets connecting a number of communities in southeast Los Angeles from Downey to Long Beach. It is also one of Lakewood's principal commercial thoroughfares, providing access to many commercial and retail businesses. Land uses along this portion of Lakewood Boulevard consist primarily of low-rise single-family residences which are buffered from the Boulevard by a frontage street, or that directly adjoin Lakewood Boulevard with street access provided by adjacent parallel and perpendicular streets. Commercial uses -- typically low-rise in nature -- are located mostly along the southern third of the project alignment with shopping center retail businesses, including Lakewood Center, a regional shopping mall. Other commercial uses along the project include neighborhood supporting retail uses near the South Street intersection. Existing buildings typically date to the mid 1940s through the 2000s. Power transmission lines cross the

project area immediately north of Ashworth Street. Development along the adjacent side streets is characterized by detached low-rise single-family suburban style dwellings, primarily dating to the World War II and immediate post World War II time period (1940 to 1950). The topography is generally flat and the project area lies at an elevation of 50-60 feet amsl. The project area is located on the USGS Long Beach, CA 7.5' quadrangle map (Figure 3).

Most of the parkways along Lakewood Boulevard do not currently accommodate pedestrians. They are landscaped with turf, mature street trees, and non-native landscape materials. A 14 to 28-foot wide raised central median landscaped with turf and mature trees extends the length of the project area.

3.2 Cultural Setting

The following summary is based on a literature search conducted for the vicinity of the Lakewood Boulevard Capacity Enhancement Project area. It is intended both to indicate the potential for the presence of cultural resources within the proposed project area, and to provide a context for any cultural data that may be present within the proposed project area.

The most relevant historical-contextual themes identified by the background research for the proposed project area include World War II and post war suburban residential and commercial development, and the post World War II growth of Lakewood.

Prehistory

Humans have lived in the region of southern California for at least 10,000 years, and several chronologies have been proposed to divide different periods of habitation and development. The chronology presented by Wallace (1955; 1978:25-35) divides this time span into the Early Period (10,000 BP to 8000 BP), the Milling Stone Period (8000 BP to 3000 BP), the Intermediate Period (3000 BP to AD 1000), the Late Prehistoric Period (AD 1000 to 1770), and the Historic Period (1770 to present), each of which is characterized by changes in patterns of human behavior and material culture.

Large projectile points from the Early Period reflect dependence on large animals, although the diet likely included smaller game and wild plants. Sites representing this period have been found mostly inland at prehistoric lakebeds (e.g., China Lake, Tulare Lake). The Milling Stone Period, as its name suggests, is characterized by milling stones and manos used in the preparation of plant and seed-based foods during a period of warming temperatures and increasingly drier climates in North America. Subsistence on terrestrial game supplemented the diet of people during this time, but did not necessarily include coastal resources (Wallace 1978:28). During the Intermediate Period, subsistence expanded to include marine resources, but diet was primarily dependent upon the increasingly diverse variety of plant foods. Tools used during this period included mortars and pestles to process plant-based foods (Wallace 1978:30). The expansion of the Spanish mission system in California in the late 1700s marks the beginning of the Historic Period.

Ethnography

The proposed project area lies within the historic territorial boundaries of the Tongva, later known as Gabrieliño Indians. The Gabrieliños were Shoshonean and Takic language speakers, who resided in the Los Angeles Basin and adjacent San Fernando Valley at the time of European contact. The fully developed Gabrieliño culture was a socially and economically

complex hunting and gathering group, very advanced in their culture, social organization, religious beliefs, and art and material object production.

Gabrieliño culture underwent dramatic changes following European contact. Introduced diseases weakened and killed large numbers of native peoples, and most Gabrieliño villages were abandoned by 1810. Gabrieliño survivors helped build the Spanish Missions and the Mexican and American ranches that followed (Bean and Smith 1978:538-549).

Spanish and Mexican Periods

Although Spain claimed Alta California (present day California) in the sixteenth century, settlement did not begin until 200 years later. To consolidate the Spanish claim to Alta California, an expedition led by Gaspar de Portolá was dispatched from Mexico City in the summer of 1769. Marching northward from San Diego, Portolá passed through the San Gabriel and San Fernando valleys in 1770. Portolá's exploratory expedition resulted in the establishment of a string of 21 Franciscan missions, *presidios*, and civilian pueblos over the course of the next half century. Mission San Gabriel Arcangel was established in 1771 and by the early nineteenth century, most Gabrieliño were incorporated into the mission. The environs of present day Los Angeles and the current project area were included in the mission's domain (Baer 1958:95).

In 1781, El Pueblo de la Reina de Los Angeles was the second pueblo founded in Alta California. Settled by a small group of *pobladores* of African, Native American, and Spanish descent, the outpost manifested Spanish colonial ambitions for Alta California, which envisioned a series of civilian pueblos that would function in support of the Missions and *presidios* and expand the region's population (Robinson 1981:9). Los Angeles remained an isolated settlement for many years, gradually gaining in population and importance as a center of commerce and social exchange. By 1800, the pueblo boasted a population of 315 (Robinson 1981:111).

As part of Spain's effort to colonize Alta California, a system of land grants was initiated to induce settlement and long term occupation of the region. The large rancho tracts were bestowed upon a select few, primarily ex-soldiers and others who had provided services to the government. The current project area lies within the boundaries of the area that was under the control of Mission San Gabriel Arcangel. Mexican independence from Spain in 1821 brought conflict over the disposition of Mission lands in Alta California. A series of laws, culminating with the Secularization Act of 1833, stripped the Missions of their land and power. With the demise of the Mission system and secularization of Mission San Gabriel in the 1830s, Los Angeles emerged as the unrivaled center of trading and economic activity in the region.

The area that is today the City of Lakewood was located historically within the boundaries of Rancho Los Nietos, (Figure 4) one of the earliest and largest

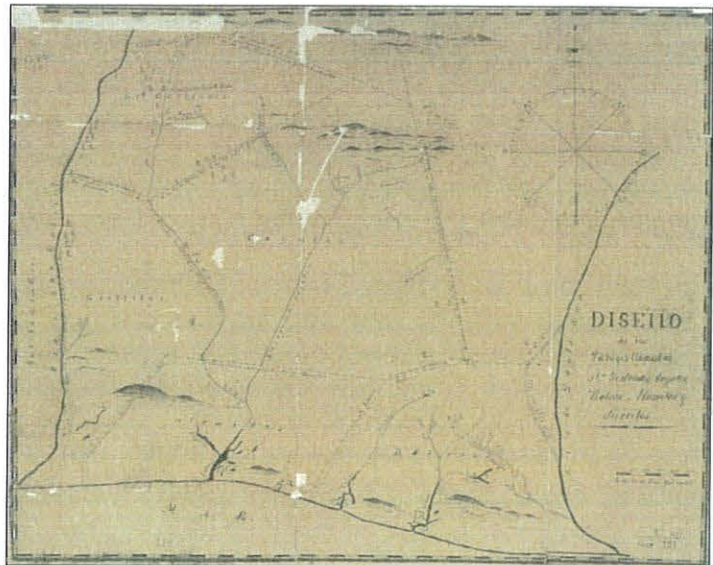


Figure 4. 1834 diseño map showing Rancho Los "Siirritos."

of the Spanish era land grants. After the death of the original grantee, Manuel Nieto, in 1804, the enormous 167,000-acre property was divided into six smaller ranchos which were disbursed to the Nieto heirs. Most of the City of Lakewood, including the current project area, is located within the historical boundaries of the 27,054-acre rancho known as Los Cerritos. Rancho Los Cerritos was conferred upon Manuel Nieto's daughter, Maria Manuela Nieto de Cota and her husband, Guillermo Cota, in 1834.

The Cotas grazed cattle on the rancho, prospering in the trade in hides and tallow, and later amassed a fortune selling cattle to feed the hordes of new American arrivals during the Gold Rush (Cleland 1941:19; Cowan 1977:14). They built at least two adobe dwellings on the property. After Maria Manuela Cota's death, her heirs sold the land in 1843 to Jonathan Temple. Temple also used the rancho principally for cattle ranching.

American Period

With the United States takeover of California in 1848, the ensuing Gold Rush, and ultimate American statehood in 1850, the pace of settlement in the region expanded rapidly, as did commerce. The character of the current project area changed little with the transition from Mexican to American rule. Cattle ranching continued to be the primary economic pursuit on the flat and dusty plains south of Los Angeles until the 1860s. Following a series of disastrous floods and droughts that decimated his cattle herds, Jonathan Temple sold Rancho Los Cerritos to Flint, Bixby and Company in 1866.

Flint, Bixby and Company was principally involved in raising sheep. Jotham Bixby was responsible for oversight of the southern branch of the company's operations, which included Rancho Los Cerritos. Bixby and his family resided on the rancho from 1866 to 1881, when as many as 30,000 sheep were pastured there. The market for wool declined in the late 1870s, prompting Bixby to sell and lease off portions of the property, and subsequent decades witnessed the steady transition of Rancho Los Cerritos from open range to agricultural lands (Rancho Los Cerritos 2003).

Subdivision and sale of rancho land took a marked upswing during the real estate boom of the late 1880s. The J. Bixby Co. promoted agricultural activities on Rancho los Cerritos, particularly the planting of sugar beets, a crop increasingly popular as an alternative to sugarcane. To expand its sugar beet operation, the Bixby Co. partnered with the Montana Ranch Co., headed by William H. and J. Ross Clark. In exchange for a beet processing plant, in 1896 Bixby turned over 1,000 acres to the Montana Ranch, later selling 8,000 more. The Montana Ranch tract extended from Signal Hill to Bellflower and included most of the present day City of Lakewood. Along with the thousands of acres planted in sugar beets, thousands more were devoted to alfalfa, and dairy and sheep herds (City of Lakewood 2017).

In 1890 the Los Angeles-Terminal Railroad Company was formed with the aim of connecting Los Angeles with the new port facilities planned for Terminal Island. Its alignment followed a path through west Lakewood between present-day Cherry Avenue and Paramount Boulevard. With the rail line came new settlements to the north and south; however, the Lakewood area remained solidly agricultural in nature. Lakewood Boulevard, first known as Cerritos Avenue, had been established by the early 1890s. USGS maps from 1896 and 1925 show only one building along the entire length of the current study area (Figure 5).

The Montana Ranch cultivated 1,500 acres of sugar beets and 2,000 acres of barley and alfalfa in 1920, with another 3,000 acres of truck farms, dairies, hog sheds, and pastures. In 1921, oil was discovered in nearby Signal Hill. By 1923 Signal Hill wells were producing 260,000 barrels of oil a day and new housing for oil field workers was pushing into nearby farming areas. Control of the Montana Ranch passed to Clark nephew, Clark J. Bonner, in 1926. Seeking to capitalize on the oil related growth and prosperity, Bonner joined with developer Charles B. Hopper to develop a scheme for an upscale suburban community on part of the ranch. As presented in 1930, "Lakewood Country Club Estates" would cover 9,000 acres with substantial homes on large lots, with a golf course and country club at its center. The golf course was completed in 1932 but the market for upscale houses proved weak the midst of a major depression.

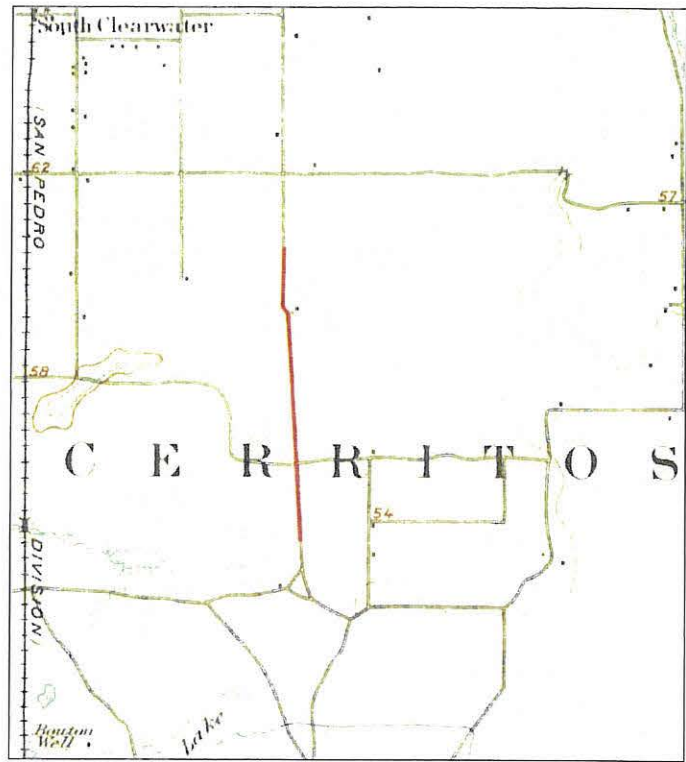


Figure 5. 1896 USGS map showing project alignment in red.

