DRAFT

Birch Specific Plan
Initial Study / Mitigated Negative Declaration

Prepared for:

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AB	Assembly Bill
ADT	average daily traffic
APN	Assessor's Parcel Number
applicant	Real Quest Holding LLC
AQMP	air quality management plan
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
Cal Water	California Water Service
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	methane
CHRIS	California Historical Resources Information System
City	City of Carson
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2E	carbon dioxide equivalent
CRHR	California Register of Historical Resources
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
I	Interstate
IS	Initial Study
JWPCP	Joint Water Pollution Control Plant
LACoFD	Los Angeles County Fire Department
LACSD	Los Angeles County Sanitation Districts
LASD	Los Angeles County Sheriff's Department
LAUSD	Los Angeles Unified School District
L_{EQ}	energy equivalent sound level
LID	low-impact development
LOS	level of service

Acronym/Abbreviation	Definition
LST	localized significance threshold
Metro	Los Angeles County Metropolitan Transportation Authority
MM	mitigation measure
MND	Mitigated Negative Declaration
MS4	municipal separate storm sewer system
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Administration
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PRC	California Public Resources Code
project	Birch Specific Plan
RCNM	Roadway Construction Noise Model
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SO_x	sulfur oxides
SUSMP	Standard Urban Stormwater Mitigation Plan
TAC	toxic air contaminant
UWMP	Urban Water Management Plan
VOC	volatile organic compound
WRD	Water Replenishment District of Southern California

1 INTRODUCTION

1.1 Project Overview

The City of Carson (City) received a development application from Real Quest Holding LLC (applicant) requesting approval of the following discretionary actions for the proposed Birch Specific Plan (project):

- Birch Specific Plan (SP 15-2017) to ensure consistency with the City of Carson General Plan, Carson Municipal Code, and Carson Zoning Ordinance.
- General Plan Amendment (GPA No. 100-2017) to change the existing land use designation from High Density Residential to Urban Residential.
- Zone Change Case (ZCC No. 178-17) to change the existing zoning from RM-18-D (Residential Multifamily–Medium Density up to 18 dwelling units per acre with Design Overlay) to Birch.
- Conditional Use Permit (CUP No. 1023-17) to increase the residential density beyond what is currently allowed by the Carson Zoning Ordinance.
- Design Overlay Review (DOR No. 1661-17) to review and permit the design of the proposed project through the General Plan and Carson Zoning Ordinance.
- Tentative Tract Map (TTM 76070) to subdivide the existing parcels to allow for the development of 32 residential condominium units (the two existing parcels will be combined into one parcel upon implementation of the proposed project).

The approximately 0.78-acre project site contains three existing residential buildings. The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construction of a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements.

The proposed project is subject to analysis pursuant to the California Environmental Quality Act (CEQA). In accordance with CEQA Guidelines Section 15367, the City is the lead agency with principal responsibility for considering the proposed project for approval (14 California Code of Regulations [CCR] 1500 et seq.).

1.2 California Environmental Quality Act Compliance

CEQA, a statewide environmental law contained in California Public Resources Code (PRC) Sections 21000–21177, applies to most public agency decisions to carry out, authorize, or

approve actions that have the potential to adversely affect the environment (PRC Section 21000 et seq.). The overarching goal of CEQA is to protect the physical environment. To achieve that goal, CEQA requires that public agencies identify the environmental consequences of their discretionary actions and consider alternatives and mitigation measures that could avoid or reduce significant adverse impacts when avoidance or reduction is feasible. It also gives other public agencies and the public an opportunity to comment on the project. If significant adverse impacts cannot be avoided, reduced, or mitigated to below a level of significance, the public agency is required to prepare an environmental impact report (EIR) and balance the project's environmental concerns with other goals and benefits in a statement of overriding considerations.

1.3 Preparation and Processing of this Initial Study/Mitigated Negative Declaration

The City's Community Development Department, Planning Division, directed and supervised preparation of this Initial Study/Mitigated Negative Declaration (IS/MND). Although prepared with assistance from the consulting firm Dudek, the content contained and the conclusions drawn within this IS/MND reflect the independent judgment of the City.

1.4 Initial Study Checklist

Dudek, under the City's guidance, prepared the proposed project's Environmental Checklist (i.e., Initial Study) per CEQA Guidelines Sections 15063–15065. The CEQA Guidelines include a suggested checklist to indicate whether a project would have an adverse impact on the environment. The checklist is found in Section 3, Initial Study, of this document. Following the Environmental Checklist, Sections 3.1 through 3.19 include an explanation and discussion of each significance determination made in the checklist for the proposed project.

For this IS/MND, one of the following four responses is possible for each environmental issue area:

1. Potentially Significant Impact
2. Less-Than-Significant Impact with Mitigation Incorporated
3. Less-Than-Significant Impact
4. No Impact

The checklist and accompanying explanation of checklist responses provide the information and analysis necessary to assess relative environmental impacts of the proposed project. In doing so, the City will determine the extent of additional environmental review, if any, for the proposed project.

1.5 Existing Documents Incorporated by Reference

CEQA Guidelines Sections 15150 and 15168(d)(2) permit and encourage an environmental document to incorporate by reference other documents that provide relevant data. The City of Carson General Plan (City of Carson 2004), the City of Carson General Plan EIR (City of Carson 2002), and the City of Carson Municipal Code (City of Carson 2017a), which are all herein incorporated by reference pursuant to CEQA Guidelines Section 15150, are available for review at the following location:

City of Carson
701 East Carson Street
Carson, California 90749

1.6 Point of Contact

The City of Carson is the lead agency for this environmental document. Any questions about preparation of this IS/MND, its assumptions, or its conclusions should be referred to the following:

Leila Carver, PTP, Planner
City of Carson
Community Development Department, Planning Division
701 East Carson Street
Carson, California 90745
310.952.1761 Ext. 1324
lcarver@carson.ca.us

The point of contact for the applicant is as follows:

Paul Choi
Laney LA Inc.
13110 Hawthorne Boulevard, Suite A
Hawthorne, California 90250
paul@laney.la

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2 PROJECT DESCRIPTION

2.1 Project Location

The project site is located on the western edge of the City of Carson, which is located in the South Bay/Harbor area of the County of Los Angeles (Figure 1, Project Location). Regionally, the City is bordered by the cities of Long Beach, Compton, Torrance, and Los Angeles. In addition, unincorporated Los Angeles County borders the City on the northwest. Locally, the project site is bound by South Figueroa Street to the east and Interstate 110 (I-110) to the west, approximately half-way between West Carson Street to the north and West 220th Street to the south.

The approximately 0.78-acre site consists of two parcels (Assessor's Parcel Number [APN] 7343-020-009 and APN 7343-020-010) (City of Carson 2017b). The street addresses associated with the project site are 21809 and 21811 South Figueroa Street.

2.2 Environmental Setting

City of Carson

The City of Carson is approximately 19 square miles in the South Bay region of Los Angeles County. Generally, the City is an urban community with a broad mix of land uses, including housing, commercial, office, industrial park, open space, and public serving uses. The City is primarily built-out and relatively flat, with most elevations ranging from 20 to 40 feet. The northwest and southeast portions of the City are generally industrial use. Residential uses are generally located on the southwest and northeast parts of the City. Commercial uses are concentrated along I-405.

Carson is surrounded by the City of Los Angeles to the northwest, south, and southeast. The City of Compton is adjacent to the northeast, and the City of Long Beach is adjacent to the east. The City of Carson is also close to the Ports of Los Angeles and Long Beach, approximately 2 to 3 miles to the south. There are four freeways that provide direct access to Carson: I-405 (San Diego Freeway), which bisects the City in an east/west direction; I-710 (Long Beach Freeway), which forms a portion of the eastern portion of Carson; State Route 91 (Redondo Beach/Artesia Freeway) in the northern portion of the City; and I-110 (Harbor Freeway), which forms much of the western border of the City (City of Carson 2002).

Project Area

The project area largely contains single- and multi-family residential uses and neighborhood-serving commercial uses. Over the past years, the project area has been transitioning into a more pedestrian- and transit-oriented area, with the project site located close to the Carson Street Mixed-Use District Master Plan and a Los Angeles County Metropolitan Transportation Authority (Metro) transit stop.

The Carson Street Mixed-Use District Master Plan focuses on a 1.75-mile-long section of Carson Street between I-110 and I-405. Carson Street is located approximately 400 feet north of the project site. The Master Plan seeks to create a livable, pedestrian downtown district, and provides the framework for future projects along the Carson Street corridor (City of Carson 2006). Due to the proximity of the project site to the Carson Street Mixed-Use District Master Plan, residents of the proposed project would be able to access the mixed-use district via local sidewalks, promoting pedestrian-oriented use.

In addition, the project site is accessible via local sidewalks to two transit lines. The Metro Silver Line links San Pedro in the south with the Harbor Gateway Transit Center, south Los Angeles, and downtown Los Angeles to the north, making a stop adjacent to Carson at I-110/Carson Street approximately 0.3 miles from the project site (Metro 2017). The Torrance Transit Rapid 3 runs along Carson Street then heads south on Avalon Boulevard; the eastbound and westbound stops are located approximately 0.2 miles from the project site (Torrance Transit 2017).

Existing Project Site

The approximately 0.78-acre project site contains three existing residential buildings: one residence is located at 21811 South Figueroa Street, and two residences are located at 21809 South Figueroa Street. The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site.

The residential structure located at 21809 South Figueroa Street faces toward South Figueroa Street with chain-linked fencing between the property and the sidewalk. Behind this structure is another residential structure that is accessed via an internal driveway. The third residential structure is located at 21811 South Figueroa Street toward the back of the property. The rest of the project site contains patches of grass, asphalt, and a picket fence facing South Figueroa Street (Figure 2, Existing Site Photos).

The current General Plan land use designation and zoning classification for the project site are High Density Residential (13 to 25 dwelling units per acre) and RM-18-D (Residential Multifamily–Medium Density up to 18 units per acre with Design Overlay) (City of Carson 2004).

Surrounding Land Uses

The project site located in a completely developed part of the City. The following land uses surround the project site:

- North: High Density Residential (up to 25 dwelling units per acre)
- East: South Figueroa Street and High Density Residential
- South: High Density Residential (up to 25 dwelling units per acre)
- West: I-110 (Harbor Freeway)

2.3 Proposed Project

The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construction of a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements (Figure 3, Site Plan).

The condominium units would be located within a four-story, podium-style building with parking provided at ground level and the residential units provided above. Floor plans would range from approximately 845 square feet two-bedroom units to 1,755 square feet three-bedroom units, totaling roughly 40,532 square feet of living space spread among the 32 units. Each unit would have an associated open space area ranging from 150 square feet to 486 square feet per unit, totaling 5,530 square feet of open space for the proposed project. The ground floor would consist of parking, a main entrance and lobby, a mailroom, and stairs and elevators to access the upper levels. The second and third floors would contain 11 units each, the fourth floor would consist of 10 units, and the roof would have a terrace with some recreational spaces.

The proposed project would contain various types of open spaces for residents and visitors to use. Common public open space would consist of approximately 1,800 square feet of publicly accessible landscaped area with outdoor seating along South Figueroa Street. Common semi-public open space would include an approximately 6,000-square-foot roof deck with an outdoor kitchen and barbeque, multiple fire pits, seating areas, turf, and cabanas.

The proposed project would include at least 5 feet of building setback landscape buffers. There would be a minimum setback of 20 feet along South Figueroa Street from the property line to the

building façade. Building features within the setback area would include stoops, porches, planters, street furniture, canopies, and awnings. A minimum 25-foot rear setback on portions of the building that would be 25 feet above grade would be required to increase the distance between the proposed project and I-110. A minimum 2-foot-wide planter along the entire edge of the floorplate where the increased setbacks would create a terrace would buffer the proposed project from the nearby freeway.

Site Design and Architecture

The proposed project would include vertical and horizontal elements that would break up the overall massing of the buildings and provide visual interest. Parkway and setback landscaped areas along South Figueroa Street would also soften views of the project site and enhance the overall visual quality of the proposed project.

The residential building and associated improvements were designed with a strong and appropriately scaled framework of architectural and landscape elements (Figure 4, Architectural Elevations). The building mass and landscaping throughout the project site were designed to create a sense of unity within on-site elements and with off-site elements. High-quality features would be provided through site design (e.g., building orientation and screening), architecture (e.g., mass, scale, form, style, material, and color), and streetscape elements (e.g., lighting and paving materials).

Site Access and Parking

Parking would be completely screened from the public view except at the driveway access points into the garages. There would be two parking entrances, both from South Figueroa Street, that would provide vehicle access to parking. There would be no internal vehicular streets other than the minimal access into the parking garage. The proposed project would include 73 parking spaces: 64 resident spaces and 9 guest parking spaces.

Sustainability Features

The proposed project would incorporate environmentally sustainable design using technology, resource-efficient modes of construction, water conversation features, and waste reduction guidelines. Design technologies would include installation of high-efficiency appliances and other energy-saving technologies within each unit and where appropriate on site. Water conservation features would include the use of drought-tolerant plants and indigenous species. Other features would include on-site bicycle storage, low volatile organic compound (VOC) materials, and recycling containers.

2.4 Construction and Phasing

Construction of the proposed project is anticipated to start in June 2018 and is expected to be completed in May 2019. The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site. These structures and asphalt would be demolished and disposed of in accordance with all applicable state and local regulations.

For a breakdown of construction sub-phases and schedule, refer to the California Emissions Estimator Model (CalEEMod) air quality modeling outputs provided in Appendix A, Air Quality and Greenhouse Gas Emissions Modeling.[1]

2.5 Project Approvals

The proposed project would require the following approvals prior to the issuance of demolition, grading, and building permits:

- Birch Specific Plan (SP 15-2017) to ensure consistency with the City of Carson General Plan, Carson Municipal Code, and Carson Zoning Ordinance.
- General Plan Amendment (GPA No. 100-2017) to change the existing land use designation from High Density Residential to Urban Residential.
- Zone Change Case (ZCC No. 178-17) to change the existing zoning from RM-18-D (Residential Multifamily–Medium Density up to 18 dwelling units per acre with Design Overlay) to Birch.
- Conditional Use Permit (CUP No. 1023-17) to increase the residential density beyond what is currently allowed by the Carson Zoning Ordinance.
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- Tentative Tract Map (TTM 76070) to subdivide the existing parcels to allow for the development of 32 residential condominium units (the two existing parcels will be combined into one parcel upon implementation of the proposed project).

[1] Construction phasing estimates are based on default assumptions provided in CalEEMod (Appendix A). These assumptions are based on the size of the project site, the proposed land use, and the size of the planned improvements.

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3 INITIAL STUDY CHECKLIST

1. Project title:

Birch Specific Plan

2. Lead agency name and address:

City of Carson
Community Development Department, Planning Division
701 East Carson Street
Carson, California 90745

3. Contact person and phone number:

Leila Carver, PTP, Planner
310.952.1761 Ext. 1324
lcarver@carson.ca.us

4. Project location:

The project site is located on the western edge of the City of Carson, which is located in the South Bay/Harbor area of the County of Los Angeles (Figure 1, Project Location). Regionally, the City is bordered by the cities of Long Beach, Compton, Torrance, and Los Angeles. In addition, unincorporated Los Angeles County borders the northwest of the City. Locally, the project site is bound by South Figueroa Street to the east and I-110 to the west, approximately half-way between West Carson Street to the north and West 220th Street to the south.

The approximately 0.78-acre site consists of two parcels (APN 7343-020-009 and APN 7343-020-010). The street addresses associated with the project site are 21809 and 21811 South Figueroa Street.

5. Project sponsor's name and address:

Paul Choi
Laney LA Inc.
13110 Hawthorne Boulevard, Suite A
Hawthorne, California 90250

6. General plan designation (Existing):

High Density Residential (HD)

7. Zoning (Existing):

RM-18-D (Residential Multifamily–Medium Density up to 18 dwelling units per acre with Design Overlay)

8. Description of project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary):

The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construction of a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements. See Section 2.3, Proposed Project, for additional details.

9. Surrounding land uses and setting (Briefly describe the project's surroundings):

The project site located in a completely developed part of the City. The following land uses surrounds the project site:

- North: High Density Residential (up to 25 swelling units per acre)
- East: South Figueroa Street and High Density Residential
- South: High Density Residential (up to 25 swelling units per acre)
- West: I-110 (Harbor Freeway)

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

No outside public agency approvals are required.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

Yes. See Section 3.17, Tribal Cultural Resources, for additional details.

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.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology and Soils
☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials	☐ Hydrology and Water Quality
☐ Land Use and Planning	☐ Mineral Resources	☐ Noise
☐ Population and Housing	☐ Public Services	☐ Recreation
☐ Transportation and Traffic	☐ Tribal Cultural Resources	☐ Utilities and Service Systems
☐ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

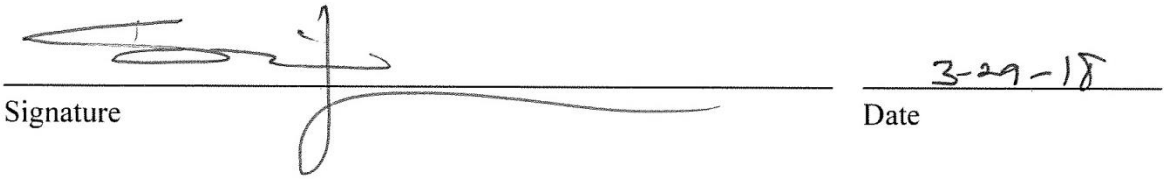
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a 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 the 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature Date

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 factors 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 off-site 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 Environmental Impact Report (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.

3.1 Aesthetics

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact. Scenic vistas and other important visual resources are typically associated with natural landforms such as mountains, foothills, ridgelines, and coastlines. The City of Carson's General Plan Open Space and Conservation Element categorizes the City's open space as either Recreational Open Space such as parks and public golf courses, or General Open Space, which consists of utility transmission corridors, drainage and flood facilities, and the Blimp Port (City of Carson 2004).

The project site is located in a highly developed area of the City, surrounded by existing residential uses and I-110 and away from any substantial open space areas. The nearest open space areas as identified by the City's General Plan are Carson Park and Veterans Park, which are located approximately 0.5 miles to the northeast of the project site and 0.57 miles to the southeast of the project site, respectively. Due to the distance between these open space areas and the project site, the proposed project would not be visible from this open space resource. Therefore, no impacts associated with scenic vistas would occur.

b) Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. There are no officially designated scenic highways in the City. According to the California Department of Transportation (Caltrans), the nearest eligible state scenic highway is the segment of State Route 1 (Pacific Coast Highway), located approximately 5.5 miles southeast of the project site in the City of Long Beach (Caltrans 2011). Due to

the intervening urban environment and natural topography located between the project site and this eligible state scenic highway, development of the proposed project would occur outside of the viewshed of this, and any other, designated scenic highway. Therefore, no impacts associated with state scenic highways would occur.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Less-Than-Significant Impact. Under the existing condition, the project site consists of three residential structures (Figure 2, Existing Site Photos). As currently proposed, the project would remove all existing structures from the site and introduce a four-story, 32-condominium unit and associated on-site improvements. As such, compared to the existing aesthetic conditions and due to the increase in residential density and development intensity on the project site, the proposed project would result in change to the site's visual character.

In an effort to ensure that any future changes related to visual character and quality do not result in adverse impacts, and to ensure that the proposed project would be aesthetically compatible with surrounding land uses, the proposed project has been designed to be compatible with the Carson Street Corridor Guidelines and Sustainability Standards, identified in Section 9138.17J of the Carson Municipal Code (City of Carson 2017a). In addition, the proposed project would be subject to review by the City to ensure that design of the proposed development is consistent with all applicable design requirements, standards, and regulations set forth in the Carson Municipal Code. Further, the proposed architecture would be assessed as part of the design review process to ensure that an integrated architectural theme is proposed that is compatible and would complement the site and surrounding properties.

The exterior design of the proposed project includes projections and other architectural elements that add articulation to the exterior elevation while reducing the overall massing of the proposed project. The proposed project was designed to include landscaping, including tall screening plantings along the project site's western edge, that is visible from I-110 and enhance visual views of the City from freeway corridors. In addition, the proposed landscaping would be visible to pedestrians along South Figueroa Street. Thus, the views from public vantage points would be enhanced through landscape setbacks and high-quality architectural features (i.e., mass, scale, form, style, material, color). These features would integrate the massing of the surrounding buildings with proposed project and provide visual interest.

Overall, the proposed project would enhance the existing project site through new landscape, hardscape, and other improvements on site. Therefore, impacts associated with visual quality and character would be less than significant.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less-Than-Significant Impact. The proposed project would introduce new sources of nighttime lighting onto the project site as a result of installation of new exterior light fixtures that are generally required for safety, security, and aesthetic purposes. Pursuant to Municipal Code Section 9127.1, all exterior lighting installed on the project site must be directed away from all adjoining and nearby residential property, and arranged and controlled so it would not create a nuisance or hazard to traffic or to the living environment. As such, all exterior lighting would be shielded and/or recessed to reduce light trespass (i.e., excessive or unwanted light generated on one property illuminating another property). Therefore, based on compliance with local requirements, impacts associated with light and nighttime glare would be less than significant.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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. 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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) 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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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 or conversion of forest land to non-forest use?	☐	☐	☐	☒

a) Would the project 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 located in a predominately urbanized area. According to the California Department of Conservation's California Important Farmland Finder, most of Los Angeles County is not mapped under the Farmland Mapping and Monitoring Program, and, thus, does not contain Prime Farmland, Unique Farmland, or Farmland of State Importance (collectively "Important Farmland") (DOC 2017). Therefore, no impacts associated with conversion of Important Farmland would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. According the California Department of Conservation's Williamson Act Parcel map for Los Angeles County, the project site is not located on or adjacent to any lands under Williamson Act contract. The Los Angeles County Williamson Act 2015/2016 Map designates the project site and surrounding land as non-Williamson Act Land (DOC 2016). In addition, the project site and surrounding area are not zoned for agricultural uses, but for residential and commercial uses (City of Carson 2004). As such, implementation of the proposed project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, no impacts associated with agricultural zoning or Williamson Act contracts would occur.

c) Would the project 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))?

No Impact. The project site is located within a highly developed part of the City. According to the City's Zoning Map, the project site is not located on or adjacent to forestland, timberland, or timberland zoned Timberland Production (City of Carson 2004). Therefore, no impacts associated with forestland or timberland would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The project site is located in a predominantly urban area. The project site is not located on or adjacent to forestland. No private timberlands or public lands with forests are located in the City. Therefore, no impact associated with the loss or conversion of forestland would occur.

e) Would the project 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 site is not located on or adjacent to any parcels identified as Important Farmland or forestland. In addition, the proposed project would not involve changes to the existing environment that would result in the indirect conversion of Important Farmland or forestland located away from the project site. Therefore, no impacts associated with the conversion of Farmland or forestland would occur.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

The following analysis is based on the CalEEMod air emissions modeling conducted by Dudek and included as Appendix A.

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less-Than-Significant Impact. The project site is located within the South Coast Air Basin (SCAB). The SCAB includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties, and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

The SCAQMD administers the air quality management plan (AQMP) for the SCAB, which is a comprehensive document outlining an air pollution control program for attaining all California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS). The most recent adopted SCAQMD AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD governing board in March 2017. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach from previous versions, focusing on available, proven, and cost-effective alternatives to traditional strategies while seeking to achieve multiple goals in partnership with other entities that promote reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017). Because mobile sources are the principal contributor to SCAB's air quality challenges, the SCAQMD has been and will continue to be closely engaged with the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA), which have primary responsibility for these sources. The 2016 AQMP recognizes the importance of working with other

agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of the 2016 AQMP and have broad support from a wide range of stakeholders (SCAQMD 2017).

As previously discussed, the project site is located within the SCAB under the jurisdiction of the SCAQMD, which is the local agency responsible for administration and enforcement of air quality regulations for the area. The SCAQMD has established criteria for determining consistency with the 2016 AQMP in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows:

- **Consistency Criterion No. 1:** Whether a project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- **Consistency Criterion No. 2:** Whether a project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion above, an air quality modeling analysis that identified the proposed project's impact on air quality was performed. Results of this analysis are included in Appendix A. CalEEMod Version 2016.3.2 was used to model emissions for the proposed project and were analyzed for significance (see Section 3.3[b]). The proposed project would generate minimal air pollutant emissions during short-term construction and long-term operational activities, as discussed under Section 3.3(b).

While striving to achieve the NAAQS for ozone (O_3) and $PM_{2.5}$ and the CAAQS for O_3, particulate matter less than or equal to 10 microns in diameter (PM_{10}), and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB (SCAQMD 2017). Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD *CEQA Air Quality Handbook* [SCAQMD 1993]).

The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the

Southern California Association of Governments (SCAG) for its 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for development of its AQMP emissions inventory (SCAQMD 2017). The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

As discussed in Section 3.10, Land Use and Planning, the project site's land use and zoning designations are High Density Residential and Residential Multifamily–Medium Density. If approved, the proposed project would include a Specific Plan (SP 15-2017) approval to change from High Density Residential to Urban Residential, and a Design Overlay Review (DOR No. 1661-17) and a Zone Change Case (ZCC 178-17) to change from RM-18-D to Birch. The proposed Specific Plan (SP 15-2017) approval would ensure consistency between the Birch Specific Plan and the City of Carson General Plan, and the General Plan would be amended concurrent with the adoption of the Birch Specific Plan. The amendment would result in the General Plan land use designation of Urban Residential to replace the existing High Density Residential. With the proposed General Plan amendment, the proposed project would result in population growth that does not conflict with anticipated SCAG growth projections assumed in the 2016 Final AQMP.