When their suburban estates scheme failed, Bonner and Hopper deftly recalibrated, drawing up new subdivision plans for "Lakewood Village," which tapped into distinctly Depression-era concerns by offering large, 120-by-150-foot, lots that were marketed as "garden home" sites (Figure 6). Bonner succeeded in having Cerritos Avenue, the primary route through the development, renamed Lakewood Boulevard in 1934. Even with the retooling, lot sales were slow; less than 30 home sites had sold by 1936 and by 1938, only a few streets had been laid out.

It wasn't until the Douglas Aircraft plant was completed nearby in early 1941, soon followed by an Army Air Corps base adjacent to Long Beach Airport, that the development saw a significant growth. That growth continued through World War II as defense workers and military personnel streamed into the area. A new tract known as "Mayfair" was opened during the war, located north of South Street. It was the first "mass-produced" residential tract in Lakewood and included dwellings within the current project area along the east side of Lakewood Boulevard. The Lakewood City tract was also developed during the war, and the 450-home "Lakewood Gardens" subdivision was opened the west side of Lakewood Boulevard, north of South Street, soon after the war's end, in 1946 (City of Lakewood 2017).

With the war over, Clark Bonner began plans for expanding home construction in Lakewood for the thousands of veterans returning to California. Those plans were cut short by Bonner's untimely death in late 1947.

In 1949, the remaining 3,450 acres of farmland comprising the Montana Ranch were acquired by three individuals: Mark S. Taper, Louis Boyar, and Ben Weingart. Together they formed the Lakewood Park Corporation with the intention of developing the property in its entirety, and as

quickly as possible. To achieve this ambitious goal, the corporation united two major Southern California construction firms: Aetna Construction, headed by Boyar, and S. Mark Taper's Biltmore Homes. Ben Weingart, a Los Angeles businessman, was responsible for securing financial backing for the project from the Prudential Insurance Company's real estate division: \$8.8 million for home construction, followed by an additional \$8 million for an enormous shopping center that would form the commercial core of the development. Louis Boyar was selected to act as president of the corporation.

In February 1950, ground was broken on what was to be the nation's largest planned community. Heralded as "the city they built in six months," a new house was completed every 7 1/2 minutes, a rate of 40 to 60 houses per day (Figure 7). Four thousand construction workers divided into 35 teams formed an assembly line that moved up one side of a street of house lots and down the other. Taking a lesson from earlier post war developments criticized for their monotony, Lakewood Park homes came in 52 slightly different combinations of plan, trim and siding. Almost 8,000 homes had been completed and sold by the start of 1951, 14,000 by the end of 1952, with another 3,500 planned for 1953.

Southern California's Fastest Growing Community of Garden Home Estates • • • 1 Year Old Today



1 YEAR AGO Lakewood Village was a dream—today it is a real village with more than 45 garden homes—a Junior College with 1200 students and 15 buildings—5-cent bus service—a \$15,000 drug store—\$10,000 administration center—\$15,000 super-service station—2 large multiple dwellings—dozens of homes under construction. With its fine units and new—the world's selling five and a third being prepared, Lakewood is definitely good in Lakewood. The luxurious Lakewood Country Club, tennis club and archery club including the Village make it an ideal recreational center with ocean, beach, bathing and fishing only 10 minutes away. The hub of a 10-mile zone of industrial and business employment, the Village offers an ideal homeplace for everyone, active or retired.

Founded on the Charles B. Hopper principle of 3 big city lots in 1 for the price of 1 your Lakewood Village garden home can be built on a 130 ft. frontage lot for a monthly payment of from \$50 to \$100 after a moderate down payment. The lowest cost building plans in the U.S. are made to Village types—9% SIMPLE INTEREST with no fees, bonuses, extras or delays!

If this sounds like the place in which you want to live drive out this week end and inspect the Garden Estate sites and new homes.

HOW TO GO—Take Atlantic or Long Beach Blvd. South to Carson St., then East to Lakewood Village at Cerritos Avenue.

CHARLES B. HOPPER
General Sales Agent
Administration Building • • • • • Carson & Cerritos Avenues
Telephone: Long Beach 444-63

Figure 6. 1934 ad for Lakewood Village.

Called a "\$250 Million Planned Community" in news accounts, Lakewood Park was more than rows of houses. Sites for schools, parks, and places of worship were incorporated, along with 16 neighborhood commercial nodes, all carefully situated within a half-mile of homes in each tract for maximum convenience.

The plan also included parkway strips and frontage roads separating residential areas from major thoroughfares, and street lighting on all streets, even though it was not required, to make the community safer for children. Both the Los Angeles County Regional Planning Commission and Engineering Services Company (ESCO) played a significant role in the design of Lakewood. The Planning Commission had developed a street plan for the Lakewood area in the 1930s, which the developers largely followed.

At the heart of the new development was Lakewood Center, among the earliest regional shopping centers in the nation and, with about 100 stores, it was the country's largest in 1954. Designed by the Los Angeles architectural firm of Albert C. Martin and Associates, Lakewood Center was modeled after Seattle's Northgate shopping mall, which had opened in 1950. Like Northgate, Lakewood Center's stores were arranged in two rows facing each other across an open-air esplanade. The Center's buildings were set well back from the street, separated by large parking lots with more than 10,000 parking spaces. However, because the parking was depressed below the street level, drivers passing on Lakewood Boulevard saw the mall's inviting architecture rather than a sea of cars. What set Lakewood Center apart from other early shopping centers was the fact that it was fully integrated into the development of Lakewood. It was conceived as the business core of the 17,500 household development.

Further, the shopping center's location put it within easy driving range of about 25 percent of Los Angeles County's population (Longstreth 1998:336-337).

Lakewood Center's manager scored a major success when he persuaded the May Company to gamble on locating a department store in Lakewood Center. Many stores followed May Company's lead in 1950 and 1951, establishing their first suburban branches in

Lakewood Center. The May Company position as "anchor store" was guaranteed for 20 years.

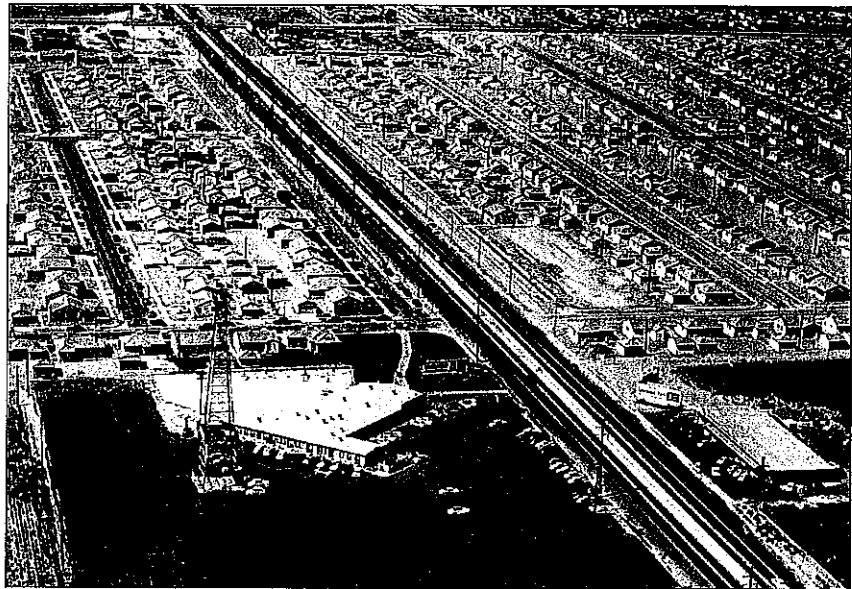


Figure 7. Development along Lakewood Blvd. at Candlewood St., looking northeast, 1950. (Source: City of Lakewood)

In addition to commercial tenants, Lakewood Center soon included office buildings, a 250-bed hospital, a county library, a post office, banks, a bowling alley, county offices, and Lakewood's first city hall. It also included a bowling center, a garden center, restaurants, and supermarkets.

As the unincorporated Lakewood grew to a community of more than 70,000 residents, so grew its municipal needs. By 1953, Lakewood was facing three options: be annexed to nearby Long Beach, remain unincorporated and continue to receive services from Los Angeles County, or incorporate as a city, and under an unprecedented scheme, continue receiving all services from the county under contract. Residents chose the third option in 1954, voting to incorporate as a city. Lakewood was the first city in the nation to contract for all of its municipal services when it incorporated, making it the nation's first "contract city." Subsequently, numerous other cities across the country adopted the "Lakewood Plan." Lakewood continues to receive many of its municipal services from Los Angeles County along with other public agencies and private industry.

The portion of the current project area south of Candlewood Street and directly west of Lakewood Center was the latest to be developed as part of the Lakewood Mutual Tract, beginning in 1951. As a commercial enclave, it has also been the quickest to change. The majority of the buildings presently within this section date to the 1970s and later. Lakewood Center expanded steadily through the 1960s and 1970s. In 1975, the complex was acquired by the Macerich Company which implemented a renovation plan that enclosed the center. Since that time, numerous rounds of expansion, renovation and reconfiguration have dramatically changed the character of Lakewood Center.

The boundaries of the residential neighborhoods along Lakewood Boulevard north of Lakewood Center Mall have remained largely static since they were established in the 1940s and 1950s. Changes to individual dwellings have been commonplace as residents have expanded and

personalized their homes over the decades. However, zoning codes and limits on development have meant the general scale and character of the neighborhoods have been maintained.

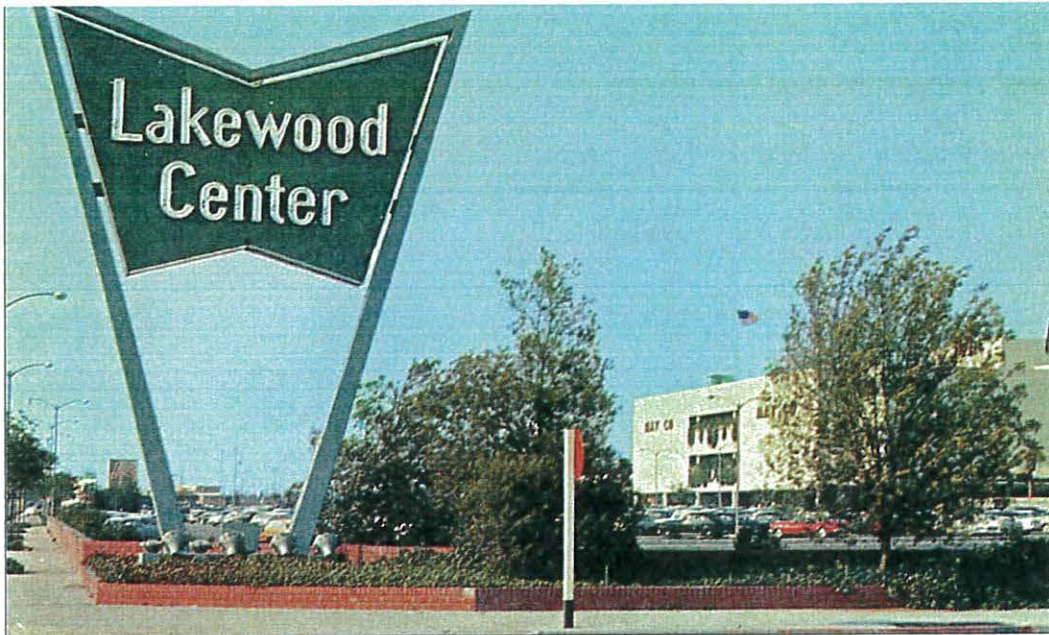


Figure 8. Postcard view of Lakewood Center from southwest corner at Lakewood Boulevard, late 1950s.

4.0 Findings

4.1 Records Search

The records search revealed that 17 previous cultural resource investigations have been conducted within a 0.5-mile radius of the Lakewood Boulevard Capacity Enhancement Project area. Of those investigations, three (LA-7162, LA-10192, LA-11429) considered portions of the current project area. None of the previous studies has identified historical or archaeological resources within, or in the vicinity of, the project area.

A search of the California Historic Resources Inventory for Los Angeles County revealed that historical resource evaluations have previously been conducted for two resources in the vicinity of the project area. Neither of those resources was found to be historically significant. The record search results are summarized below.

Recorded Cultural Resources

Within proposed project area:

- None

State Landmarks and National Register Resources within 0.5-mile search area:

- None

Locally designated historic resources within 0.5-mile search area:

- None

Surveys/Reports Within Search Area*

LA-2887	LA-4630	LA-5881	LA-6050	LA-6056
LA-6057	LA-6058	LA-7162	LA-7886	LA-8431
LA-8461	LA-10192	LA-10313	LA-10800	LA-11429
LA-12303	LA-12456			

(*State Information Center Reference Nos.)

4.2 Historic Resources Field Investigations

Historic Resources

A reconnaissance survey of the project area was conducted to identify any potential historical resources, gain an understanding of the character and relative age of the existing built environment, and to identify any themes of historical development that may be active. Building types and architectural styles observed along the project route were recorded, as were concentrations of various types of development.

Property types observed along the 1.45-mile length of the project area include a mixture of commercial, office, and residential construction. The dominant use was noted to be single family residential. Commercial and office properties are also represented, with commercial enterprises typically concentrated at or near major intersections. In particular, Lakewood Center is situated at the northeast corner of Del Amo Boulevard, and additional commercial and office uses are concentrated on the opposite (west) side of Lakewood Boulevard.

Residential development along the project route is distributed along the northern two-thirds of the alignment, between Camerino Street and Ashworth Street. The residences observed were almost entirely low-rise single-family dwellings and no apartment or condominium buildings were noted.

With few exceptions, the residences recorded along Lakewood Boulevard date to the World War II and immediate post World War II time period, and no dwellings were observed that appeared to date to the community's early agrarian period. A spot check of real estate records identified no residences along the project corridor that predate 1944, and only a handful that were constructed after 1950. Architectural styles represented by Lakewood Boulevard-adjacent residences include Minimal Traditional, American Colonial Revival, Mediterranean Revival, Cape Cod, and Ranch style, with Minimal Traditional being the most common residential style observed. This style typically dates to the late 1930s through the 1950s. The dwellings are generally modest: small to medium sized, 1,000-3,000 sq ft, and one story in height. The neighborhood may be characterized as middle class, and the dwellings typically do not display high style finishes or trim. The majority of the houses were observed to have been substantially altered from their original appearance, most commonly through the replacement of original wall

and roof finishes, replacement of windows and doors, and through additions and other modifications to their original form.

Fronting on Lakewood Boulevard beginning immediately north of the commercial node at the intersection of South Street and continuing to Ashworth Street near the northern terminus of the project area, there is a continuous wall, typically of concrete block construction. This wall provides privacy and sound protection to the rear yards of the residences along this section of the Boulevard which face the parallel side street. The wall is separated from the curb by a turf parkway approximately 12 feet wide that is typically without street trees or other landscaping. On the west side of this section of Lakewood Boulevard, residences face the Boulevard and are buffered from the busy thoroughfare by planted parkways and the frontage streets.

The dwellings present along Lakewood Boulevard correspond with the subdivision of former Montana Ranch lands during World War II for the construction of defense worker housing, and with the development of the City of Lakewood immediately following the end of the war. During the World War II, demand for housing grew among those employed at the nearby Long Beach Airport and the associated Army Air Corps base, among military and civilian personnel working in the port facilities at San Pedro and Long Beach, among the thousands employed in the defense plants that had sprung up in the less densely developed areas to the south of Los Angeles, and in the oilfields and refineries in nearby Signal Hill and Long Beach. The end of the war brought a new influx of residents as military personnel returned home and new arrivals sought work in the Cold War era defense plants and other industries. The developers of the expansive planned community of Lakewood quickly capitalized on this pent up demand, supplying over 17,500 new homes in the span of a few years.

As the primary north-south approach route to Lakewood Center -- the heart of the planned community -- and also a principal feeder of many residential streets, Lakewood Boulevard was conceived and built as a monumental roadway, the community's widest, with a broad center median flanked by a green fringe and parallel frontage streets to buffer the residential areas and streamline traffic. The present configuration of the Boulevard within the project area appears little changed from the scheme developed in the 1940s. Areas that appear altered are principally adjacent to the major cross streets. The parkways and center medians are presently landscaped with mature trees including California Sycamore, eucalyptus, and Liquid Amber species, and other foliage. Many trees, particularly within the center medians, are large and appear relatively old.

The past 30 to 40 years have seen the displacement of many of the earlier businesses that existed along Lakewood Boulevard in the area immediately north of Del Amo Boulevard, opposite Lakewood Center -- replaced by larger and more modern facilities. So too, Lakewood Center Mall itself has seen numerous renovations and additions over the course of time, to the extent that it now little resembles the trend-setting mid-century suburban icon it originally was.

While the original buildings of Lakewood Center have changed radically over the year, less changed is the designed landscape of the mall's parking lots and border areas along Lakewood Boulevard, and the landscape design of the boulevard itself. The depressed parking lots bordered by brick retaining walls and planters containing shrubs and trees appear to have changed little. The majestic California Sycamore and eucalyptus trees within the Lakewood Boulevard center median are quite large, with trunk diameters of two feet or more, and may well be associated with the early streetscape design believed to date to the 1950s.

5.0 Conclusions

5.1 Historical Resources

Background research conducted for this cultural resource investigation has indicated that there are no documented historical resources located within, or in proximity to, the project area for the proposed Lakewood Boulevard Capacity Enhancement Project. A reconnaissance survey conducted for the project identified property types located along the project corridor as predominantly single-family residential. The dwellings recorded may be generally characterized as standard construction dating to the World War II and immediate post war period (1940-1950). Most dwellings were observed to have been expanded from their original forms or otherwise significantly altered, and the level of historical integrity within the neighborhood is typically low to moderate. Commercial and office uses were also identified along this section of Lakewood Boulevard, mostly dating to the past 30-40 years and typically of standard construction. The exception is the Lakewood Center Mall, which opened in 1952 and was widely hailed at the time for its innovative design, being among the first few suburban shopping malls in the country, and also the largest. Most of the Lakewood Center's early constituents have since been significantly altered or removed altogether, and the mall has lost integrity of design.

The same cannot be said for the Center's hardscape and landscape elements that adjoin Lakewood Boulevard, which appear substantially unchanged from their historic configuration and appearance. Lakewood Boulevard itself was first paved sometime before 1926 and was incorporated as a central component of the design of Lakewood Village, being the community's principal thoroughfare, and the primary access route to the centerpiece of the planned community: Lakewood Center. As such, it received features such as limited cross streets through use of green medians that flanked the main travel lanes and separated them from feeder streets. The boulevard was further enhanced by a landscaped central parkway that was planted with tall, canopy-forming trees. These elements appear to retain substantial integrity of design.

Preliminary historical research and the field survey conducted for built resources located along the project corridor failed to identify any individual buildings or building groups that are viewed candidates for assessment as potential historical resources. However, the Lakewood Boulevard corridor itself, including the median and parkway elements present along its length, are view as potentially historic urban design elements and merit additional research to establish their level of integrity and historical significance. The proposed scope of work for the Lakewood Boulevard Capacity Enhancement Project is generally limited to work within the existing right-of-way. The work proposed, including traffic lane widening, intersection enhancements, sidewalk replacement, and utility undergrounding, are improvements that typically do not result in material impairment to the character of adjacent historic buildings. The small amount of project related right-of-way acquisition proposed consists of narrow strips that are mostly adjacent to modern commercial properties, and no direct or indirect impact to residences or business is anticipated. However, the project may have the potential to impact historic urban design elements including landscape and hardscape features.

5.1 Archaeological Resources

The search of archaeological records conducted for the project indicated that there are no recorded archaeological sites located within, or in proximity to, the Lakewood Boulevard project area. Review of historical maps and other archival materials indicates that the likelihood of encountering buried historic or prehistoric archaeological deposits within the project footprint is low to moderate.

Although the project area is largely covered by pavement and historic landscape and hardscape features, there remains some potential for deeply buried archeological deposits lying beneath the levels disturbed by street and sidewalk construction, and installation of landscaping. The measures presented below should be undertaken to avoid unintended impacts to cultural resources.

6.0 Recommendations

6.1 Historical Resources

It is the conclusion of this cultural resources investigation that there are historical properties requiring additional research and evaluation present within the project area. Specifically, the exiting configuration of Lakewood Boulevard, including its parkways, medians, and feeder streets are original to the historic design of this planned community, which received national attention when it was established in the late 1940s and early 1950s. Lakewood was noteworthy for its scale, the speed with which it was developed, its innovative urban design, and for having as its commercial and civic core the newly emerging urban/suburban form, the regional shopping center.

It is recommended that the City of Lakewood Department of Public Works contract with an architectural historian, qualified under the Secretary of the Interior's Professional Qualifications Standards in the area of Architectural History, to research and evaluate the integrity and historical significance of the portion of Lakewood Boulevard included within the project area for the proposed Lakewood Boulevard Capacity Enhancement Project. The evaluation should consider all landscape and hardscape elements of the street parkways and medians, as well as features and configuration of the roadway itself and the adjacent frontage streets paralleling Lakewood Boulevard. The historical resources evaluation report should be submitted to the Lakewood Department of Public Works for review and certification. Should it be determined that urban design features of historical significance are present, an approach to treatment of project related impacts to those features should be adopted and implemented prior to the commencement of any demolition or earth moving activities associated with the project.

6.2 Archaeological Resources

Greenwood and Associates further concludes that there is a low to moderate potential to encounter buried archaeological resources during project-related ground disturbing activities and, therefore, limited archaeological monitoring of construction is warranted. Potential impacts to archaeological resources may be mitigated through implementation of the measure presented below.

Under CEQA guidelines, cultural resources should be avoided whenever possible. If buried archaeological remains are identified during the course of project-related ground disturbing activities, work in the immediate vicinity of the find must be halted until a qualified archaeologist has the opportunity to evaluate the nature and significance of the find. In the event that ground-disturbing components of the project change, a qualified cultural resources specialist should be consulted to determine whether archaeological monitoring of construction activities is then warranted.

Mitigation Measure CUL-1

- a) *The City shall coordinate with Southern California Edison to conduct an archaeological monitoring program during any excavations deeper than three feet required for undergrounding of overhead utilities,*
- b) *The archaeological monitoring program shall be conducted in a manner consistent with archaeological standards and, in this case, conducted on a full-time or part-time basis, at the discretion of the Lead Agency;*
- c) *Should evidence of archaeological resources be uncovered, the archaeological monitoring program shall continue on a full-time basis until it is determined no more alluvium with potential to bear archaeological material is being impacted;*
- d) *If evidence of Native American resources is identified, a Native American Monitor of Gabrieliño descent shall be added to the remainder of the monitoring program. The Native American Monitor shall direct the City in appropriate documentation, curation and disposition of non-human tribal resources;*
- e) *If, at any time, evidence of human remains is uncovered, the County Coroner must be notified immediately and permitted to examine the find in situ. If the remains are determined to be of Native American descent, the Native American Heritage Commission shall be contacted and the Most Likely Descendent (MLD) named. In consultation with the MLD, City, Coroner, and archaeological consultant, the disposition of the remains will be determined.*

Discovery of Cultural Resources

The unanticipated exposing of archaeological resources has the potential to destroy or cause substantial damage to significant cultural resources. Should buried cultural resources be encountered during project-related construction activities, all ground-disturbing activity should be immediately suspended within a 100-foot radius of the find until a qualified professional archaeologist, retained by the City, is contacted to evaluate the significance of the find (per CEQA regulations). Examples of Native American cultural materials might include shell or bone; ground stone tools such as mortars, bowls, pestles, or manos; flaked stone tools such as projectile points or scrapers; stone flakes associated with tool manufacture. Historic materials may include trash deposits or scatters containing bottle glass, ceramics, metal items, or structural remains. If the archaeological resources are found to be potentially significant, impacts to the resources will be mitigated in a manner consistent with California Office of Historic Preservation (OHP) guidelines. Appropriate mitigation may include avoidance of the

resources, testing, and/or data recovery. Ground disturbance in the area of suspended activity shall not recommence until authorized by the archaeologist.

Discovery of Human Remains

If human remains are encountered, all ground-disturbing activities shall immediately be suspended within a 100-foot radius of the find, or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional remains. The Los Angeles County Coroner must be contacted. If the remains are of Native American origin, the most likely descendants of the deceased must be identified by the Native American Heritage Commission (NAHC). The City of Lakewood will consult with the Native American most likely descendant(s) to identify a mutually acceptable strategy for treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the NAHC is unable to identify a most likely descendant; if the descendant fails to make a recommendation within 24 hours of being notified by the NAHC or the City; or if the descendant is not capable of reaching a mutually acceptable strategy through mediation by the NAHC, the Native American human remains and associated grave goods will be reburied with appropriate dignity on the proposed project site in a location not subject to further subsurface disturbance.

7.0 References

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2013a *Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate LA02162A (SM162 Lakewood Artesia), 8835 Artesia Boulevard, Bellflower, Los Angeles County, California*. LA-12303. Michael Brandman Associates, Irvine, California.

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2009 *Cultural Resource Record Search and Site Visit Results for T-Mobile USA Candidate LA33774B (Crown America Hand Wash), 5450 South Street, Lakewood, Los Angeles County, California*. LA-10313. Michael Brandman Associates, Irvine, California.

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2002b *Cultural Resource Assessment: AT&T Wireless Services Facility No. 05100B, Los Angeles County, California.* LA-6050. LSA Associates, Inc., Irvine, California.

2002c *Cultural Resource Assessment: AT&T Wireless Services Facility No. 05284, Los Angeles County, California.* LA-6056. LSA Associates, Inc., Irvine, California.

2002d *Cultural Resource Assessment: AT&T Wireless Services Facility No. 05281A, Los Angeles County, California.* LA-6057. LSA Associates, Inc., Irvine, California.