In addition, as discussed in Section 3.13, Population and Housing, the proposed project would increase on-site resident population by 116 persons. Under the RTP/SCS Jurisdictional Forecast 2040, the 2012 population for the City of Carson was 92,000 and the projected 2040 population is 107,900 (SCAG 2016). Although the project site is currently zoned for fewer dwelling units than is proposed, the additional 116 persons represents less than 1% of the 15,900 new residents expected. As such, the minimal change in population and employee populations related to the project would not cause the City to exceed the SCAG growth forecasts, and the proposed project would not conflict with the AQMP. Therefore, impacts associated with the applicable AQMP would be less than significant.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-Than-Significant Impact. Construction of the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance; fugitive dust emissions; and combustion pollutants from on-site construction equipment, off-site trucks hauling demolition debris and excavated earth materials, and construction workers

traveling to and from the site. Construction emissions can vary substantially from day to day depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions. Thus, an increment of day-to-day variability exists.

Pollutant emissions associated with construction activity were quantified using CalEEMod. Default values provided by the program were used where detailed project information was not available. A detailed depiction of the construction schedule—including information regarding phasing, equipment used during each phase, haul trucks, vendor trucks, and worker vehicles—is contained in the CalEEMod outputs provided in Appendix A.

Implementation of the proposed project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering the active site three times per day, depending on weather conditions. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, oxides of nitrogen (NO_x), carbon monoxide (CO), PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior and interior paint and other finishes, and asphalt pavement would also produce VOC emissions; however, the contractor is required by SCAQMD to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (SCAQMD 2016).

It is anticipated that construction of the proposed project would occur from approximately June 2018 through May 2019. For the purpose of estimating project emissions, it was assumed that construction activity would occur continuously. The analysis contained herein is based on the following assumptions (duration of phases is approximate):

- Demolition (1 month)
- Site preparation (2 days)
- Grading (4 days)
- Building construction (10 months)
- Paving (2 weeks)
- Architectural coating (2 weeks)

Construction worker number estimates and vendor truck trips by construction phase were based on CalEEMod default values, which are provided in Appendix A. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month) during project construction.

Table 1 provides the estimated maximum daily construction emissions generated during construction of the proposed project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emissions calculations are provided in Appendix A.

Table 1
Estimated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2018	2.83	24.85	15.87	0.03	3.30	2.05
2019	29.94	17.03	15.28	0.03	0.12	1.01
Maximum Daily Emissions	**29.94**	**24.85**	**15.87**	**0.03**	**3.30**	**2.05**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

VOC = volatile organic compound; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District
Notes: See Appendix A for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for compliance with SCAQMD Rule 403 (Fugitive Dust) and Rule 1113 (Architectural Coatings).

As shown in Table 1, daily construction emissions would not exceed the SCAQMD's significance thresholds for VOC, NO_x, CO, sulfur oxides (SO_x), PM_{10}, or $PM_{2.5}$ during either construction year. Construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. Therefore, short-term construction impacts associated with criterial air pollutant emissions would be less than significant.

Operation of the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from future residents; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources. Pollutant emissions associated with long-term operations were quantified using CalEEMod. Project-generated mobile source emissions were estimated in CalEEMod and are based on land-use-specific trip

rates. CalEEMod default values were also used to estimate emissions from the project area and energy sources.

Table 2 provides the maximum daily area, energy, and mobile source emissions associated with operation (year 2019) of the proposed project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emissions calculations are provided in Appendix A.

Table 2
Estimated Maximum Daily Operational Criteria Air Pollutant Emissions

Emissions Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	9.47	0.69	18.93	0.04	2.46	2.46
Energy	0.02	0.18	0.08	0.00	0.01	0.01
Mobile	0.38	1.95	5.07	0.02	1.37	0.38
Total	**9.87**	**2.82**	**24.08**	**0.06**	**3.84**	**2.85**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

VOC = volatile organic compound; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District
Note: See Appendix A for complete results.

As provided in Table 2, the combined daily area, energy, and mobile source emissions would not exceed the SCAQMD operational thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, long-term operational impacts associated with criterial air pollutant emissions would be less than significant.

c) Would the project 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)?

Less-Than-Significant Impact. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

When considering cumulative impacts, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2017).

The SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$, and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the proposed project would generate VOC and NO_x emissions (which are precursors to O_3), and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Tables 1 and 2, project-generated construction and operational emissions would not exceed the SCAQMD emissions-based significance thresholds for VOC, NO_x, PM_{10}, or $PM_{2.5}$.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be considered speculative.[2] However, future projects would be subject to CEQA and would require air quality analysis, and where necessary, mitigation if the project would exceed SCAQMD thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403, which sets forth general and specific requirements for all construction sites in the SCAQMD.

Therefore, based on the previous considerations, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant.

[2] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less-Than-Significant Impact. Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). Residential land uses are located adjacent to the project site to the north, south, and east. The closest off-site sensitive receptors to the project site are multi-family residences that border the project site's northern and southern boundary.

A localized significance threshold (LST) analysis was undertaken to determine potential impacts to nearby sensitive receptors during construction of the project. The SCAQMD recommends evaluation of localized nitrogen dioxide (NO_2), CO, PM_{10}, and $PM_{2.5}$ impacts to sensitive receptors in the immediate vicinity of the project site as a result of construction activities. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (SCAQMD 2009). According to the SCAQMD, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Hauling soils and construction materials associated with project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief and would cease once the trucks pass through the main streets.

Construction activities associated with the proposed project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for Source Receptor Area 4 (South Coastal Los Angeles County) are provided in Table 3; these are compared to the maximum daily on-site construction emissions generated by the proposed project.

Table 3
Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions	LST Criteria	Exceeds LST?
	Pounds per Day		
NO_2	20.75	57	No

Table 3
Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions	LST Criteria	Exceeds LST?
	Pounds per Day		
CO	8.08	585	No
PM_{10}	3.21	4	No
$PM_{2.5}$	2.03	3	No

Source: SCAQMD 2009.
NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter; $PM_{2.5}$ = fine particulate matter; LST = localized significance threshold
Notes: See Appendix A for detailed results.
Localized significance thresholds are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters.
These estimates reflect control of fugitive dust required by Rule 403.
Greatest on-site NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions are associated with the site preparation phase in 2018.

As provided in Table 3, construction activities would not generate emissions in excess of site-specific LSTs. Thus, site-specific construction impacts during construction of the proposed project would be less than significant. In addition, diesel equipment would be subject to the CARB air toxic control measures for in-use off-road diesel fleets, which would minimize diesel particulate matter (DPM) emissions.

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting control measures for sources of these TACs. The following measures are required by state law to reduce DPM emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-road Diesel Vehicles (Title 13 CCR, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13 of the CCR, Section 2485, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading is limited to 5 minutes; electric auxiliary power units should be used whenever possible.

The greatest potential for TAC emissions during construction of the proposed project would be DPM emissions from heavy equipment operations and heavy-duty trucks and

the associated health impacts to sensitive receptors. The closest sensitive receptors are adjacent to the project site's northern and southern boundary. As provided in Table 3, maximum daily particulate matter (PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds (SCAQMD 2009). Moreover, construction of the project would last approximately 1 year, after which project-related TAC emissions would cease.

There are no existing TAC-producing facilities within the recommended screening distance as defined in CARB's Air Quality and Land Use Handbook: A Community Health Perspective (CARB 2005). As such, no residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. The proposed project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Thus, project-related TAC emissions impacts related to exposure to sensitive receptors would be less than significant.

Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and the SCAB. Locally, project-generated traffic would be added to the City's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and operates on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing (SCAQMD 2017). The SCAQMD recommends that a local CO hotspot analysis be conducted if the intersection meets one of the following criteria: the intersection is at level of service (LOS) D or worse and where the project increases the volume-to-capacity ratio by 2%, or the project decreases LOS at an intersection from C to D (SCAQMD 2009). As discussed within Section 3.16, Transportation and Traffic, the proposed project would not generate traffic that would cause project area intersections to operate at LOS D or worse during peak hours. Thus, mobile emissions of CO from the proposed project are not anticipated to contribute substantially to an existing or projected air quality violation of CO.

Construction and operation of the proposed project would result in emissions that would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO_x, CO, SO_x, $PM_{10,}$ and $PM_{2.5}$. VOCs would be associated with motor vehicles, construction

equipment, and architectural coatings; however, project-generated VOC emissions would not result in the exceedances of the SCAQMD thresholds, as shown in Table 1 and Table 2. Generally, the VOCs in architectural coatings are of relatively low toxicity. In addition, SCAQMD Rule 1113 restricts the VOC content of coatings for construction and operational applications.

VOCs and NO_x are precursors to O_3, which the SCAB has designated as nonattainment with respect to the NAAQS and CAAQS. The health effects associated with O_3 are generally associated with reduced lung function. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind from the source location, which allows time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations also depends on the time of year that the VOC emissions occur because exceedances of the O_3 air quality standards tend to occur between April and October when solar radiation is highest (SCAQMD 2017). The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Nonetheless, VOC and NO_x emissions associated with project construction and operation could minimally contribute to regional O_3 concentrations and associated health impacts. Because of the minimal contribution during construction and operation, health impacts would be less than significant.

Construction and operation of the proposed project would also not exceed thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS or CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The proposed project would also not result in substantial DPM emissions during construction and operation, and therefore, would not result in significant health effects related to DPM exposure. In addition, the proposed project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, health impacts of the proposed project would be less than significant.

Construction and operation of the proposed project would not contribute to exceedances of the NAAQS or CAAQS for NO_2. Health impacts that result from NO_2 and NO_x include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, project construction would be relatively short term, and off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion

of the site at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Construction and operation of the proposed project would not require use of any stationary sources (e.g., diesel generators, boilers) that would create substantial, localized NO_x impacts. Thus, potential health impacts associated with NO_2 and NO_x would be less than significant.

CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots were discussed previously and determined to be a less-than-significant impact. As such, the proposed project's CO emissions would not contribute to significant health effects associated with this pollutant.

In summary, construction and operation of the proposed project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health impacts associated with criteria air pollutants would be less than significant.

e) Would the project create objectionable odors affecting a substantial number of people?

Less-Than-Significant Impact. Odors are a form of air pollution that is most obvious to the public and can present problems for the source and surrounding community. Although offensive odors seldom cause physical harm, they can be annoying and cause concern. Construction and operation of the project would not create objectionable odors affecting a substantial number of people.

Odors would potentially be generated from vehicles, architectural coatings, and equipment exhaust emissions during construction of the project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations typically associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The proposed project would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in odor impacts that would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a 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?	☐	☐	☐	☒

a) Would the project 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 project site is located in a developed part of the City and is surrounded by a predominantly urbanized mix of land uses, including residential and commercial. The nearest open space areas as identified by the City's General Plan are Carson Park and Veterans Park, which are located approximately 0.5 miles to the

northeast of the project site and 0.57 miles to the southeast of the project site, respectively (City of Carson 2004). Due to the intervening development between the project site and these natural areas, there is no direct connection between the project site and these open space areas.

No native habitat is located on the project site or in the immediately surrounding area. On-site plant species are limited to non-native, ornamental species located along the project frontages. These non-native, ornamental plant species form a non-cohesive plant community that is not known to support any candidate, sensitive, or special-status plant species. Based on the developed nature of the project site and surrounding area, wildlife species that could occur on site include common species typically found in urbanized settings, such as house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and western fence lizard (*Sceloporus occidentalis*). Based on specific habitat requirements, none of these, or any other wildlife species that can reasonably be expected to occur on the project site, are candidate, sensitive, or special-status wildlife species.

Ornamental landscape trees that are currently located on the project site would require removal prior to construction of the proposed project. Because of the highly disturbed nature of the project site and the residential activity around the site, it is unlikely that the existing trees would provide desirable nesting opportunities for bird/raptor species, especially considering that more suitable nesting options likely occur within the broader project area. Therefore, no impacts associated with candidate, sensitive, or special-status species would occur.

b) Would the project 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?

No Impact. The project site is located entirely on developed and disturbed land. No natural vegetation communities are present within the project site. Therefore, no impacts associated with riparian or sensitive vegetation communities would occur.

c) Would the project 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?

No Impact. No federally defined waters of the United States or state occur within the project site. This includes the absence of federally defined wetlands and other waters

(e.g., drainages) and state-defined waters (e.g., streams and riparian extent). The proposed project would be subject to typical restrictions and requirements that address erosion and runoff (e.g., best management practices [BMPs]), including those of the Clean Water Act and National Pollutant Discharge Elimination System (NPDES) permit. In addition, all construction activities would be limited to developed and disturbed land. Therefore, no impacts to jurisdictional waters or wetlands would occur.

d) Would the project 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 wildlife nursery sites?