2002e *Cultural Resource Assessment: AT&T Wireless Services Facility No. 05288A, Los Angeles County, California.* LA-6058. LSA Associates, Inc., Irvine, California.

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2006 *Record Search and Field Reconnaissance for the Proposed Royal Street Communications Wireless Telecommunications Site LA0577B (SCE Rose Tower), Lakewood Boulevard at Rose Street, Lakewood, California. LA-7886. C.A.R.E., West Hills, California.*

2011 *Record Search and Field Reconnaissance for the Proposed AT&T Wireless Telecommunications Site LA0124 (Victors), 4333 East South Street, Lakewood, California. LA-10800. C.A.R.E., West Hills, California.*

Maps Consulted

United States Geological Survey

- 1896 Downey, California. 15 Minute Series Topographic Quadrangle
- 1902 Downey, California. 15 Minute Series Topographic Quadrangle
- 1925 Clearwater, California. 6 Minute Series Topographic Quadrangle
- 1943 Downey, California. 15 Minute Series Topographic Quadrangle
- 1949 Long Beach, California. 7.5 Minute Series Topographic Quadrangle
- 1964 Long Beach, California. 7.5 Minute Series Topographic Quadrangle
- 1972 Long Beach, California. 7.5 Minute Series Topographic Quadrangle
- 1981 Long Beach, California. 7.5 Minute Series Topographic Quadrangle

Appendix A

Existing Conditions Photographs



South end of Project Area, Lakewood Boulevard at Del Amo Boulevard, looking north.



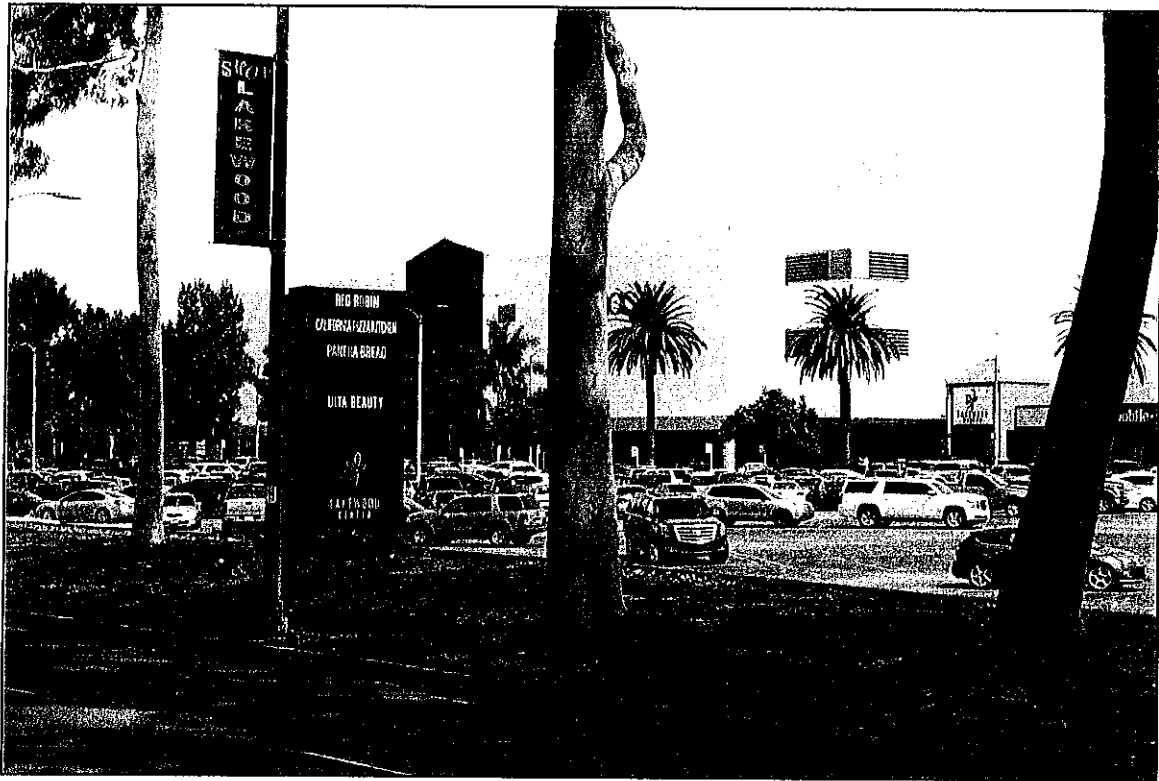
View northeast from near Del Amo Boulevard, showing Lakewood Boulevard center median and City entrance sign.



View south toward Del Amo Boulevard intersection, showing center median landscaping adjacent to turn lane.



Lakewood Boulevard center median between Del Amo Boulevard and Hardwick Street.



Parkway detail along east side of Lakewood Boulevard at Lakewood Center Mall.



Lakewood Center Mall entrance at Hardwick Street, looking east.



West edge of Lakewood Boulevard between Hardwick and Candlewood Streets, looking north.



Typical commercial development along west side of Lakewood Boulevard, between Hardwick and Candlewood Streets, looking northwest.



Intersection of Lakewood Boulevard and Candlewood Street, looking north.



Typical parkway and frontage street configuration. Looking north from Camerino Street at Lakewood Boulevard.



Representative dwellings along west side of Lakewood Boulevard.



Typical Cap Cod style home along west side of Lakewood Boulevard.



Typical frontage street and parkway landscaping, west side of Lakewood Boulevard between Hedda Street and Ashworth Street, looking north.



North end of Project Area, looking north from Ashworth Street.



North end of Project Area and Ashworth Street intersection, looking south.



North portion of Project Area, view toward east side of Lakewood Boulevard showing typical privacy walls.



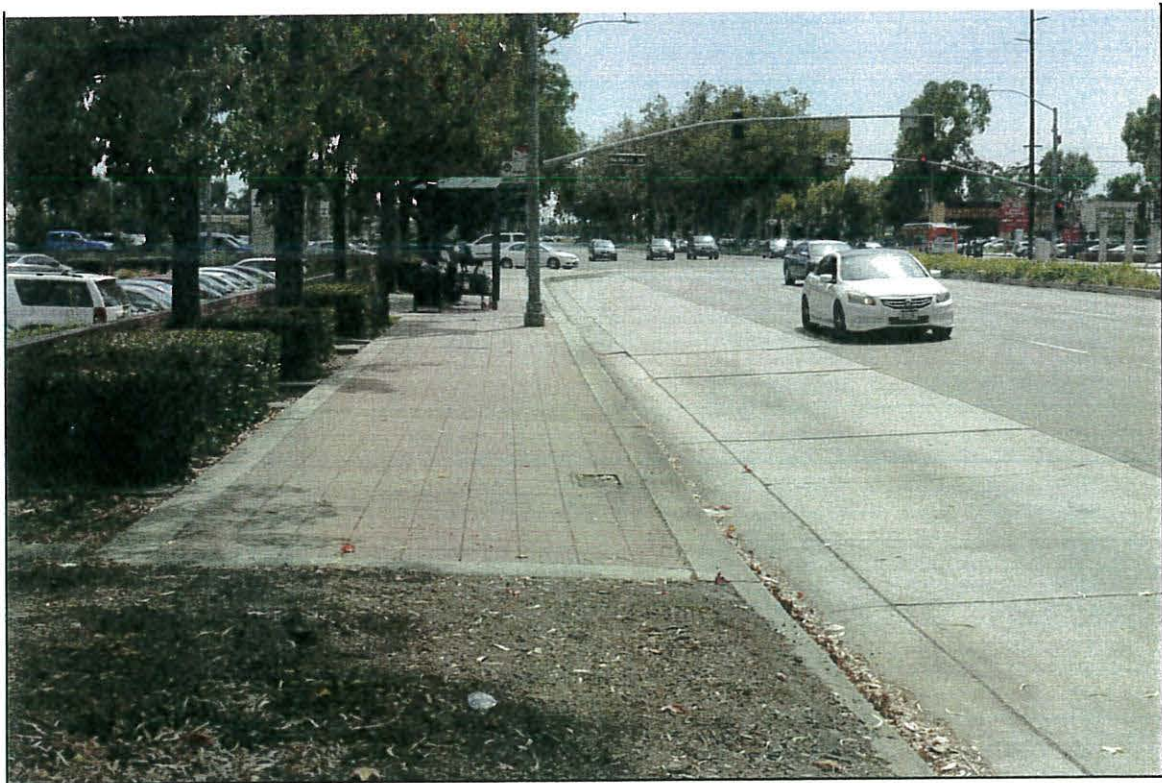
Detail view of typical privacy walls and parkway along east side of Lakewood Boulevard, between Ashworh and Hedda Streets.



Frontage street and parkway, east side of Lakewood Boulevard, between Michelson and Camerino Streets, looking south.



Representative homes, east side of Lakewood Boulevard between Michelson and Camerino Streets.



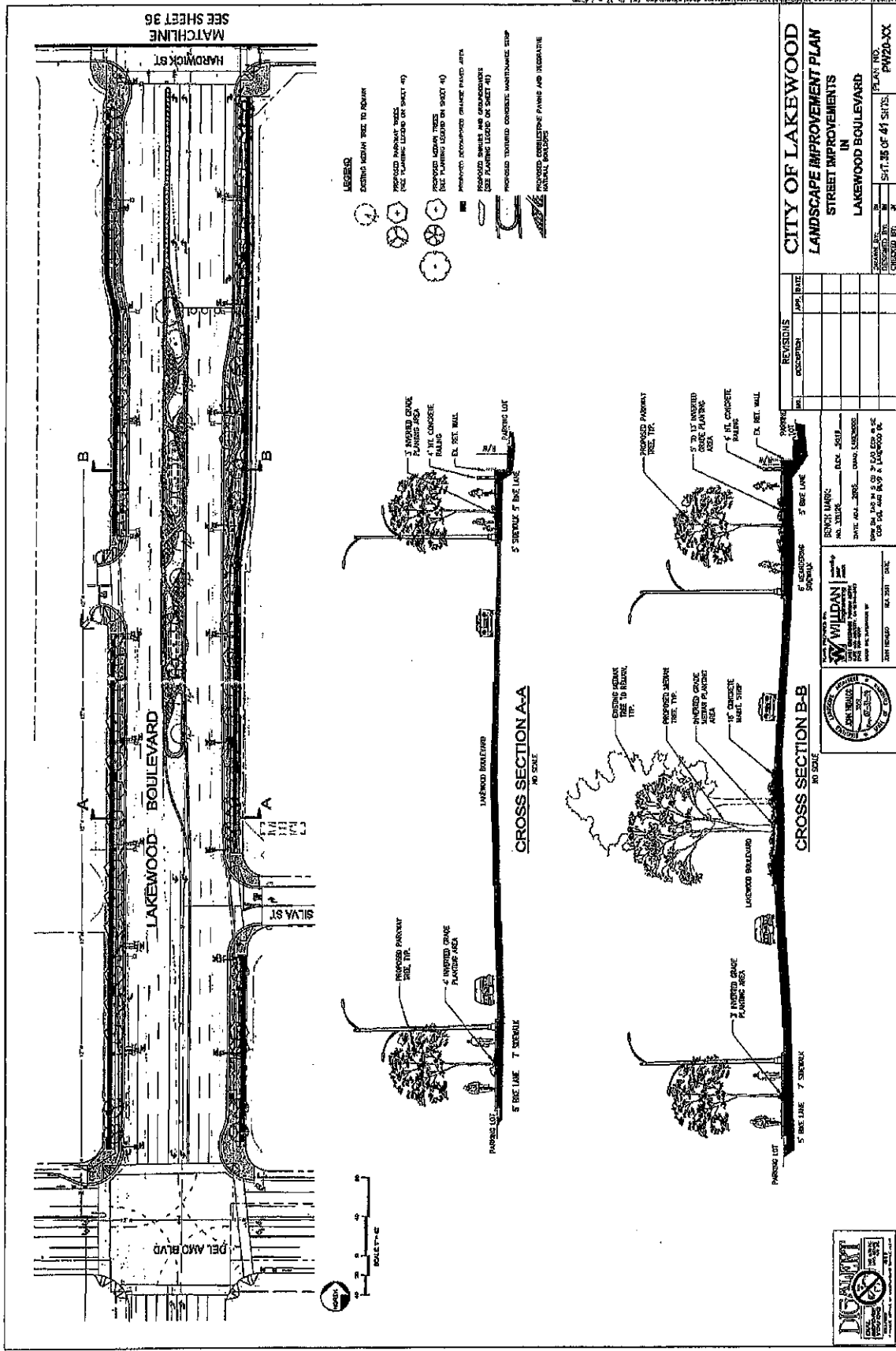
Detail of landscaping and Lakewood Center Mall perimeter wall, east side of Lakewood Boulevard, north of Hardwick Street, looking south.

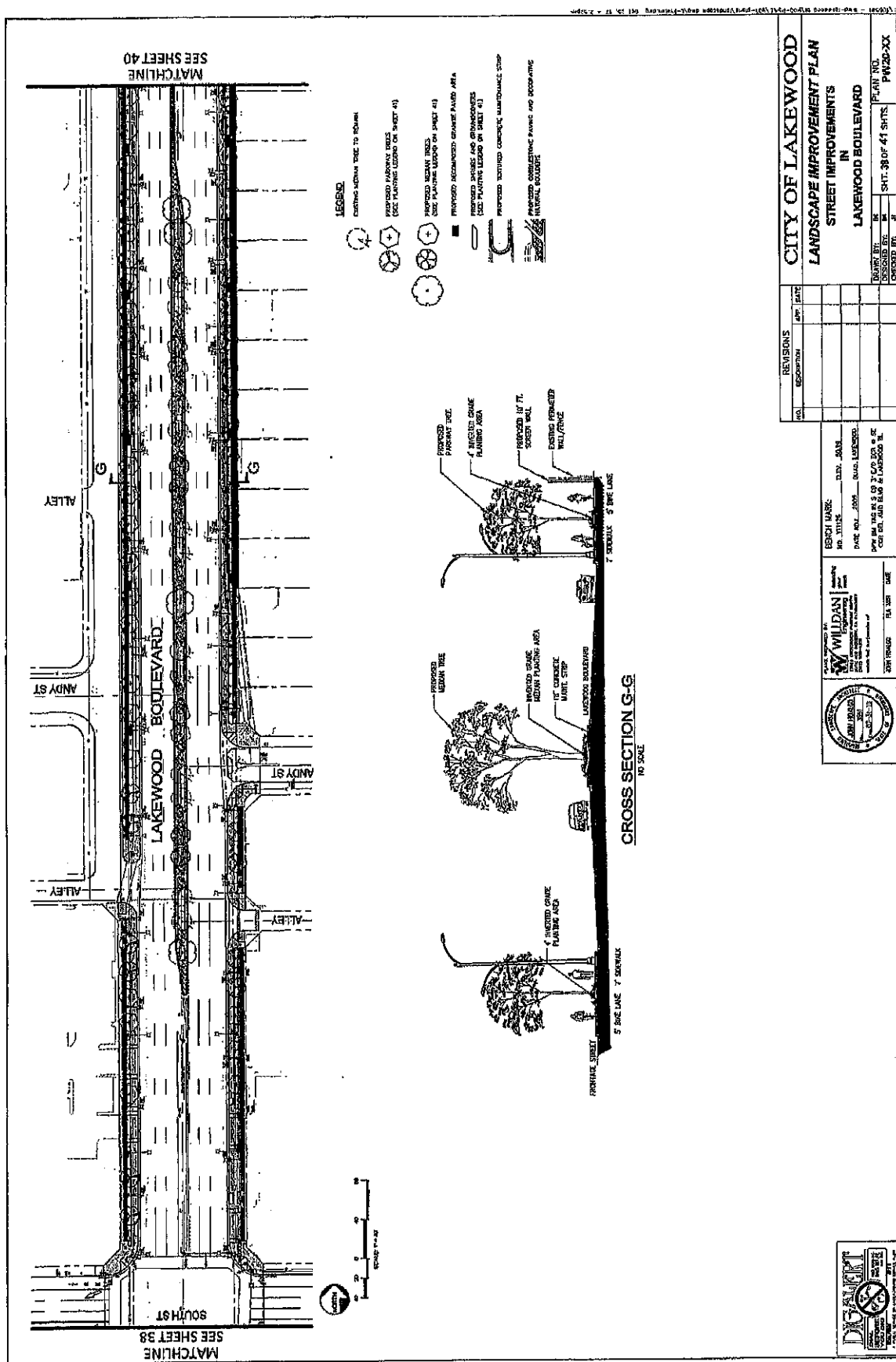
Appendix B

Project Plans

Landscape Improvement Plan

Figure 8



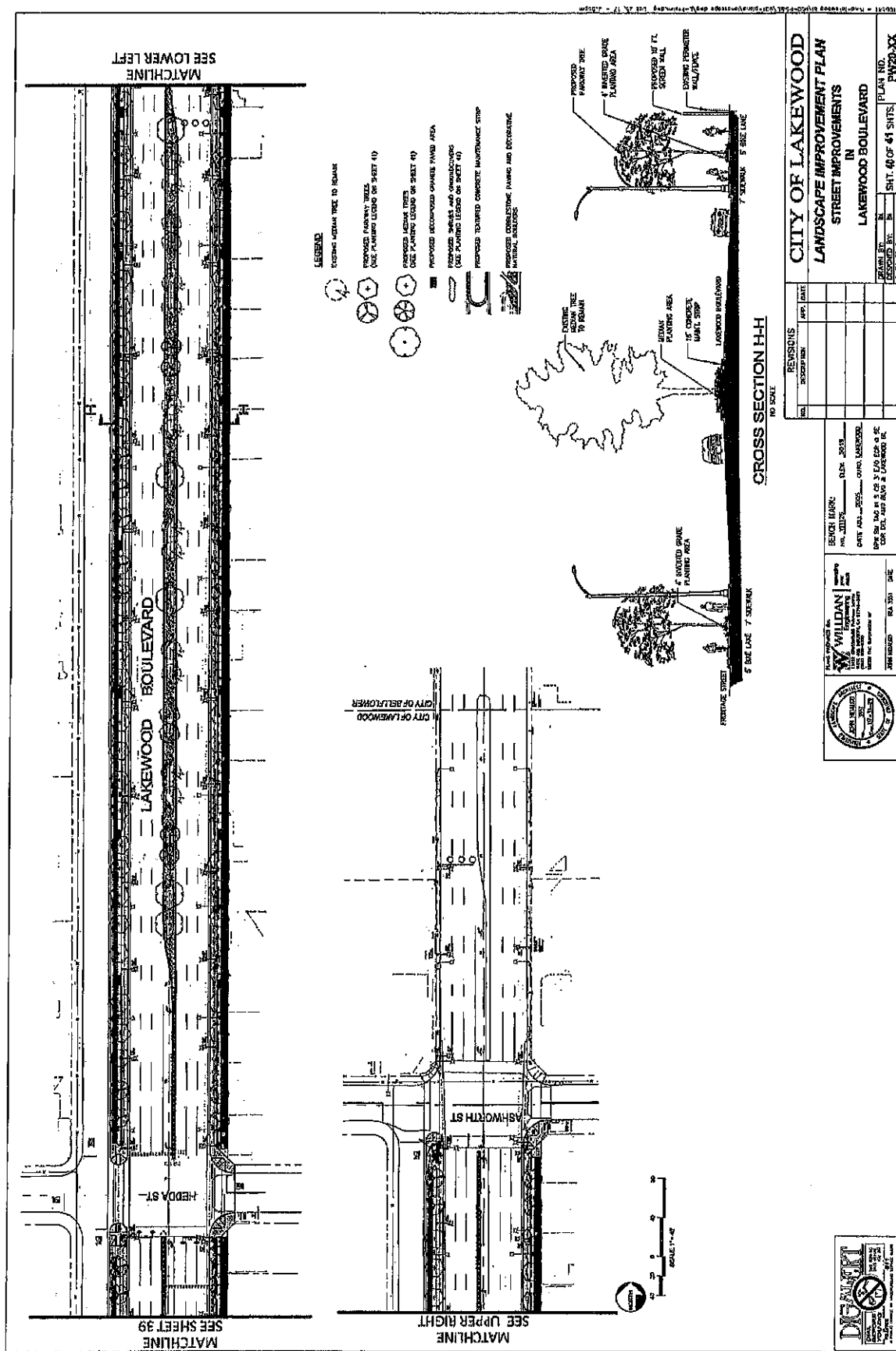


Landscape Improvement Plan

Figure 12

Mayfair

Source: Tetra Tech, 2017



Landscape Improvement Plan

Figure 13

Source: TetraTech, 2017

Appendix C

Native American Consultation

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Lakewood Boulevard Complete Streets/Green Streets Improvement Project
County: Los Angeles

USGS Quadrangle

Name: Long Beach, California

Township: 3 + 4 S Range: 12 W Section(s): unsectioned

Company/Firm/Agency:

Greenwood and Associates on behalf of the City of Lakewood

Contact Person: Dana N. Slawson

Street Address: 725 Jacon Way

City: Pacific Palisades, CA Zip: 90272

Phone: (310) 454-3091 Extension: _____

Fax: (310) 454-3091

Email: dslawson@greenwood-associates.com

Project Description:

The project encompasses a 1.50 mi. section of Lakewood Blvd. between the Lakewood north City Limits and Del Amo Blvd. Work will be principally within the existing right-of-way and minimal property acquisition is required. The project includes street widening and median improvements including construction of a new new bike path and new sidewalks where none currently exist. Curbing, gutters, driveway approaches, and curb ramps will be replaced and new catch basins installed. Landscaping within the medians and parkways will be improved, including installation of drip irrigation lines. Existing overhead utility and power transmission lines will be buried within the street, and the street will be repaved and restriped. New signage will be installed, as will new traffic signal devices.

☒ Project Location Map is attached

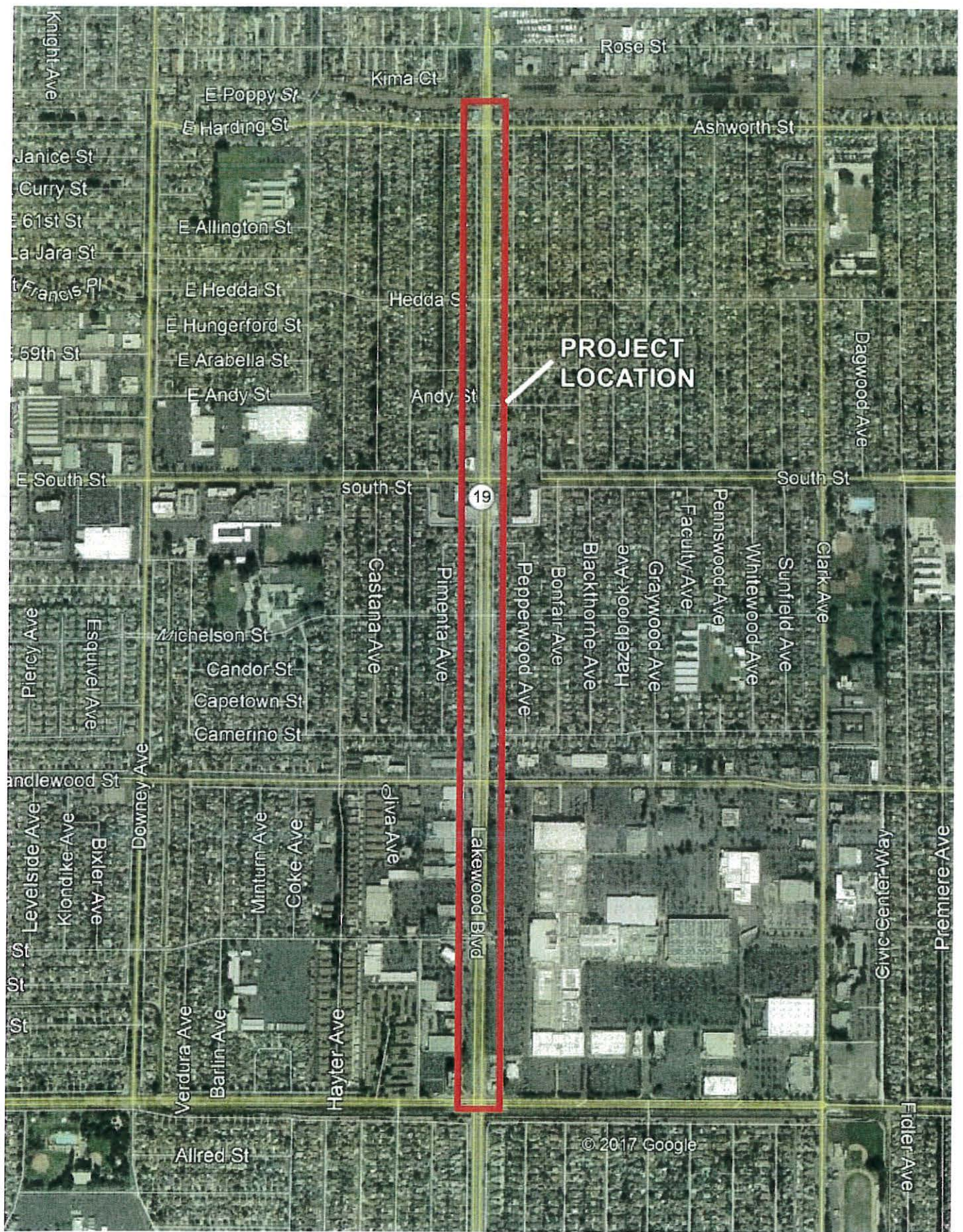


Figure 2. Project Location Map

NATIVE AMERICAN HERITAGE COMMISSION

Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710



September 25, 2017

Dana N. Slawson
Greenwood and Associates

Sent by E-mail: dslawson@greenwood-associates.com

RE: Proposed Lakewood Boulevard Complete Streets/ Green Streets Improvement Project,
City of Lakewood; Long Beach Quadrangle, Los Angeles County, California

Dear Ms. Slawson:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
Los Angeles County
9/25/2017

***Gabrieleno Band of Mission
Indians - Kizh Nation***

Andrew Salas, Chairperson
P.O. Box 393
Covina, CA, 91723
Phone: (626) 926 - 4131
gabrielenoindians@yahoo.com

Gabrieleno

***Gabrieleno/Tongva San Gabriel
Band of Mission Indians***

Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrieleno

Gabrielino /Tongva Nation

Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St.,
#231
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino

***Gabrielino Tongva Indians of
California Tribal Council***

Robert Dorame, Chairperson
P.O. Box 490
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

Gabrielino

Gabrielino-Tongva Tribe

Charles Alvarez,
23454 Vanowen Street
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Gabrielino

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Lakewood Boulevard Complete Streets/ Green Streets Improvement Project, Los Angeles County.