No Impact. Wildlife corridors are linear, connected areas of natural open space that provide avenues for migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal.

Although some local movement of wildlife is expected to occur within the City, the City of Carson is not recognized as an existing or proposed Significant Ecological Area that links migratory populations, as designated by the County of Los Angeles (County of Los Angeles 2017). The project site is located within a highly urbanized area and would not interfere with the movement of any native residents, migratory fish, or wildlife species. Therefore, no impacts associated with wildlife movement or wildlife corridors would occur.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City does not have any local policies or ordinances protecting trees located on private property. As such, implementation of the proposed project would not conflict with local policies. Therefore, no impacts associated with local policies or ordinances protecting biological resources would occur.

f) Would the project 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 project site is not located within any habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat

conservations plan area. Therefore, no impacts associated with an adopted conservation plan would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 dedicated cemeteries?	☐	☐	☒	☐

The following analysis is based on the Cultural Resources Study prepared by Dudek and included as Appendix B.

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less-Than-Significant Impact. The Cultural Resources Study involved a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center, outreach with local Native American tribes/groups, a pedestrian survey, archival and building development research, and consideration of historical resources in compliance with CEQA. The CHRIS records search involved a search of any previously recorded cultural resources and investigations within a 0.5-mile radius of the project site, including a review of the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). The archival research involved review of historic maps, historic photographs, and historic aerials. In addition, in-person visits to the City of Carson Department of Building and Safety, City of Carson Planning Division, Los Angeles County Tax Assessors Office, City of Carson Public Library, and California State Dominguez Hills Archives and Special Collections was conducted.

On November 9, 2017, Dudek Architectural Historian Sara Corder conducted a pedestrian survey of the project site for historic-age built-environment resources. During the survey, all buildings and structures constructed more than 45 years ago were surveyed and recorded. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852[d][2]). Thus, due to the ages of the buildings on site (21809 and 21911 South Figueroa), each property was evaluated for NRHP/CRHR Designation Criteria and Integrity.

The criteria for listing resources in the CRHR were developed to be in accordance with previously established criteria developed for listing in the NRHP. Therefore, the criteria listed below is expressed in accordance with the NRHP criteria. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) 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.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5[b]). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1[q]), it is a "historical resource" and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5[a]).

All built-environment resources within the project site were recorded and evaluated in consideration of NRHP and CRHR designation criteria and integrity requirements. As a result of the significance evaluations, all built-environment resources within the project site were found not eligible for listing in the NRHP or CRHR (see Appendix B). Therefore, none of the buildings or structures on the project site are considered historical resources as defined by CEQA Guidelines Section 15064.5(a).

The buildings and structures at 21809 South Figueroa Street and 21811 South Figueroa Street were found not eligible under all NRHP and CRHR designation criteria and integrity requirements. Thus, these properties are not considered historical resources for the purposes of CEQA. Therefore, impacts associated with historic resources would be less than significant.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less-Than-Significant Impact with Mitigation Incorporated. Dudek requested a CHRIS records search from the South Central Coastal Information Center, which houses cultural resources records for Los Angeles County. Dudek received the results on November 2, 2017. The search included any previously recorded cultural resources and investigations on the project site and within a 0.5-mile radius of the site.

Based on the search, six previously conducted cultural resources studies and two previously recorded cultural resources were identified within 0.5 miles of the project site. One cultural resources study was conducted within the project site; it was part of an extensive archaeological inventory report for the entire City of Carson (refer to Table 1 of Appendix B). No cultural resources were identified within the project site as a result of the records search.

As part of the process of identifying cultural resources within or near the project site, Dudek contacted the Native American Heritage Commission (NAHC) to request a review of its Sacred Lands File. The NAHC emailed a response on October 16, 2017, stating that the Sacred Lands File failed to indicate presence of Native American cultural resources in the immediate project area. The NAHC also provided a list of five Native American groups and individuals who may have direct knowledge of cultural resources in or near the project site. Letters were prepared and sent to each of the five representatives on October 17, 2017, for any knowledge of resources in the project area. One Native American contact recommended Native American monitoring during all ground-disturbing activities.

No archaeological resources were identified within the project site as a result of the CHRIS records search or Native American outreach. In consideration of the negative results of the CHRIS records search and the NAHC Sacred Lands File search, there is a low potential for buried, unrecorded cultural resources to be encountered on the project site during construction activities. However, it is always possible that intact archaeological deposits are present at subsurface levels. For this reason, the project site

should be treated as potentially sensitive for archaeological resources. Therefore, mitigation measure (MM-) CUL-1 is recommended to reduce potential impacts to unanticipated archaeological resources to less than significant.

MM-CUL-1 If archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending on the significance of the find under the California Environmental Quality Act (CEQA) (14 California Code of Regulations Section 15064.5[f]; California Public Resources Code Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan and data recovery, may be warranted.

With incorporation of mitigation, impacts associated with archaeological resources would be less than significant.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-Than-Significant Impact with Mitigation Incorporated. According to the City's General Plan EIR (City of Carson 2002), because the City has undergone extensive transition and development over the years, the opportunity to encounter paleontological resources within the City is remote. Nonetheless, as is the case with most other development projects that involve earthwork activity, there is always a possibility—albeit low in this instance—that subsurface construction activity could unearth a potentially significant paleontological resource. As such, implementation of MM-CUL-2 would be required to ensure that subsurface construction activity complies with the standard procedures for treatment of unanticipated discoveries of paleontological resources.

MM-CUL-2 In the event that paleontological resources (fossil remains) are exposed during construction activities for the proposed project, all construction work occurring within 50 feet of the find shall immediately stop until a Qualified Paleontologist, as defined by the Society of Vertebrate Paleontology's 2010 guidelines, can assess the nature and importance of

the find. Depending on the significance of the find, the Qualified Paleontologist may record the find and allow work to continue, or may recommend salvage and recovery of the resource. All recommendations will be made in accordance with the Society of Vertebrate Paleontology's 2010 guidelines, and shall be subject to review and approval by the City of Carson. Work in the area of the find may only resume upon approval of a Qualified Paleontologist.

With incorporation of MM-CUL-2, impacts associated with paleontological resources would be less than significant.

d) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less-Than-Significant Impact. As discussed above, there are no previously recorded cultural resources on the project site. Since the site has been previously disturbed, ground-disturbing activities associated with demolition of the proposed structures are unlikely to uncover previously unknown archaeological resources. However, if human skeletal remains are discovered during ground-disturbing activities, California Health and Safety Code Section 7050.5 states that the County Coroner must be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains can occur until the County Coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she must notify the NAHC in Sacramento within 24 hours. In accordance with PRC Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant must complete his or her inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition for the human remains. Therefore, based on compliance with state requirements, impacts associated with the discovery of human remains would be less than significant.

3.6 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

The following analysis is based on the Geotechnical Engineering Investigation report prepared by Cal Land Engineering and included as Appendix C.

a) Would the project 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.

No Impact. The California Department of Mines and Geology has not identified the project site as an Alquist–Priolo Earthquake Fault Zone (DOC 1999). The City is located in an area considered to be seismically active, similar to most of Southern California. However, surface faulting does not occur near the project site or surrounding area, and the Geotechnical Engineering Investigation (Appendix C) prepared for the proposed project determined that there are no known active fault crossings on the site. The nearest known active regional fault is the Newport Inglewood Connected Fault zone, which is located approximately 3 miles from the project site. Therefore, no impacts associated with fault rupture would occur.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. Like most of Southern California, the project site is located within a seismically active area. Numerous faults considered active or potentially active have been mapped in Southern California, including in the vicinity of the City. Thus, the proposed project's future residents and their visitors could be exposed to strong seismic ground shaking in the event of an earthquake.

According to the City's General Plan, the Newport–Inglewood, Whittier, Santa Monica, and Palos Verdes Faults are the active faults most likely to cause high ground accelerations in the City. The San Andreas Fault has a high probability of generating a maximum credible earthquake within California, with a magnitude of 7.5 to 8.0 (City of Carson 2004). Detectible ground shaking caused by one of these faults could cause strong seismic shaking at the project site. As such, the City has identified goals and policies to ensure compliance with the International Building Code. Standards set forth in the International Building Code ensure seismic safety pursuant to the City's Department of Building and Safety.

Appropriate measures to minimize the effects of earthquakes and other geotechnical hazards are included in the California Building Code, with specific provisions pertaining to seismic load and design. The California Building Code has been adopted by the City as

the Building Code of the City of Carson, pursuant of Section 8100 of the City's Municipal Code (City of Carson 2017a). Design and construction of the proposed project in accordance with the California Building Code would minimize the adverse effects of strong ground shaking to the greatest degree feasible. Therefore, based on compliance with applicable local and state requirements related to seismic hazards, impacts associated with strong seismic ground shaking would be less than significant impact.

iii) Seismic-related ground failure, including liquefaction?

Less-Than-Significant Impact. Soil liquefaction is a seismically induced form of ground failure that has been a major cause of earthquake damage in Southern California. Liquefaction is a process by which water-saturated granular soils transform from a solid to a liquid state because of a sudden shock or strain, such as an earthquake. The Newport–Inglewood Fault zone is a potential source of ground stress, and liquefaction could occur in the City if the groundwater table is high enough during an earthquake. Due to the existing alluvial and former slough areas within the City, there are areas with the potential for occurrence of liquefaction (City of Carson 2004).

According the Exhibit SAF-4 in the City's General Plan Safety Element, the project site is located outside an area susceptible to liquefaction (City of Carson 2004). In addition, the Geotechnical Engineering Investigation (Appendix C) concluded that the site is not location in a liquefaction area. As such, it is unlikely that the project site would expose people or structures to liquefaction. Therefore, impacts associated with liquefaction would be less than significant.

iv) Landslides?

No Impact. The project site and surrounding area are relatively flat and lack any hillsides or topographic features typically susceptible to landslides. According the City's General Plan EIR, the City does not contain any known areas where landslide movement has the potential to occur (City of Carson 2002). As such, the proposed project would not expose people or structures to risk of landslides. Therefore, no impacts associated with landslide would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Short-Term Construction Impacts

Less-Than-Significant Impact. The proposed project would involve earthwork and other construction activities that would disturb surface soils and temporarily leave exposed soil

on the ground's surface. Common causes of soil erosion from construction sites include stormwater, wind, and soil being tracked off site by vehicles. To help curb erosion, project construction activities would comply with all applicable federal, state, and local regulations for erosion control. The project would be required to comply with standard regulations, including SCAQMD Rules 402 and 403, which would reduce construction erosion impacts. Rule 402 requires that dust suppression techniques be implemented to prevent dust and soil erosion from creating a nuisance off site (SCAQMD 1976). Rule 403 requires that fugitive dust be controlled with best available control measures so that it does not remain visible in the atmosphere beyond the property line of the emissions source (SCAQMD 2005).

Since project construction activities would disturb 1 or more acres, the project must adhere to the provisions of the NPDES Construction General Permit. Construction activities subject to this permit include clearing, grading, and ground disturbances such as stockpiling and excavating. The Construction General Permit requires implementation of a storm water pollution prevention plan, which would include construction features for the proposed project (i.e., BMPs) designed to prevent erosion and protect the quality of stormwater runoff. Sediment-control BMPs may include stabilized construction entrances, straw wattles on earthen embankments, sediment filters on existing inlets, or the equivalent. Therefore, short-term construction impacts associated with soil erosion and topsoil loss would be less than significant.

Long-Term Operational Impacts

Less-Than-Significant Impact. Once the project is operational, the project site would be improved with condominium units and associated on-site improvements such as parking and pedestrian and landscape areas. Collectively, these on-site areas would reduce the potential for soil erosion and topsoil loss. The structural and paved improvements would generally be impervious areas lacking any exposed soils. The landscape areas, although pervious, would contain ornamental vegetation that would help stabilize and retain surface soils on the project site. Therefore, long-term operational impacts associated with soil erosion and topsoil loss would be less than significant.

c) Would the project 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. As previously discussed in Section 3.6(a)(iii), there are areas within the City with the potential for occurrence of liquefaction. According to

Exhibit SAF-4 of the City's General Plan Safety Element, the project site is not located in an area with potential for seismic hazards (City of Carson 2004). In addition, compliance with design requirements set forth in the current International Building Code would reduce potential impacts from unstable geologic units or expansive soils. Therefore, impacts associated with unstable geologic units or soils would be less than significant.

d) Would the project 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?

Less-Than-Significant Impact. Expansive soils are characterized by their potential shrink/swell behavior. Shrink/swell is the change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the cycle of wetting and drying. Clay minerals are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near-surface soils, the higher the potential for substantial expansion.