Native American Consultation

Sample Letter

GREENWOOD AND ASSOCIATES
725 Jacon Way
Pacific Palisades, CA 90272

January 31, 2018

Mr. Andrew Salas, Chairperson
Gabrielino Band of Mission
Indians - Kizh Nation
P.O. Box 393
Covina, CA, 91723

RE: Lakewood Boulevard Complete Streets/Green Streets Improvements Project, City
of Lakewood, California

Dear Mr. Salas:

The City of Lakewood (City) wishes to consult with you on the proposed Lakewood Boulevard Complete Streets/Green Streets Improvements Project (proposed project), located in the central section of the city (Figures 1 and 2). The purpose of consultation is to ensure the protection of Native American cultural resources in the area of the proposed undertaking.

The proposed project area extends from the North City Limit near Ashworth Street to Del Amo Boulevard on the south, a distance of approximately 1.50 miles. It encompasses Lakewood Boulevard travel lanes, parking lanes, median strips, and sidewalks.

As proposed, the Lakewood Boulevard Complete Streets/Green Streets Improvements Project will include roadway widening and median improvements on Lakewood Boulevard to accommodate a bike path in the collector street parkway. New sidewalks will be constructed along sections of the street where they do not currently exist, new catch basins will be installed, and concrete curbing, gutters, driveway approaches, and curb ramps will be replaced. A second left turn lane will be added at Hardwick Street, and Lakewood Boulevard will be resurfaced and restriped. The project will also include improvements to parkway landscaping and installation of drip irrigation lines, as well as installation of new signage, and new traffic signal devices at four intersections. In keeping with the "Green Streets" approach, overhead utility and power transmission lines will be undergrounded. Utilities will generally be placed within the road bed; however, in some sections the utility lines may be placed beneath sidewalks paralleling Lakewood Boulevard. Work will generally be restricted to the existing right-of-way and only a limited amount of right-of-way acquisition will be required.

As part of the process of identifying cultural resources issues for this project, the Native American Heritage Commission (NAHC) was contacted and a response letter was received from NAHC on October 10, 2017. That letter indicated that a search of the Sacred Lands File had been conducted for the project by NAHC with negative results. The NAHC letter also included a list of Native American individuals and/or tribal organizations, such as you, that may have knowledge of cultural resources in or near the project area.

The files of the California Historical Resources Information System at the South Central Coastal Information Center have also been checked, and they record no known prehistoric or historic archaeological sites within a half-mile of the project area boundaries. The probability of encountering unrecorded cultural resources within the project area is considered low.

We are seeking information regarding the potential presence of cultural resources in the project area. If you or your group are aware of heritage remains or have concerns regarding potential effects to cultural resources, please contact us. Due to the tight project schedule, we respectfully request that you respond within the next two weeks, if possible. We understand that you may need additional time, and we welcome your comments at any time during the project. Any information that you share with us will be used only for planning purposes. Consultation will be confidential regarding location of Native American cultural properties, burial sites, sacred shrines, and other resources.

If you have any questions or need additional information regarding this project, please contact Mr. Dana Slawson by email at dslawson@greenwood-associates.com, or by phone at (310) 454-3091.

Sincerely,

Dana N. Slawson, M.A.

Enclosures: Figure 1, Project Vicinity Map
Figure 2, Project Location Map

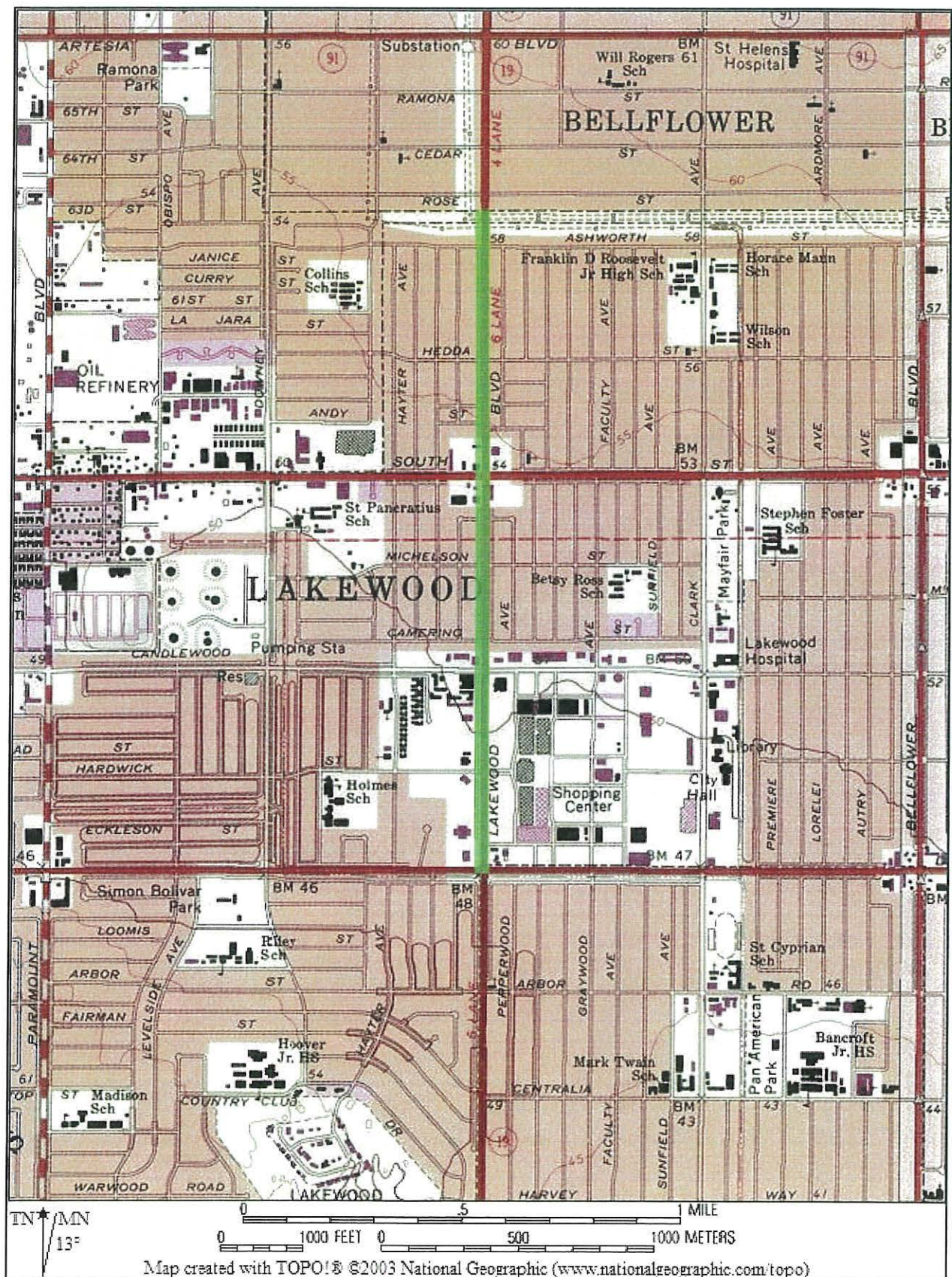


Figure 1. Project Vicinity Map (USGS Long Beach, California 1981)

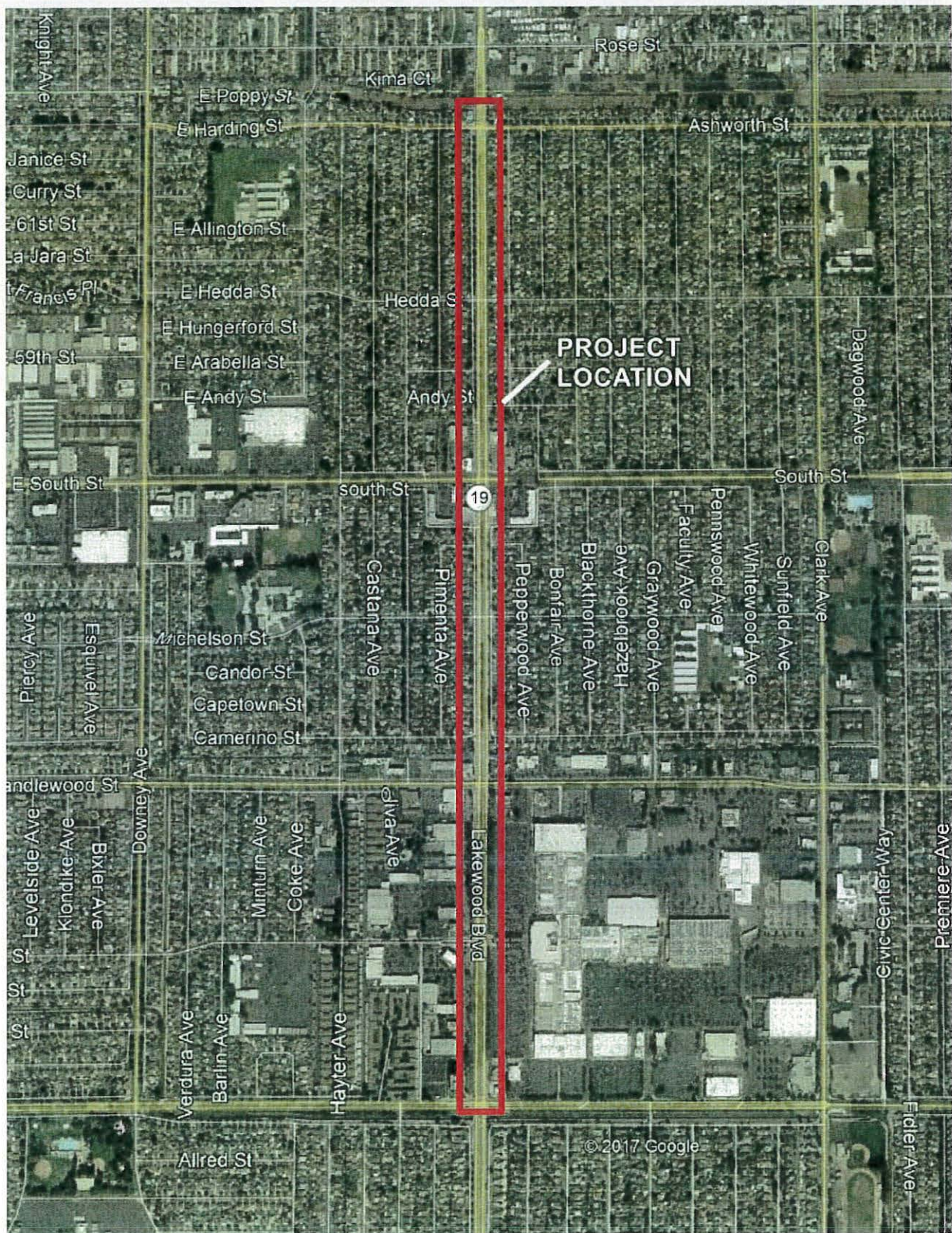


Figure 2. Project location map.



GABRIELEÑO BAND OF MISSION INDIANS - KIZH NATION

Historically known as The San Gabriel Band of Mission Indians
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

City of Lakewood
Pacific Palisades, CA 90272

February 7, 2018

Re: AB52 Consultation request for Lakewood Blvd Complete Streets/Green Streets Improvements Project

Dear Dana Slawson,

Please find this letter as a written request for consultation regarding the above-mentioned project pursuant to Public Resources Code § 21080.3.1, subd. (d). Your project lies within our ancestral tribal territory, meaning belonging to or inherited from, which is a higher degree of kinship than traditional or cultural affiliation. Your project is located within a sensitive area and may cause a substantial adverse change in the significance of our tribal cultural resources. Most often, a records search for our tribal cultural resources will result in a "no records found" for the project area. The Native American Heritage Commission (NAHC), ethnographers, historians, and professional archaeologists can only provide limited information that has been previously documented about California Native Tribes. This is the reason the NAHC will always refer the lead agency to the respective Native American Tribe of the area because the NAHC is only aware of general information and are not the experts on each California Tribe. Our Elder Committee & tribal historians are the experts for our Tribe and are able to provide a more complete history (both written and oral) regarding the location of historic villages, trade routes, cemeteries and sacred/religious sites in the project area. Therefore, to avoid adverse effects to our tribal cultural resources, we would like to consult with you and your staff to provide you with a more complete understanding of the prehistoric use(s) of the project area and the potential risks for causing a substantial adverse change to the significance of our tribal cultural resources.

Consultation appointments are available on Wednesdays and Thursdays at our offices at 910 N. Citrus Ave. Covina, CA 91722 or over the phone. Please call toll free 1-844-390-0787 or email gabrielenoindians@yahoo.com to schedule an appointment.

** Prior to the first consultation with our Tribe, we ask all those individuals participating in the consultation to view a video produced and provided by CalEPA and the NAHC for sensitivity and understanding of AB52. You can view their videos at: <http://calepa.ca.gov/Tribal/Training/> or <http://nahc.ca.gov/2015/12/ab-52-tribal-training/>

With Respect,

Andrew Salas, Chairman

Andrew Salas, Chairman

Albert Perez, treasurer

PO Box 393, Covina, CA 91723

Nadine Salas, Vice-Chairman

Martha Gonzalez Lemos, treasurer

www.gabrielenoindians.org

Christina Swindall Martinez, secretary

Richard Gradias, Chairman of the Council of Elders

gabrielenoindians@yahoo.com



March 15, 2018

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower, CA 90707

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Dorame:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

Project Location: The project site is Lakewood Boulevard, from North City Limits to Del Amo Boulevard

Enclosed please find a project description and a vicinity map of the project area. The proposed project consists of a Class I bikeway, roadway, storm drain, utility undergrounding (overhead power lines) and streetscape improvements along Lakewood Boulevard. The project will occur in two phases as the proposed utility undergrounding will be performed by Southern California Edison in the first phase of construction, and thereafter, followed by the proposed bike/roadway, storm drain and streetscape improvements in the second phase of the project.

If there is information regarding sites, traditional cultural properties, or other cultural resource considerations within the project area that you would like to share, or request further information, please contact Max Withrow as soon as possible at:

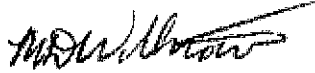
City of Lakewood
Attention: Max Withrow, Assistant Director of Public Works
5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org

Lakewood

Please reference "Lakewood Boulevard Capacity Enhancement Project" in any e-mails and correspondence.

CITY OF LAKEWOOD

Sincerely,

A handwritten signature in black ink, appearing to read "Max Withrow".

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrielino/Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908
Los Angeles, CA 90086

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Dunlap:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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If there is information regarding sites, traditional cultural properties, or other cultural resource considerations within the project area that you would like to share, or request further information, please contact Max Withrow as soon as possible at:

City of Lakewood
Attention: Max Withrow, Assistant Director of Public Works
5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org

Lakewood

COPY

Please reference "Lakewood Boulevard Capacity Enhancement Project" in any e-mails and correspondence.

CITY OF LAKEWOOD

Sincerely,

A handwritten signature in black ink, appearing to read "Max Withrow", with a stylized flourish at the end.

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrielino/Tongva Nation
Sandonne Goad, Chairperson
106 ½ Judge John Aiso Street, #231
Los Angeles, CA 90012

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Ms. Goad:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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If there is information regarding sites, traditional cultural properties, or other cultural resource considerations within the project area that you would like to share, or request further information, please contact Max Withrow as soon as possible at:

City of Lakewood
Attention: Max Withrow, Assistant Director of Public Works
5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org

Lakewood

COPY

Please reference "Lakewood Boulevard Capacity Enhancement Project" in any e-mails and correspondence.

CITY OF LAKEWOOD

Sincerely,

A handwritten signature in black ink, appearing to read "Max Withrow", with a stylized flourish at the end.

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Administrator.
Email: tattnlaw@gmail.com

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Rosas:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

Project Location: The project site is Lakewood Boulevard, from North City Limits to Del Amo Boulevard

Enclosed please find a project description and a vicinity map of the project area. The proposed project consists of a Class I bikeway, roadway, storm drain, utility undergrounding (overhead power lines) and streetscape improvements along Lakewood Boulevard. The project will occur in two phases as the proposed utility undergrounding will be performed by Southern California Edison in the first phase of construction, and thereafter, followed by the proposed bike/roadway, storm drain and streetscape improvements in the second phase of the project.

If there is information regarding sites, traditional cultural properties, or other cultural resource considerations within the project area that you would like to share, or request further information, please contact Max Withrow as soon as possible at:

City of Lakewood
Attention: Max Withrow, Assistant Director of Public Works
5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org

Lakewood

COPY

Please reference "Lakewood Boulevard Capacity Enhancement Project" in any e-mails and correspondence.

CITY OF LAKEWOOD

Sincerely,

A handwritten signature in black ink, appearing to read "Max Withrow", with a long horizontal flourish extending to the right.

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrieleno/Tongva
San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel, CA 91778

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Morales:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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CITY OF LAKEWOOD

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Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrieleno Bank of Mission Indians – Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina, CA 91723

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Salas:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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mwithrow@lakewoodcity.org

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CITY OF LAKEWOOD

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Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles, CA 90067

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Ms. Candelaria:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org

Lakewood

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CITY OF LAKEWOOD

Sincerely,

A handwritten signature in blue ink, appearing to read "Max Withrow".

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit



March 15, 2018

Gabrielino-Tongva Tribe
Bernie Acuna, Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles, CA 90067

RE: AB-52 Notification for the Lakewood Boulevard Capacity Enhancement Project, Lakewood, California

Dear Mr. Acuna:

Under Assembly Bill 52 (AB-52), codified as Section 21080.3.1 of the California Environmental Quality Act (CEQA), the City of Lakewood is required to provide formal notification to California Native American Tribes of proposed projects within 14 days of determining that a project's application is complete. We are sending you this notice because you had requested notification of certain projects that are subject to CEQA. The preliminary engineering and planning process for this project has begun and includes preparation of an Initial Study/Mitigated Negative Declaration for CEQA compliance. As part of this planning process, you have the opportunity to review this project.

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City of Lakewood
Attention: Max Withrow, Assistant Director of Public Works
5050 Clark Avenue
Lakewood, CA 90712
mwithrow@lakewoodcity.org


COPY

Lakewood

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CITY OF LAKEWOOD

Sincerely,

A handwritten signature in black ink, appearing to read "Max Withrow".

Max Withrow, P.E.
Assistant Director of Public Works

Attachments: Project Description, Project Location Map, and Site Layout Exhibit

From: Breana Campbell [<mailto:bcampbell@rinconconsultants.com>]
Sent: Monday, June 11, 2018 1:58 PM
To: Robert Sun <RSun@willdan.com>
Cc: Shannon Carmack <scarmack@rinconconsultants.com>
Subject: RE: Architectural Historian requested

Hi Robert,

Great to hear from you! Yes, we do have several architectural historians on staff. I have CC'ed Shannon Carmack on this email and she is available to help discuss your project concerns.

I hope you are doing well.

Cheers,

Breana K. Campbell-King, M.A., RPA
Archaeologist & Project Manager



Rincon Consultants, Inc.
Office: 760 918 9444 EXT 217
Mobile: 619 933 1496
www.rinconconsultants.com
Environmental Scientists Planners Engineers
5000 Fastest Growing Companies – Inc. Magazine

From: Robert Sun [<mailto:RSun@willdan.com>]
Sent: Monday, June 11, 2018 1:49 PM
To: Breana Campbell
Subject: Architectural Historian requested

Hi Breana,

Do you have an architectural historian on staff? I could use a second opinion for a project we have in Lakewood.

Thanks,

Robert Sun
Principal Planner

Willdan Engineering
13191 Crossroads Parkway North
Suite 405
Industry, California 91746
rsun@willdan.com

fax: 562.695.2120
direct: 562.368.4866





Google earth view Lakewood boulevard
Lakewood Boulevard 1951

APPENDIX D: GREENHOUSE GAS ASSESSMENT LANDRUM AND BROWN

Greenhouse Gas Assessment For:

LAKEWOOD BOULEVARD IMPROVEMENTS

CITY OF LAKEWOOD

Prepared For:
WILLDAN GROUP INC.
13191 Crossroads Parkway North, Suite 405
Los Angeles, CA 91746-3443

Prepared By:



LANDRUM & BROWN
19700 Fairchild, Suite 230
Irvine, CA 92618
949•349•0671

June 7, 2018

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1.0 Existing Setting

This report analyzes the potential greenhouse gas climate change impacts associated with proposed Lakewood Boulevard Improvements between Del Amo Boulevard and Ashworth Street in the City of Lakewood. This report analyzes the potential greenhouse gas climate change impacts associated with this project.

Section 1.1 presents a detailed description of the project. Section 1.2 provides background information on greenhouse gasses (GHG) and climate change. The compounds identified as greenhouse gasses and their effect is discussed along with the impacts of climate change and the impacts of adapting to climate change. Section 1.3 provides inventories of GHG by country and State. Sources of GHG emissions in the State of California are discussed in Section 1.4. Federal, State and local regulations relating to GHG's and climate change are discussed in Section 1.5.

Potential GHG impacts from the proposed project are assessed in Section 2.0. The thresholds of significance used to assess the project's impacts are presented in Section 2.1. The methodology used to estimate project related GHG emissions is discussed in Section 2.2. The results of the GHG emissions estimate is presented in Section 2.3 and the impact from the project are discussed in Section 2.4. Mitigation is discussed in Section 3.0

1.1 Project Description

This report analyzes the potential greenhouse gas climate change impacts associated with the proposed Lakewood Boulevard Improvement project. Regional air quality impacts from construction and operation of the proposed project are analyzed, as are potential local air quality impacts.

Lakewood Boulevard between Del Amo Boulevard and Ashworth Street is proposed to be rehabilitated and a parkway constructed for bicycles and pedestrians within the existing Right of Way. Improvements will consist of reconstructing existing medians;; improving and repairing existing pavement; modifying and repairing existing curbs, sidewalks and ramps including improving Americans with Disabilities Act (ADA) accessibility; widen and narrowing the road as needed within the existing Right of Way, generally three feet or less to maintain minimum lane widths; modify traffic systems to accommodate the parkway including traffic signals, signage, street lighting; relocate utilities and adjust to grade as needed to accommodate improvements; add or replace street trees; add aesthetics improvements including landscaped planters and modify transit stops. The project is anticipated to be constructed within the existing right of way. Figure 1 presents a vicinity map showing the project location and Figure 2 shows an aerial photograph of the project site.

1.2 Greenhouse Gas and Climate Change Background Information

The International Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5) affirms that the planet is warming and that humans beings are "extremely likely" (indicating a 95 percent certainty) to be the primary cause. Since global warming and climate change emerged publically as an environmental issue in the 1980's, the scientific evidence has grown even stronger that the climate is changing; the impacts are widespread and occurring now. This evidence includes rising temperatures,

shifting snow and rainfall patterns, and increased incidents of extreme weather events.

The global average temperature has increased by approximately 1.6°F (0.9°C) above pre industrial levels due to the release of greenhouse gasses. Scientific research indicates that an increase in the global average temperature greater than 3.6°F (2.0°C) poses severe risks to natural systems and human health and well-being. With an additional 2.0°F (1.1°C) increase in temperatures, sea levels are anticipated to rise between 1.3 and 2.6 feet (0.4 to 0.8 meters) over current levels with an upper end estimate of an increase of approximately 3.2 feet (1.0 meters).

1.2.1 Greenhouse Gasses

The "greenhouse effect" is the natural process that retains heat in the troposphere, the bottom layer of the atmosphere. Without the greenhouse effect, thermal energy would "leak" into space resulting in a much colder and inhospitable planet. With the greenhouse effect, the global average temperature is approximately 61°F (16°C). Greenhouse gasses (GHGs) are the components of the atmosphere responsible for the greenhouse effect. The amount of heat that is retained is proportional to the concentration of GHGs in the atmosphere. As more GHGs are released into the atmosphere, GHG concentrations increase and the atmosphere retains more heat increasing the effects of climate change.