According to the City's General Plan EIR, the City of Carson is underlain by variations of alluvial soil, ranging from sandy to clay loam soil types. The Ramona–Placentia sandy loam in the City does present high potential for shrink/swell behavior (City of Carson 2002). However, the U.S. Department of Agriculture's Web Soil Survey does not identify the project site or surrounding area as containing expansive soil. The project site is classified as Urban land–Haploxeralfs complex, which is described as discontinuous human-transported material over old alluvium (USDA 2017). Therefore, impacts associated with expansive soils would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The proposed project would connect to the existing Los Angeles County Department of Public Works Consolidated Sewer Maintenance District, which maintains local sewer lines. As such, the proposed project would not require septic tanks or alternative wastewater disposal systems. Therefore, no impacts associated with the septic systems would occur.

3.7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The following analysis is based on the CalEEMod air emissions modeling conducted by Dudek and included as Appendix A.

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-Than-Significant Impact. Greenhouse gases (GHGs) are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2E).[3]

The California Natural Resources Agency adopted amendments to the CEQA Guidelines on December 30, 2009, which became effective on March 18, 2010. With respect to GHG emissions, the amended CEQA Guidelines state in Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an

[3] The CO_2E for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons of CO_2E = (metric tons of a GHG) × (GWP of the GHG). For example, the GWP for CH_4 is 21. This means that emissions of 1 metric ton of CH_4 are equivalent to emissions of 21 metric tons of CO_2.

agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15000 et seq.). Section 15064.4(b) provides that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment (14 CCR 15064.4[b]):

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7[c]) (CNRA 2009). The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA.

The SCAQMD has not adopted recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects. In October 2008, the SCAQMD presented to its governing board the Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold (SCAQMD 2008). In December 2008, this guidance document was adopted by the SCAQMD governing board (SCAQMD 2018). In addition, the SCAQMD's proposed interim GHG significance thresholds are a recommendation only for lead agencies and not a mandatory requirement, and the GHG significance thresholds may be used at the discretion of the local lead agency. The SCAQMD can apply these thresholds for projects where it is the lead agency; however, the City has authority on thresholds as the lead agency for this project. This document explored various approaches for establishing a significance threshold for GHG emissions. Among the concepts discussed, the document considered a "de minimis," or screening, threshold to "identify

small projects that would not likely contribute to significant cumulative GHG impacts" (SCAQMD 2008). As further explained in the guidance document, "projects with GHG emissions less than the screening level are considered to be small projects, that is, they would not likely be considered cumulatively considerable" (SCAQMD 2008). The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. The SCAQMD proposed three tiers of compliance that may lead to a determination that impacts are less than significant:

1. Projects with GHGs within budgets set out in approved regional plans to be developed under the Senate Bill 375 process
2. Projects with GHG emissions that are below designated quantitative thresholds:
    i. Industrial projects with an incremental GHG emissions increase that falls below (or is mitigated to be less than) 10,000 metric tons (MT) CO_2E per year.
    ii. Commercial and residential projects with an incremental GHG emissions increase that falls below (or is mitigated to be less than) 3,000 MT CO_2E per year, provided that such projects also meet energy efficiency and water conservation performance targets that have yet to be developed.
3. Projects that purchase GHG offsets that, either alone or in combination with one of the three tiers mentioned above, achieve the target significance screening level.

From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The most recent working group meeting, held on September 28, 2010 (SCAQMD 2010), proposed two options lead agencies can select from to screen thresholds of significance for GHG emissions in residential and commercial projects, and proposed to expand the industrial threshold to other lead agency industrial projects. Option 1 proposes a threshold of 3,000 MT CO_2E per year for all residential and commercial projects, and Option 2 proposes a threshold value by land-use type where the numeric threshold is 3,500 MT CO_2E per year for residential projects, 1,400 MT CO_2E per year for commercial projects, and 3,000 MT CO_2E per year for mixed-use projects (SCAQMD 2010).

Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2009). Although the SCAQMD has not formally adopted the thresholds described above, and the City, as lead agency, has not adopted the recommended SCAQMD thresholds, for the

purpose of this analysis, the 3,500 MT CO_2E per year operational threshold for residential projects is used to analyze the significance of GHG impacts under CEQA.

Construction of the proposed project would result in GHG emissions that are primarily associated with use of off-road construction equipment and on-road construction and worker vehicles. CalEEMod was used to calculate the annual GHG emissions based on the same construction assumptions used for the air quality analysis, as described in Section 3.3, Air Quality. Table 4 provides estimated construction GHG emissions for the proposed project from years 2018 and 2019.

Table 4
Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2E
	Metric Tons per Year			
2018	180.41	0.03	0.00	181.21
2019	96.57	0.02	0.00	96.97

Notes: See Appendix A for detailed results.
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E = carbon dioxide equivalent

As can be deduced by the numbers shown in Table 4, the estimated total GHG emissions during construction would be approximately 278 MT CO_2E. GHG emissions associated with construction of the proposed project are summed and amortized over a 30-year "project life" and then included with the operational emissions provided in Table 5.

Operation of the proposed project would result in GHG emissions from vehicular traffic, area sources (natural gas combustion, landscaping), electrical generation, water supply, and solid waste. Annual GHG emissions from these sources were estimated using CalEEMod. Annual electricity emissions were estimated using the emissions factors for Southern California Edison, which would provide electricity for the proposed project.

The estimated operational GHG emissions from electricity usage, motor vehicles, solid waste generation, water consumption, and wastewater treatment associated with the proposed project were estimated, as provided in Table 5. Operational factors are the default values from CalEEMod. Estimated amortized construction emissions of 9 MT CO_2E per year over 30 years were added to the total operational emissions.

Table 5
Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2E
	Metric Tons per Year			
Area Sources (Landscaping, Consumer Products)	10.47	0.01	<0.01	10.81
Energy (Electricity and Natural Gas)	100.19	<0.01	<0.01	100.63
Mobile Sources	272.01	0.01	0.00	272.35
Solid Waste	2.99	0.18	0.00	7.40
Water and Wastewater	14.06	0.07	<0.01	16.29
Combined Operational Emissions	**3.99.72**	**0.27**	**<0.01**	**407.48**
Amortized Construction Emissions	—	—	—	9.27
Operational Emissions Plus Amortized Construction Emissions	—	—	—	**416.75**

Note: See Appendix A for detailed results.
CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2E = carbon dioxide equivalent

As provided in Table 5, the proposed project would result in GHG emissions of approximately 417 MT CO_2E per year, which includes amortized construction emissions. As such, annual operational GHG emissions, including amortized construction emissions, would not exceed the SCAQMD threshold of 3,500 MT CO_2E per year for residential development. Therefore, both short-term construction and long-term operational impacts associated with project-related GHG emissions would be less than significant.

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

Less-Than-Significant Impact

Consistency with SCAG 2016–2040 RTP/SCS

At the regional level, SCAG has adopted the 2016 RTP/SCS for the purpose of reducing GHG emissions attributable to passenger vehicles in Los Angeles County and other areas of Southern California. Although the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SCAG's member jurisdictions, the RTP/SCS is a relevant regional reference document for purposes of evaluating the connection of land use and transportation patterns and the corresponding GHG emissions. The RTP/SCS is not directly applicable to the proposed project because the underlying purpose of the RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development (SCAG 2016), although the proposed project would support the goals and policies of the RTP/SCS. As discussed in Section 3.3, Air Quality,

the proposed project would not introduce substantial population or traffic above that anticipated under the City's General Plan because the proposed project would not conflict with the land use designation of the project site after adoption of the proposed General Plan amendment. Therefore, the proposed project would be consistent with the regional growth forecasts in the RTP/SCS.

Consistency with Executive Order S-3-05 and Senate Bill 32

Executive Order S-3-05. This executive order establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Senate Bill 32. This bill establishes a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, will ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030.

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the Scoping Plan First Update that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by Assembly Bill [AB] 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the Scoping Plan First Update states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, Executive Order B-30-15, and Executive Order S-3-05. This is confirmed in the 2017 Climate Change Scoping Plan Update, which states the following (CARB 2017):

> The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasibility and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, Senate Bill [SB] 32, and AB 197.

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and Executive Order S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for those future year analyses. However, the proposed project would not interfere with implementation of any of the previously described GHG reduction goals for 2030 or 2050 because the proposed project's GHG emissions would cease after construction activities have been completed. For operational impacts, the proposed project would result in minimal GHG emissions from the residential units. Thus, the proposed project would not conflict with the state's trajectory toward future GHG reductions, and the proposed project's impacts on GHG emissions in the 2030 and 2050 horizon years would be less than significant.

Based on the preceding considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Therefore, impacts associated with applicable GHG plans, policies, and regulations would be less than significant.

3.8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Short-Term Construction Impacts

Less-Than-Significant Impact. During construction of the proposed project, potentially hazardous materials would likely be handled on the project site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products to operate and maintain construction equipment. Handling these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the proposed project.

Although these materials would likely be stored on the project site, storage would be required to comply with the guidelines set forth by each product's manufacturer, as well as in accordance with all applicable federal, state, and local regulations pertaining to the storage of hazardous materials. Consistent with federal, state, and local requirements, the transport of hazardous materials to and from the project site would be conducted by a licensed contractor. Any handling, transport, use, or disposal of hazardous materials would comply with all relevant federal, state, and local agencies and regulations, including the EPA, the California Department of Toxic Substances Control, the California Occupational Safety and Health Administration (OSHA), Caltrans, the Resource Conservation and Recovery Act, the SCAQMD, and the Los Angeles County Certified Unified Program Agency. Therefore, short-term construction impacts related to the transport, use, or disposal of hazardous materials would be less than significant.

Long-Term Operational Impacts

Less-Than-Significant Impact. As a residential land use, potentially hazardous materials associated with operation of the proposed project would include those materials typically associated with cleaning and maintenance activities. Although these materials would vary, they would generally include household cleaning products, solvents, paints, fertilizers, and herbicides and pesticides. Many of these materials are considered household hazardous wastes, common wastes, and universal wastes by the EPA, which considers these types of wastes common to businesses and households and to pose a lower risk to people and the environment than other hazardous wastes when properly handled, transported, used, and disposed of (EPA 2017). Federal, state, and local regulations typically allow these types of wastes to be handled and disposed of under less-stringent standards than other hazardous wastes, and many of these wastes do not need to be managed as hazardous waste.

In addition, any potentially hazardous material handled on the project site would be limited in quantity and concentration, consistent with other similar residential uses located in the City, and any handling, transport, use, and disposal of such material would comply with applicable federal, state, and local agencies and regulations. In addition, as mandated by OSHA, all hazardous materials stored on the project site would be accompanied by a Materials Safety Data Sheet, which would inform on-site personnel and residents of the necessary remediation procedures in the case of accidental release (OSHA 2017). Therefore, long-term operational impacts associated with the use, transport, and disposal of hazardous materials would be less than significant.

b) Would the project 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?

Short-Term Construction Impacts

Less-Than-Significant Impact. As discussed in Section 3.8(a), during construction of the proposed project, potentially hazardous materials would likely be handled on the project site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products to operate and maintain construction equipment. Handling these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the proposed project.

The Los Angeles County Fire Department regulates the use and storage of hazardous substances, and responds to hazardous materials release incidents in the City. In the event that services are required, the Health Hazardous Materials Division would dispatch members to ensure any spill or unauthorized releases would be properly removed, handled, transported, and disposed (County of Los Angeles Fire Department 2017). In addition, the City's General Plan policies would further reduce the potential for release of hazardous materials into the environment (City of Carson 2004). Therefore, short-term construction impacts related to the accidental release of hazardous materials would be less than significant.

Long-Term Operational Impacts

Less-Than-Significant Impact. As a residential land use, potentially hazardous materials associated with operation of the proposed project would include those materials typically associated with cleaning and maintenance activities. Although these materials would vary, they would generally include household cleaning products, solvents, paints, fertilizers, and herbicides and pesticides. Many of these materials are considered household hazardous wastes, common wastes, and universal wastes by the EPA, which considers these types of wastes common to businesses and households and to pose a lower risk to people and the environment than other hazardous wastes when properly handled, transported, used, and disposed of (EPA 2017). Federal, state, and local regulations typically allow these types of wastes to be handled and disposed of under less-stringent standards than other hazardous wastes, and many of these wastes do not need to be managed as hazardous waste.

In addition, any potentially hazardous materials handled on the project site would be limited in quantity and concentration, consistent with other similar residential uses located in the City, and any handling, transport, use, and disposal of such material would comply with applicable federal, state, and local agencies and regulations. In addition, as mandated by OSHA, all hazardous materials stored on the project site would be accompanied by a Materials Safety Data Sheet, which would inform on-site personnel and residents of the necessary remediation procedures in the case of accidental release (OSHA 2017). Therefore, long-term operational impacts associated with the use, transport, and disposal of hazardous materials would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less-Than-Significant Impact. Land uses and activities typically associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste include heavy commercial, manufacturing, research, and industrial uses. The proposed project would not include any such uses or activities.

In addition, as a residential land use, potentially hazardous materials associated with operation of the proposed project would include those materials typically associated with cleaning and maintenance activities, including household hazardous wastes, common wastes, and universal wastes. Such types of waste are considered common to businesses and households, and pose a lower risk to people and the environment than other hazardous wastes when properly handled, transported, used, and disposed of (EPA 2017). Further, any potentially hazardous materials handled on the project site would be limited in quantity and concentration, consistent with other similar residential uses located in the City, and any handling, transport, use, and disposal of such material would comply with applicable federal, state, and local agencies and regulations.

As such, even though the project site is located approximately 0.1 miles northwest of Stephen M. White Middle School (22102 Figueroa Street), the proposed project would not emit hazardous emissions or include handling of hazardous or acutely hazardous materials, substances, or wastes. Therefore, impacts associated with the emitting or handling of hazardous materials within 0.25 miles of a school would be less than significant.

d) Would the project be located on a site that 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 Hazardous Waste and Substances Sites (Cortese List) is a planning document providing information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California EPA to develop, at least annually, an updated Cortese List. The Department of Toxic Substances Control is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous materials release information for the Cortese List (DTSC 2017). The project site was not identified on the Cortese List or any other hazardous materials sites (Geotracker 2017). Therefore, no impacts associated with inclusion on the Cortese List would occur.

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?

No Impact. The closest public airports to the project site are Zamperini Field (formerly Torrance Municipal Airport), which is located approximately 3.5 miles southeast of the project site, and the Compton/Woodley Airport, which is located approximately 5 miles northeast of the project site. According to the Los Angeles County Airport Land Use Commission, the proposed project is not located within the airport land use plans for these nearby airports (ALUC 2017). The project site is located outside of any airport impact zones, and as such, the proposed project would not result in safety hazard for people residing in the project area. Therefore, no impacts associated with public airport hazards would occur.

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?

Less-Than-Significant Impact. The project site is located approximately 1.9 miles southwest of the Goodyear Blimp Base Airport (19200 South Main Street) and approximately 1.4 miles from the Carson Sheriff Station Heliport (21356 South Avalon Boulevard). However, the height of the proposed project would not interfere with flight paths or blimp or heliport operations. As such, the proposed project would not result in a safety hazard for people working or residing in or around the project site related to a private air strip. Therefore, impacts would be less than significant.

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. Exhibit SAF-5 of the City's General Plan Safety Element shows the location of collection points and evacuation routes for the City (City of Carson 2004). The proposed project would be required to comply with the City's Emergency Plan, adopted pursuant of Section 3707 of the Municipal Code (City of Carson 2017a).

In addition, the project would be provided emergency access routes along Figueroa Street and Carson Street. The project site is also provided regional access via I-110 and I-405. Due to this local and regional connectivity, in the unlikely event of an emergency, the project-adjacent roadway facilities would be expected to serve as emergency evacuation routes for first responders and residents. The proposed project would not adversely affect operations on the local or regional circulation system, and as such, would not impact the use of these facilities as emergency response routes. Therefore, impacts associated with an emergency response plan or emergency evacuation plan would be less than significant.

h) Would the project 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. According to Figure 12.5 of the County of Los Angeles General Plan Safety Element, the City of Carson and the project site are not located in a Fire Hazard Area (County of Los Angeles 2015). The project site is surrounded by existing development in an urbanized portion of the City away from any urban-wildland interface. Therefore, no impacts associated with wildland fire hazards would occur.

3.9 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

The following analysis is based on the Hydraulic and Hydrology Report prepared by Apple Engineering Group and included as Appendix D.

a) Would the project violate any water quality standards or waste discharge requirements?

Short-Term Construction Impact

Less-Than-Significant Impact. Construction of the proposed project would include earthwork activities that could potentially result in erosion and sedimentation, which could subsequently degrade downstream receiving waters and violate water quality standards. Stormwater runoff during the construction phase may contain silt and debris, resulting in a short-term increase in the sediment load of the municipal storm drain system. Substances such as oils, fuels, paints, and solvents may be inadvertently spilled on the project site and subsequently conveyed via stormwater to nearby drainages, watersheds, and groundwater.

The proposed project would be subject to the municipal NPDES permit, which requires measures to prohibit non-stormwater discharges into the storm sewer and control the discharge of stormwater to the maximum extent practical. These measures include BMPs, control techniques, and system design methods. The Los Angeles Regional Water Quality Control Board (RWQCB) issues the NPDES permit, the municipal separate storm sewer system (MS4) permit. The City of Carson is under the jurisdiction of the Los Angeles RWQCB.

The NPDES permit requires implementation of a Storm Water Quality Management Program, which specifies guidelines to control, reduce, and monitor discharges of waste to storm drains. As such, through compliance with the water quality standards set forth in the NPDES permit, the wastewater generated during construction of the proposed project would not adversely affect water quality. Therefore, short-term construction impacts associated with water quality would be less than significant.

Long-Term Operational Impacts

Less-Than-Significant Impact. Under existing conditions, the storm drainage pattern is from the northwest corner of the project site to the southeast corner of the project site. The proposed stormwater drainage system would incorporate catch basins and PVC drainage pipes to drain from the northwest corner of project site to the southeast corner of the project site and onto the street through the proposed parkway drain.

The proposed project would use dry wells to meet the on-site retention requirements of the City's Low-Impact Development (LID) Ordinance (Ordinance No. 14-1537) of the City's Municipal Code, and prevent pollutants from being discharged off site. The LID

Ordinance is designed to reduce runoff from impervious surfaces, including new development. A geotechnical report was performed to ensure the soil conditions were satisfactory for proper operation of a dry well. Based on the investigation, it was concluded that the proposed construction of dry wells was feasible (Appendix D).

Further, the City meets the requirements of the MS4 permit through implementation of the Los Angeles County Development Planning Program, which developed the Standard Urban Stormwater Mitigation Plan (SUSMP). The SUSMP specifies the minimum required BMPs that must be used for a designated project. As such, incorporation of appropriate SUSMP requirements into the development plants would reduce operational impacts associated with water quality standards. Therefore, long-term impacts associated with associated with water quality would be less than significant.

b) Would the project 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 (i.e., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Groundwater Supplies

Less-Than-Significant Impact. The proposed project would involve implementation of 32 residential units, which would increase demand for water supply on the project site. The project site would receive its water supply from the Dominguez District of California Water Service (Cal Water). Based on the 2015 Urban Water Management Plan (UWMP), the Dominguez District receives its water from 17% groundwater, 15% recycled water, and 68% purchased water. Purchased water is delivered from four Metropolitan Water District distribution feeders (Cal Water 2016).

Cal Water uses local groundwater for the City from the West Coast Basin and the Central Basin. The Water Replenishment District of Southern California (WRD) plays a role in the overall water resource management in southern Los Angeles County. As a result of the WRD involvement, each party receiving water from these basins has an established allowable pumping allocation. The Dominguez District has an allowable pumping allocation of 6,480 acre-feet per year for the Central Basin, and 10,417 acre-feet per year for the West Coast Basin. The WRD is responsible for the ensuring a reliable supply of high-quality groundwater.

Based on 2015 potable water use, residential customers accounted for approximately 88% of water services, but only 37% of the use. In particular multi-family services accounted for only 2.3% of water use (2,173 acre-feet) in the Dominguez District. Table 4-2 of the Cal Water UWMP indicates that by 2020, multi-family use demands would increase to 7.5% of water use, which would be 2,365 acre-feet. To address the increase in water demand, the 2015 UWMP identifies Cal Water's steps toward supporting the WRD with respect to managing groundwater. In addition, the Sustainability Groundwater Management Act provides financial and enforcement tools to ensure that existing and future development do not adversely impact groundwater supplies (Cal Water 2016).

The proposed project would rely on groundwater supplies from the Central Basin and West Coast Basin, and WRD actively manages water resources in the area to ensure that a reliable supply of groundwater is available. In addition, Cal Water recognizes the goals of WRD and legislation to protect groundwater supplies. Therefore, impacts associated with groundwater supplies would be less than significant.

Groundwater Recharge

Less-Than-Significant Impact. Under the existing conditions, the project site is entirely developed and consists primarily of paved and otherwise impervious surfaces. Development of the proposed project would increase the impervious area from 12,294 square feet to 30,949 square feet. However, the existing site has been cleared and is generally devoid of vegetation other than patches of turf. Thus, without the benefit of natural topographical variations or extensive amounts of vegetation, stormwater runoff sheet flows off site without being treated or retained. Therefore, the site does not serve as an important source of groundwater recharge.

Under the proposed conditions, the project site would include an engineered storm drain system. The proposed project would involve construction of a catch basin, parkway drain, PVC drainage pipes, and a dry well to capture and divert stormwater in accordance with the City's LID Ordinance and other local, state, and federal requirements. The new stormwater drainage system, along with the new landscaped areas, would encourage the retention of stormwater to the greatest extent feasible. Therefore, impacts associated with groundwater recharge would be less than significant.

c) Would the project 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?

Less-Than-Significant Impact. Under existing conditions, the storm drainage pattern is from the northwest corner of the project site to the southeast corner of the project site. The proposed stormwater drainage system would incorporate catch basins and PVC drainage pipes to drain from the northwest corner of project site to the southeast corner of the project site and onto the street through the proposed parkway drain.

The proposed project would use dry wells to meet the on-site retention requirements of the City's LID Ordinance and prevent pollutants from being discharged off site. The LID Ordinance is designed to reduce runoff from impervious surfaces, including new development. The proposed project would be required to comply with existing local, state, and federal regulations related to drainage that mandates that post-project stormwater runoff is equal to or less than pre-project runoff. Therefore, impacts associated with altering the existing drainage pattern and erosion/siltation would be less than significant.

d) Would the project 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. As discussed in Section 3.8(c), the proposed project would increase the amount of impervious surfaces on the project site. Therefore, the proposed project would incorporate on-site improvements to reduce the rate and amount of surface runoff. In addition, the proposed project would comply with existing local, state, and federal regulations related to drainage and runoff. Therefore, impacts associated with altering the existing drainage pattern and flooding would be less than significant.

e) Would the project 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. As discussed in Section 3.8(a), under existing conditions, the storm drainage pattern is from the northwest corner of the project site to the southeast corner of the project site. The proposed stormwater drainage system would incorporate catch basins and PVC drainage pipes to drain from the northwest corner of project site to

the southeast corner of the project site and onto the street through the proposed parkway drain. The new engineered storm drain system was designed to not impede the performance of the existing municipal stormwater system, and would not exceed the capacity of the existing stormwater drainage systems. In addition, the proposed project would use dry wells to meet the on-site retention requirements of the LID Ordinance and prevent pollutants from being discharged off site. Therefore, impacts associated with stormwater drainage system capacity would be less than significant.

f) Would the project otherwise substantially degrade water quality?

Short-Term Construction Impacts

Less-Than-Significant Impact. The proposed project would be subject to the municipal NPDES permit, which requires measures to prohibit non-stormwater discharges into the storm sewer and control the discharge of stormwater to the maximum extent practical. These measures include BMPs, control techniques, and system design methods.

The NPDES permit requires implementation of a Storm Water Quality Management Program that specifies guidelines to control, reduce, and monitor discharges of waste to storm drains. Thus, due to compliance with water quality standards set forth in the NPDES permit, wastewater generated during construction of the proposed project would not adversely affect water quality. Therefore, short-term construction impacts associated with water quality would be less than significant.

Long-Term Operational Impacts

Less-Than-Significant Impact. Under the proposed conditions, the project site would include an engineered storm drain system. The proposed project would involve construction of a catch basin, parkway drain, PVC drainage pipes, and a dry well to capture and divert stormwater in accordance with the City's LID Ordinance and other local, state, and federal requirements. Therefore, impacts associated with water quality degradation would be less than significant.

g) Would the project 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?

No Impact. According to the Federal Emergency Management Agency's Flood Hazard Map (Flood Insurance Rate Map No. 06037C1935F), the project site is located outside of Flood Hazard Zone A (FEMA 2008). The project site is within Other Areas Zone X, which

is determined to be outside of the 0.2% annual chance of a flood event. Therefore, no impacts associated with placing housing within a 100-year flood hazard area would occur.

h) Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

No Impact. As previously discussed in Section 3.9(g), the proposed project is not located in the 100-year flood hazard zone. The project site is within Other Areas Zone X, which is determined to be outside of the 0.2% annual chance of flood event. Therefore, no impacts associated with impeding or redirecting flood flows would occur.

i) Would the project 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 of Carson's Multihazard Functional Plan, the City is not subject to inundation associated with dam failure (City of Carson 2002). There are no levees or dams adjacent to or within the immediate project area. Therefore, no impacts associated with flooding or inundation would occur.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The proposed project would not be susceptible to seiche, tsunami, or mudflow. Seiche is generally associated with oscillation of enclosed bodies of water typically caused by ground shaking associated with a seismic event; however, the project site is not located near an enclosed body of water. Flooding from tsunami conditions is not expected, since the project site is located approximately 6 miles from the Pacific Ocean. In addition, the project site and surrounding area are developed, and generally lack the characteristics typically associated with mudflows. Therefore, no impacts associated with seiche, tsunami, or mudflow would occur.