Figure 1 Project Vicinity

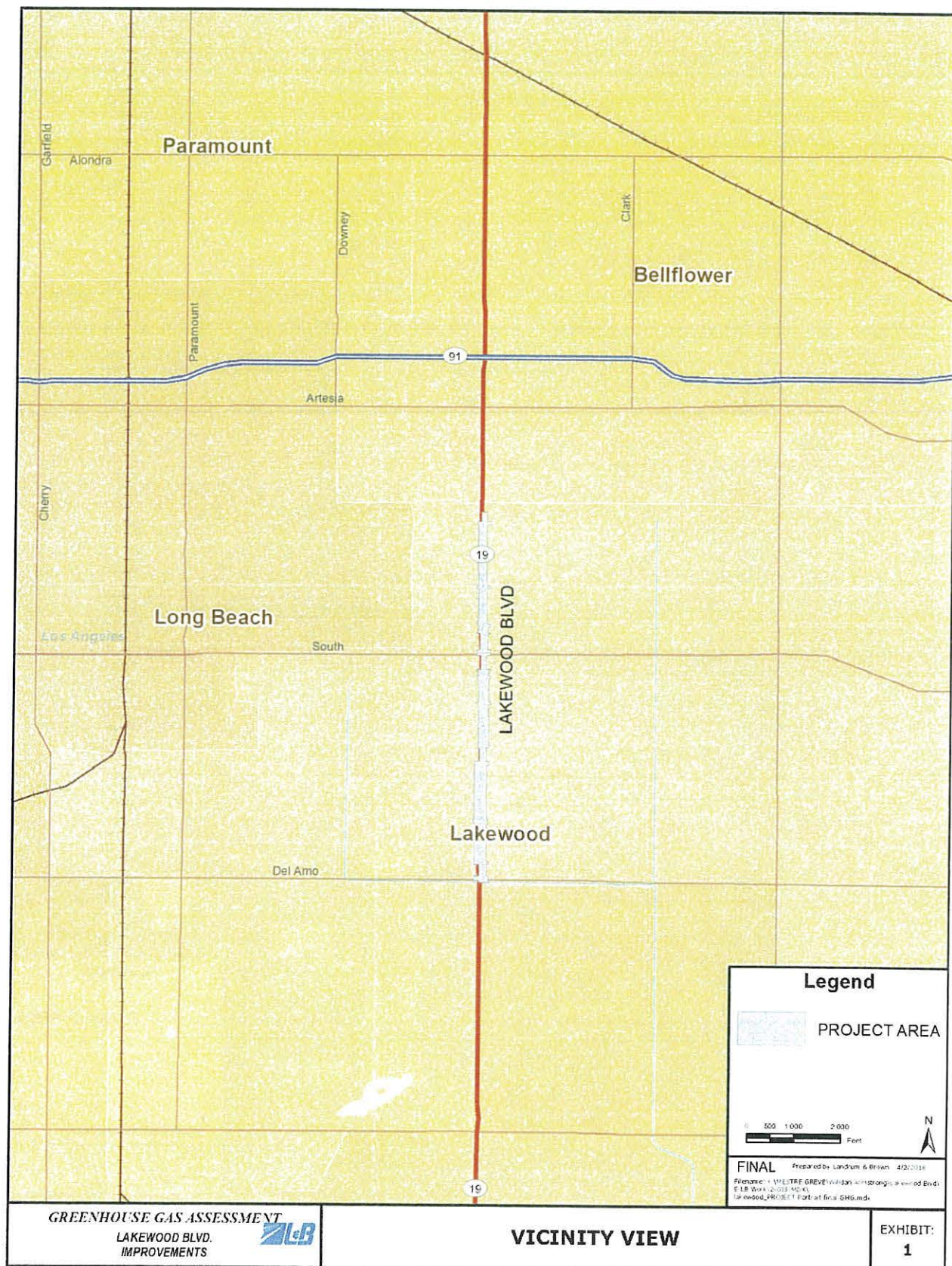


Figure 2 Project Site



Six gasses were identified by the Kyoto Protocol for emission reduction targets: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), and sulfur hexafluoride (SF₆). Chlorofluorocarbons and other chlorine or bromine-containing gasses are also considered GHG's but these are also stratospheric ozone (the good kind that blocks ultraviolet rays from the sun) depleting substances that were phased out under the Montreal Protocol. The IPCC's AR5 report identified additional GHGs including the synthetic gases nitrogen trifluoride (NF₃) and sulfur hexafluoride (SF₆). In addition, tropospheric ozone (O₃) and black carbon have been identified as important climate pollutants.

Water vapor is also a GHG. Water vapor is a highly active component of the climate system that responds rapidly to changes in conditions by either condensing into rain or snow, or evaporating to return to the atmosphere. The water content of the atmosphere is constantly being depleted by precipitation as well as being replenished by evaporation. Since its concentration is controlled by the climate itself, water vapor acts as a fast feedback, reacting to, and amplifying the warming provided by the forcing greenhouse gases. Human activity does not significantly affect water vapor concentrations except at local scales.

Black carbon is considered a GHG as well. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels. Black carbon contributes to climate change directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and cloud formation. Additionally, black carbon deposits on glaciers and snow packs increase the solar radiation absorbed, increasing the melting rate. This is a special concern for California because of its dependence on the Sierra snow pack for water.

Black carbon emissions from anthropogenic sources in California have been reduced considerably, about 70 percent between 1990 and 2010 because particulate matter is a criteria pollutant and the State of California has identified Diesel Particulate Matter as a toxic air contaminant. Programs to reduce particulate emissions have also reduced black carbon emissions and close to 95 percent, control of particulate emissions is expected by 2020. However, the majority of black carbon emissions in California are due to wildfires. One of the consequences of climate change is increased wildfire.

Carbon dioxide (CO₂) is undoubtedly the most important GHG with methane (CH₄) the second most important and nitrous oxide (N₂O) close behind. Approximately 80 percent of the total radiative forcing (i.e., the amount of heat stored in the atmosphere) is caused by these three gasses. Since pre-industrial times (circa 1750) carbon dioxide concentrations have increased by about 40 percent, methane concentrations have increased about 150 percent and nitrous oxide concentrations have increased about 20 percent. These increases are due the use of fossil fuels, fertilizer usage and from land use and land use change—in particular, agriculture.

Carbon dioxide, methane, and nitrous oxide are emitted by human activities as well as natural sources. Human sources of carbon dioxide include the burning of fossil fuels, deforestation and cement production. There are also abundant natural sources of carbon dioxide such as wild fires, decomposition, ocean release, respiration and volcano's. In fact, the amount of carbon dioxide emissions from natural sources is

much greater than from human sources. However, prior to the industrial revolution the amount of carbon dioxide produced by natural sources was completely offset by natural carbon sinks that remove carbon dioxide from the atmosphere. The additional emissions from human sources have upset the balance of the carbon cycle that has existed near equilibrium for thousands of years. Human emissions of methane are much greater than natural emissions and include landfills, livestock farming, as well as the production, transportation and use of fossil fuels. Natural sources of methane include wetlands, termites and the oceans. The primary human sources of nitrous oxide are agriculture, fossil fuel combustion, and industrial process. The main natural sources are soils under natural vegetation and the oceans.

Methane is the principle component of natural gas. It is also produced biologically under anaerobic decomposition in ruminants (e.g. cows) and landfills. Methane is considered the second most important GHG due to its high GWP and the fact that methane concentrations have increased considerably as a result of human activities related to agriculture, fossil fuel extraction and distribution, and waste generation and processing.

Methane is also important because it contributes to background tropospheric ozone (the bad kind) and modeling has shown tropospheric ozone concentrations change almost linearly with changes in methane emissions. Tropospheric ozone concentrations have risen about 30 percent since pre-industrial times and tropospheric ozone is considered by the IPCC as the third most important greenhouse gas after carbon dioxide and methane.

All of the other GHG's are emitted by specific industrial activities, such as aluminum or semiconductor manufacturing, or are used as refrigerants and emitted to the atmosphere from leaks or improper handling of the substances and only encountered in specific situations. The three main categories of fluorinated gasses, HFCs, PFCs, and SF₆ have no natural sources and only come from human related activities. However, these GHGs are considered important because their relative effect on the climate even at low concentrations.

Each of the GHGs affects climate change at different rates and persists in the atmosphere for different lengths of time. For example, because of the way it absorbs infrared heat and the length of time it exists in the atmosphere, one sulfur hexafluoride molecule has the same effect as between 17,500 and 23,500 carbon monoxide molecules. The relative measure of the potential for a GHG to trap heat in the atmosphere is called global warming potential ("GWP"). GWP accounts for both the difference in the amount of heat that is trapped but the lifetime of the GHG, the amount of time it remains in the atmosphere. Table 1 presents the lifetimes and GWP for the primary GHGs. The table divides the GHGs into long-lived, those that persist in the atmosphere for more than 20 years, and short-lived who persist for less than 20 years.

Table 1
GHG Lifetimes and Global Warming Potentials (GWP)

Pollutant	Lifetime (years)	Global Warming Potential 20-year	100-year ¹
Long-Lived			
Carbon dioxide (CO ₂)	~100 ²	1	1
Nitrous oxide (N ₂ O)	121	264	265
Nitrogen trifluoride (NF ₃)	500	12,800	16,100
Sulfur hexafluoride (SF ₆)	3,200	17,500	23,500
Perfluorocarbons (PFC)	3,000–50,000	5,000–8,000	7,000–11,000
Short-Lived (<20 years)			
Black Carbon ³	Days to Weeks	270–6,200	100–1,700
Methane (CH ₄)	12	84	28
Hydrofluorocarbons (HFC) ⁴	(<1 to >100)	~100–11,000	~100–12,000

1. The 20- and 100-year global warming potential estimates are from the IPCC 2013 Fifth Assessment Report (AR5), which includes the independent scientific assessment of the black carbon radiative, forcing published in early 2014.
2. CO₂ has a variable atmospheric lifetime and cannot be readily approximated as a single number.
3. BC climate effects are highly uncertain, in large part because they depend on the conditions under which they are emitted (i.e., location and time of year). This type of uncertainty does not apply to the Kyoto greenhouse gases.
4. HFCs have a wide range of lifetimes—some long, some short by this definition. Correspondingly, they have a wide range of GWPs.

Source: First Update to the Climate Change Scoping Plan, State of California, 2014

The distinction between short-lived and long-lived climate pollutants is important because controlling the short-lived pollutants is a promising method for limiting climate change. The First Update to the Climate Change Scoping Plan states that controlling short-lived GHGs using existing best available control technologies will reduce the probability of exceeding the 2°C barrier before 2050 by less than ten percent and by 2100 by less than 50 percent and reduce sea level rise by 25 percent. This is discussed further in Section 1.5.2.

Global GHG emissions are measured in million metric tons of carbon dioxide equivalent ("MMT CO₂EQ") units. A metric ton, 1,000 kilograms, is approximately 2,205 lbs. The CO₂ equivalent emissions are calculated by multiplying the quantity of emissions from each GHG by its GWP. Typically, CO₂EQ is based on the 100-year GWP. Emissions of one metric ton of CO₂, N₂O, and CH₄ each, would be equivalent to emissions of 294 MT CO₂EQ (1 MT from the CO₂, 28 MT from the N₂O, and 265 MT from the CH₄).

1.2.2 Impact of Climate Change on California and Human Health

The long term environmental impacts of climate change may include sea level rise that could cause devastating erosion and flooding of coastal cities and villages, as well as more intense hurricanes and typhoons worldwide. In the United States, Chicago is projected to experience 25 percent more frequent heat waves and Los Angeles a four-to-eight-fold increase in heat wave days by the end of the century

(IPCC, 2007: Climate Change 2007: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change, Cambridge University Press, Cambridge).

Locally, global warming could cause changing weather patterns with increased storm and drought severity in California. Changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack (e.g., estimates include a 30 to 90 percent reduction in snow pack in the Sierra Nevada mountain range). Current data suggest that in the next 25 years, in every season of the year, California could experience unprecedented heat, longer and more extreme heat waves, greater intensity and frequency of heat waves, and longer dry periods. The California Climate Change Center (2006) predicted that California could witness the following events:

- Temperature rises between 3 and 10.5° F
- 6 to 20 inches or more increase in sea level
- 2 to 4 times as many heat-wave days in major urban centers
- 2 to 6 times as many heat-related deaths in major urban centers
- 1 to 1.5 times more critically dry years
- 10 to 55 percent increase in the risk of wildfires

An increase in the frequency of extreme events may result in more event-related deaths, injuries, infectious diseases, and stress-related disorders. Particular segments of the population such as those with heart problems, asthma, the elderly, the very young and the homeless can be especially vulnerable to extreme heat. In addition, climate change may increase the risk of some infectious diseases; particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects. These "vector-borne" diseases include malaria, dengue fever, yellow fever, and encephalitis. Further, algal blooms could occur more frequently as temperatures warm — particularly in areas with polluted waters — in which case diseases (such as cholera) that tend to accompany algal blooms could become more frequent.

1.2.3 Adaptation Impact

Adaptation refers to potential climate change impacts on the project. Global warming is already having a profound impact on water resources. Climate change already altered the weather patterns and water supply in California leading to increased water shortages (i.e., a dwindling snowpack, bigger flood flows, rising sea levels, longer and harsher droughts). Water supplies are also at risk from rising sea levels. Risks may include degrade California's estuaries, wetlands, and groundwater aquifers which would threaten the quality and reliability of the major California fresh water supply (Climate Change Adaptation Strategies for California's Water, State of California Department of Water Resources, October 2008).

Higher temperatures will also likely increase electricity demand due to higher air conditioning use. Even if the population remained unchanged, toward the end of the century annual electricity demand could increase by as much as 20 percent if