3.10 Land Use and Planning

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	**LAND USE AND PLANNING** – Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) Would the project physically divide an established community?

No Impact. The physical division of an established community typically refers to the construction of a linear feature (such as a major highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and outlying area. Under the existing condition, the project site is not used as a connection between established communities. Instead, connectivity within the area surrounding the project site is facilitated via local roadways and pedestrian sidewalks. Therefore, no impacts associated with physical division of an established community would occur.

b) Would the project 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?

Less-Than-Significant Impact. The current General Plan land use designation and zoning classification of the project site are High Density Residential (13–25 dwelling units per acre) and Residential Multifamily–Medium Density up to 18 units per acre with Design Overlay (RM-18-D) (City of Carson 2004). If approved, the proposed project would include a Specific Plan (SP 15-2017) approval to change from High Density Residential to Urban Residential, and a Design Overlay Review (DOR No. 1661-17) and a Zone Change Case (ZCC 178-17) to change from RM-18-D to Birch.

The City regulates the design of the built environment through the Design Overlay Zone. The proposed project request for a Design Overlay Review and a Zone Change Case from RM-18-D to Birch would allow for a special site plan that would still require review by the City.

The City uses the Specific Plan process to establish the type, location, and character of development to take place on a property (City of Carson 2002). Although a Specific Plan allows flexibility of development in regards to land use and design concepts, the overall design guidelines are required to follow City standards. The proposed Specific Plan (SP 15-2017) approval would ensure consistency between the Birch Specific Plan and the City of Carson General Plan, and the General Plan would be amended concurrent with the adoption of the Birch Specific Plan. The amendment would result in the General Plan Land Use Designation of Urban Residential to replace the existing High Density Residential.

According to Section 4.3, Land Use Designations, of the Carson General Plan (City of Carson 2004), the intent of the Urban Residential designation is to provide for multiple dwelling units; up to 65 dwelling units per acre are allowed. This land use category requires implementation using a Specific Plan zone. Thus, approval to change from RM-18-D to Birch, which would be considered the Birch Specific Plan Zone, would be consistent with the City's General Plan requirements.

By complying with these development standards, the proposed project would be constructed consistently with the intent and purpose of the Design Overlay Zone. Through the plan check process, the City would thoroughly review all plans for the proposed project to ensure compliance with all applicable development standards set forth in the Carson Municipal Code and other relevant land use plans, policies, and regulations. Therefore, impacts associated with applicable land use plans, policies, and regulations would be less than significant.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The project site is not located within any habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservations plan area. Therefore, no impacts associated with an adopted conservation plan would occur.

3.11 Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a) Would the project 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. According to the City's General Plan EIR, there are no known mineral resources located within the City (City of Carson 2002). Therefore, no impacts associated with loss of availability of a known mineral resource would occur.

b) Would the project 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. As previously discussed in Section 3.11(a), there are no known mineral resources located within the City. No mineral extraction activities occur on or adjacent to the project site, and no known mineral resources are present on site. Therefore, no impacts associated with the loss of availability of a locally important mineral resource recovery site would occur.

3.12 Noise

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The following analysis is based on the noise modeling conducted by Dudek and included as Appendix E.

Noise Background

The following paragraphs provide a brief background on the fundamentals of environmental acoustics and is helpful in understanding how humans perceive various sound levels. Generally, federal and state agencies regulate mobile noise sources by establishing and enforcing noise standards on vehicles. Local agencies generally regulate stationary noise sources and construction activities to protect neighboring land uses and the public's health and welfare. In this regard, residences are considered a noise-sensitive land use. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise associated with roadway sources typically attenuates (is reduced) at a rate of 3 A-weighted decibels (dBA) to 4.5 dBA per doubling of distance between the source and receptor. The rate depends on the ground surface and the number and type of objects between the noise source and the receiver. With hard surfaces, transportation noise has an attenuation rate of 3 dBA per doubling of distance. With soft surfaces, such as loose dirt or vegetated terrain, transportation noise has an attenuation rate of approximately 4.5 dBA per doubling of

distance. Noise generated by stationary sources typically attenuates at a rate of approximately 6 dBA to 7.5 dBA per doubling of distance, depending on whether hard surface or soft surface conditions exist adjacent to the area.

Although extremely loud noises can cause temporary or permanent damage, the primary environmental impact of noise is annoyance. The objectionable characteristic of noise often refers to its loudness. Loudness represents the intensity of the sound wave, or the amplitude of the sound wave height measured in decibels (dB). Decibels are calculated on a logarithmic scale; thus, a 10 dB increase represents a 10-fold increase in acoustic energy or intensity, and a 20 dB increase represents a 100-fold increase in intensity. Decibels are the preferred measurement of environmental sound because of the direct relationship between a sound's intensity and the subjective "noisiness" of it. The A-weighted decibel system (dBA) is a convenient sound measurement technique that weights selected frequencies based on how well humans can perceive them.

The range of human hearing spans from the minimal threshold of hearing (approximately 3 dBA) to that level of noise that is past the threshold of pain (approximately 120 dBA). In general, human sound perception is such that a change in sound level of 3 dB in a normal setting (i.e., outdoors or in a structure, but not in an acoustics laboratory without background noise levels) is just noticeable, and a change of 5 dB is clearly noticeable. A change of 10 dB is perceived as a doubling (or halving) of sound level. Noise levels are generally considered low when they are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss if exposure is sustained.

Ambient environmental noise levels can be characterized by several different descriptors. Energy equivalent or energy average sound level (L_{EQ}) describes the average or mean noise level over a specified period of time. L_{EQ} provides a useful measure of the impact of fluctuating noise levels on sensitive receptors over a period of time. Other descriptors of noise incorporate a weighting system that accounts for a human's susceptibility to noise irritations at night. Community noise equivalent level (CNEL) is a measure of cumulative noise exposure over a 24-hour period, with a 5 dB penalty added to evening hours (7 p.m. to 10 p.m.) and a 10 dB penalty added to night hours (10 p.m. to 7 a.m.). Since CNEL is a 24-hour average noise level, an area could have sporadic loud noise levels above 65 dBA that average lower over a 24-hour period.

City of Carson General Plan

Applicable policies and standards governing environmental noise in the City are contained in the City of Carson General Plan Noise Element (City of Carson 2004). The Noise Element contains noise and land use compatibility standards for general planning/land use decisions. Table 6,

Noise Element Land Use Compatibility Noise Exposure Limits, indicates standards and criteria regarding acceptable noise level limits for various land uses in the City.

Table 6
Noise Element Land Use Compatibility Noise Exposure Limits

Land Use Category	Uses	Interior[1,3] (dBA CNEL)	Exterior[2,4] (dBA CNEL)
Residential	Single Family Duplex, Multiple Family	45–55	50–60
	Mobile Home	45	65
Commercial, Industrial, Institutional	Hotel, Motel, Transient Lodging	45	N/A
	Commercial Retail, Bank, Restaurant	55	N/A
	Office Building, Research and Development, Professional Offices, City Office Building	50	N/A
	Amphitheater, Concert Hall, Auditorium, Meeting Hall	45	N/A
	Gymnasium (Multipurpose)	50	N/A
	Sports Club	55	N/A
	Manufacturing, Warehousing, Wholesale, Utilities	65	N/A
	Movie Theater	45	N/A
Institutional	Hospital, School Classroom	45	65
	Church, Library	45	N/A
Open Space	Park	N/A	65

Source: City of Carson 2004

1 Indoor environment includes bedrooms, living area, bathrooms, toilets, closest, corridors.

2 Outdoor environment limited to private yard of single-family, a multi-family private patio or balcony that is served by a means of exit from inside the dwelling (balconies 6 feet deep or less are exempt), mobile home park, park's picnic area, school's playground.

3 Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as of Chapter 12, Section 1205 of International Building Code.

4 Exterior noise levels should be such that interior noise levels will not exceed 45 CNEL.

Carson Municipal Code

Section 4101 (Unnecessary Noises) of Chapter I, Article IV of the Carson Municipal Code prohibits any disturbing, excessive, or offensive noise that causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the community. Sections 4101(i) and 4101(j) of the Carson Municipal Code regulate noise from demolition and construction activities. These sections dictate that non-emergency construction activity (including demolition) and repair work can only occur between 7 a.m. and 6 p.m., Monday through Friday.

The City's Noise Control Ordinance (Section 5500 of the Carson Municipal Code) sets standards for noise levels throughout the City that are applicable to radios, phonographs, loudspeakers and amplifiers, electric motors or engines, animals, motor vehicles, and construction equipment. The

Noise Ordinance also sets maximum limits on interior and exterior noise levels for each noise zone, unless exempted, as shown in Table 7, Noise Ordinance (Municipal Code) Standards. In addition, when construction activities would have a duration greater than 21 days, Section 5502(c) of the Noise Control Ordinance requires that construction activities be conducted in such a manner to ensure that the noise level at an affected single-family residence does not exceed 65 dBA between 7 a.m. and 8 p.m. daily (except for Sundays and legal holidays when construction cannot occur), and 55 dBA between 8 p.m. and 7 a.m. on these same days.

Table 7
Noise Ordinance (Municipal Code) Standards

Noise Zone	Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dBA)	Interior Noise Level (dBA)
I	Noise Sensitive Area	Anytime	45	N/A
II	Residential Properties	10:00 p.m. to 7:00 a.m. (nighttime)	45	N/A
		7:00 a.m. to 10:00 p.m.(daytime)	50	N/A
III	Commercial Properties	10:00 p.m. to 7:00 a.m.	55	N/A
		7:00 a.m. to 10:00 p.m.	60	N/A
IV	Industrial Properties	Anytime	70	N/A
All Zones	Multi-Family	10:00 p.m. to 7:00 a.m.	N/A	40
Open Space	Residential	7:00 a.m. to 10:00 p.m.	N/A	50

Source: City of Carson 2004

Existing Noise Levels

The project site is exposed primarily to traffic noise from I-110, with traffic noise from South Figueroa Street a secondary contributor to the noise environment. According to Caltrans, I-110 currently carries a volume of approximately 208,000 average daily traffic (ADT) (Caltrans 2016); Figueroa carries a current volume of approximately 21,300 ADT (Dudek 2017).

Dudek conducted noise measurements adjacent to I-110 and Figueroa Street in the immediate vicinity of the project site to determine the existing noise level that results from traffic along these roadways. Five short-term noise measurements were conducted on October 31, 2017, along with manual traffic counts. Measurement locations are depicted as ST1 through ST5 in Figure 5, Noise Measurement Locations. Refer to Appendix E for field measurement data.

The short-term noise measurements were made using a calibrated Rion Model NL-52 (S.N. 553896) integrating sound level meter equipped with a Type 2551 0.5-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level

meter meets the current ANSI standard for a Type 1 precision sound level meter. The sound level meter was positioned at a height of approximately 5 feet above the ground. Table 8 provides the measured noise levels and concurrent traffic volumes for the pertinent roadway facilities.

Table 8
Measured Average Traffic Sound Level and Manual Traffic Count Results

Location	Traffic Noise Source	Date	Time	L_{EQ}[1]	Cars	MT[2]	HT[3]	Bus
ST1	Figueroa Street (25 feet to road edge)	10/31/17	12:14 to 12:24 p.m.	63 dB	202	5	3	2
ST2	Figueroa Street (20 feet to centerline)		11:43 to 10:57 a.m.	66 dB	197	6	2	0
ST3	Figueroa Street (35 feet to centerline)		12:28 to 12:38 p.m.	68 dB	210	6	2	2
ST4	Interstate 110		11:56 a.m. to 12:06 p.m.	62 dB	n/a	n/a	n/a	n/a
ST5	Figueroa Street (30 feet to road edge)		11:43 to 11:53 a.m.	69 dB	156	7	5	2

Note: Temperature 81°F, overcast, 3-mile-per-hour southwesterly wind.
1 Equivalent continuous sound level (time-average sound level)
2 Medium trucks
3 Heavy trucks

The Federal Highway Administration's Traffic Noise Model (TNM 2.5) (FHWA 2006) was calibrated first, before using the model to evaluate existing and future noise levels from traffic. The same traffic volume and vehicle composition ratios counted during the noise measurements were used to calibrate the model and verify the input used in the noise model. The modeled existing traffic speed was 65 miles per hour along I-110 and 40 miles per hour along Figueroa Street. The modeled L_{EQ} for ST1 and ST4 are within 2 dB of the measured noise levels. This result generally confirms the assumptions used in the noise model.

A standard urban road vehicle mix of 1% heavy trucks and 2% medium trucks was employed in the model for evaluation of existing and future anticipated noise levels from the adjacent segment of Figueroa Street. For I-110, a vehicle mix of 2.25% heavy trucks and 0.75% medium trucks was employed in the model for evaluation of existing and future anticipated noise levels, in accordance with information contained in the Caltrans *Annual Average Daily Truck Traffic on the California State Highway System* (Caltrans 2016).

The modeled existing noise level is 69 dBA CNEL at ST1 and 66 dBA at ST4 (refer to Appendix E)**.** These noise levels are in terms of the CNEL and not the L_{EQ} as shown in Table 8. ST1 is located at approximately the mid-point of the future eastern building façade, and represents the traffic noise exposure level from Figueroa Street. ST4 is located on the ground level, at approximately the future western building façade; there is currently a 10-foot-high concrete

block wall (measured from the ground elevation at the project site) between ST4 and I-110. Sound levels at points higher in elevation than the top of this barrier would be greater than modelled at ST4. Existing traffic noise exposure levels at the site would be in the "conditionally acceptable" range for multi-family residences (60–65 dBA CNEL), according to the City's General Plan Noise Element (City of Carson 2004).

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Short-Term Construction Impacts

Less-Than-Significant Impact With Mitigation Incorporated. Construction of the proposed project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction, distance between the noise source and receiver, and intervening structures. The following discussion addresses the noise levels calculated to result from construction of the project at nearby sensitive receptors (i.e., residences).

Construction – Equipment Inventory

The California Air Resources Board's CalEEMod was used to identify the construction equipment anticipated for development of the 32-unit residential condominium project on a 33,703-square-foot lot. Based on this information, CalEEMod (Version CalEEMod.2016.3.2) identified the anticipated equipment for each phase of project construction listed in Table 9.

Table 9
Construction Equipment Per Phase

Construction Activity	Demolition
Equipment Needed	1 Concrete/Industrial Saw 2 Backhoes 1 Rubber-Tired Dozer
Construction Activity	**Site Preparation**
Equipment Needed	1 Grader 1 Backhoe 1 Rubber-Tired Dozer

Table 9
Construction Equipment Per Phase

Construction Activity	Grading
Equipment Needed	1 Grader 1 Backhoe 1 Rubber-Tired Dozer 1 Water Truck
Construction Activity	**Building Construction**
Equipment Needed	1 Crane 1 Generator 1 Backhoe 3 Welders 1 Forklift/Manlift
Construction Activity	**Paving**
Equipment Needed	1 Paver 1 Concrete Truck 1 Roller 1 Water Truck 1 Paving Equipment 1 Backhoe

Source: CalEEMod.2016.3.2

Construction Noise – Assessment

With the construction equipment noise sources identified in Table 9, a noise analysis was performed using a model developed by the Federal Highway Administration called the Roadway Construction Noise Model (RCNM) (FHWA 2008). Input variables for RCNM consist of the receiver/land use types, the equipment type (e.g., backhoe, crane, truck), the number of equipment pieces, the duty cycle for each piece of equipment (i.e., percentage of time the equipment typically works in a given time period), and the distance from the noise-sensitive receiver to the construction zone. Refer to Appendix E for the inputs used in the RCNM model and the results.

Noise-sensitive land uses exist along the northern and southern sides of the project site. The closest noise-sensitive receivers consist of multi-family residences that are currently as near as 5 feet from the project site perimeter, located along the northern side of the site. Multi-family residences are located approximately 12 feet from the southern property boundary. The multi-family residential development to the north was used to analyze potential construction noise effects during all phases of site preparation and construction because it represents the nearest noise-sensitive receiver. A 5-foot distance between the receptor and the nearest construction activity was assumed to

occur at these locations to provide a worst-case noise scenario for equipment working along the shared property line.

However, the above distance separation assumption would not be representative of typical construction noise, because construction activities would not usually take place at the nearest or the farthest portions of the project site, but somewhere in between. Thus, to provide information on typical construction noise levels, the distance from the nearest receivers to the project's "acoustic center" was also analyzed. The acoustic center represents the idealized point from which the energy sum of all construction activity noise, near and far, would be centered. The acoustic center is derived by taking the square root of the product of the nearest and the farthest distances. For this project, the acoustic center was found to be approximately 29 feet from the nearest noise-sensitive receivers located to the east. Given the size of the project site and the relatively equal distribution of proposed development across the property, noise levels derived from the acoustic center of construction activity provide a better representation of average noise level exposure across the entire construction process for a given off-site receiver compared to using the minimum distance worst-case method.

The City's Noise Ordinance contains a construction noise restriction that pertains specifically to single-family residences. Where construction would have a duration greater than 21 days, construction noise levels are restricted to 65 dBA L_{EQ} during the daytime at any single-family residence in the proximity of the construction effort (Section 5500 of the Carson Municipal Code). The closest single-family residence to the project site is located on West 218th Street, approximately 315 feet to the east of the project site. Construction noise levels were also modelled at this closest single-family residence for comparison to the City's Noise Ordinance restriction.

The results of the construction noise analysis using the RCNM are summarized in Table 10 (refer to Appendix E for complete results). As shown, the highest noise levels from construction are predicted to range from approximately 106 dBA L_{EQ} (during demolition) to 101 dBA L_{EQ} (during the paving phase) at the nearest adjacent noise-sensitive receivers (i.e., multi-family residences located 5 feet from the closest point of construction). These noise levels would be substantially higher than ambient noise levels in the area, and would be considered very annoying or disruptive for daily activities at the closest off-site receptor (i.e., 5 feet from the northern property line).

This maximum noise level is considered to be a peak exposure, applicable not more than 10% to 15% of the total construction period and only while the construction activity is taking place in one location at a distance of 5 feet from any of the off-site receivers. The average construction noise levels (for construction taking place at a range of locations on

site and modeled at the acoustical center for analysis purposes) range from approximately 91 dBA L_{EQ} (during demolition) to approximately 85 dBA L_{EQ} (during the paving phase) (see Table 10). The average noise levels (based on the acoustic center) are considered a better representation of the overall noise exposure experience for the closest adjacent receivers north of the project site over the duration of each construction phase. These average construction noise levels would still be considerably greater than ambient noise levels in the project vicinity, likely resulting in annoyance.

With respect to construction noise levels at vicinity single-family residential properties, Dudek modelled construction noise for the closest single-family residence to the site, located approximately 315 feet to the east. The average construction noise levels ranged from approximately 70 dBA L_{EQ} (during demolition) to approximately 65 dBA L_{EQ} (during the paving phase) (see Table 10). Noise levels for all construction phases other than paving would marginally exceed the allowable 65 dBA L_{EQ} limit at the closest single-family residence. Mitigation would, therefore, be required to avoid a potentially significant short-term construction noise impact at the single-family residence closest to the project site.

Table 10
On-Site Construction Noise Summary (dBA L_{EQ})

Receiver Location/ Description	Land Use	Construction Noise Level by Construction Phase				
		Phase 1: Demolition	*Phase 2: Site Prep*	*Phase 3: Grading*	*Phase 4: Building Construction*	*Phase 5: Paving*
Nearest Receivers to Construction at Nearest Property Boundary (5 Feet)	Residential	106	105	105	102	101
Nearest Receivers to Construction at Acoustic Center (29 Feet)	Residential	91	90	90	87	85
Nearest Single-Family Residence (315 Feet)	Residential	70	69	69	66	65

Source: Appendix E

The following mitigation measures would reduce noise impacts of the proposed project to sensitive receivers during construction.

MM-NOI-1 At least 30 days prior to commencement of construction, the contractor shall provide written notice to all residential property owners and tenants within 450 feet of the project site that proposed construction activities

could affect outdoor or indoor living areas. The notice shall contain a description of the proposed project, a construction schedule including days and hours of construction, and a description of noise-reduction measures.

MM-NOI-2 Noise-generating construction activities (which may include preparation for construction work) shall be permitted weekdays between 7 a.m. and 6 p.m., excluding federal holidays. When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday, respectively, shall be observed as a legal holiday.

MM-NOI-3 Stationary construction equipment that generates noise that exceeds 85 dBA at the property boundaries shall be shielded with a barrier that meets an STC [Sound Transmission Class] rating of 25.

MM-NOI-4 All construction equipment powered by internal combustion engines shall be properly muffled and maintained. No internal combustion engine shall be operated on the site without a muffler. All diesel equipment shall be operated with closed engine doors and shall be equipped with factory recommended mufflers. Unnecessary idling of internal combustion engines shall be prohibited.

MM-NOI-5 Air compressors and generators used for construction shall be surrounded by temporary acoustical shelters. Whenever feasible, electrical power shall be used to run air compressors and similar power tools.

MM-NOI-6 A temporary construction sound barrier wall shall be installed along the northern, western, and southern site boundaries. Entry gates for construction vehicles along the west side of the site shall be closed when vehicles are not entering or exiting the site. The barrier shall be made of sound-attenuating material (not landscaping). To effectively reduce sound transmission through the barrier, the material chosen must be rigid and sufficiently dense (at least 20 kilograms per square meter). All noise barrier material types are equally effective, acoustically, if they have this density. For example, 5/8-inch plywood, mounted with no gaps between adjacent sheets, would be of sufficient density to achieve the target attenuation. The barrier shall be 8 feet in height from the ground surface on the construction side of the wall to achieve the goal of blocking direct line-of-sight to the adjacent residence windows. It is estimated that a noise barrier of the prescribed density would reduce average noise levels to

sensitive receptors by up to 5 dBA by blocking direct line-of-sight to ground-level receptors.

The above mitigation measures would reduce construction noise levels at the nearest single-family residence to be in compliance with the City's Noise Ordinance limit of 65 dBA L_{EQ} during daytime hours. They would also reduce construction noise levels at immediately adjacent multi-family residential properties. Therefore, with implementation of mitigation, short-term construction noise impacts would be less than significant.

Long-Term Operational Impacts

Exterior Noise Exposure

Less-Than-Significant Impact With Mitigation Incorporated. I-110 would be the primary traffic noise source at the project site. By 2030, I-110 adjacent to the project site will carry approximately 233,000 ADT (based on 0.87% growth rate demonstrated between Caltrans 2012 and 2016 annual counts) (Caltrans 2016). Figueroa Street is classified as a Major Arterial in the City's General Plan (City of Carson 2004), and would be a secondary noise source at the project site. The year 2030 traffic volume for Figueroa Street adjacent to the project site is projected to be 22,002 ADT (Dudek 2017).

Based on the proposed project design, the future exterior noise level from year 2030 traffic along I-110 and Figueroa Street within selected dedicated exterior use areas was calculated using TNM 2.5 (refer to Appendix E). The future traffic-related noise levels in selected exterior use areas of the proposed project are presented in Table 11.

Table 11
Calculated Future Sound Levels in Selected Exterior Living Spaces

Outdoor Space	Modeled Future Sound Level
Second-Floor Exterior Façade – West Facade	81 dBA CNEL
Roof Deck	58 dBA CNEL
Second-, Third-, Fourth-Floor Exterior Façade – East Facade	65 dBA CNEL
Figueroa Street Gardens	70 dBA CNEL

The proposed roof deck exterior living area would have a future calculated noise level of 58 dBA CNEL, which is within the normally acceptable range for multi-family residences (55 to 60 dBA CNEL) according to the City's General Plan Noise Element. Consequently, the roof deck as proposed would comply with the exterior noise criterion.

Any balconies proposed on the east façade of the building, facing Figueroa Street, would have future traffic noise exposure up to 65 dBA CNEL. This assumption is based on the presence of a solid wall at the opening of each balcony with an elevation of at least 3.5 feet (consistent with safety railing height requirements for upper-floor balconies). This future noise exposure level would fall within the conditionally acceptable range (60–65 dBA CNEL) of the City's General Plan Noise Element. Consequently, if balconies were to be proposed along the east façade, they would comply with the exterior noise criterion.

Also, any proposed third-floor terraced balconies on the west façade of the building, with exposure to I-110 noise, would have a future exterior noise level predicted to range up to 81 dBA CNEL. The elevation of these areas is substantially above the top of the existing noise barrier along I-110, and, therefore, would not be protected by the existing barrier. If third-floor balconies were to be proposed along the west façade, a 9-foot-high barrier would be required along the west edge of the balconies (measured from the elevation of the balcony floor) to reduce exterior future noise levels in these third-floor balconies to 65 dBA CNEL (the maximum of the conditionally acceptable range). Refer to MM-NOI-7, as follows.

Similarly, any proposed fourth-floor inset balconies on the west façade of the building, also with exposure to I-110 noise, would have a future exterior noise level predicted in same range as any second-floor balconies. The elevation of these areas is also above the top of the existing noise barrier along I-110 and, thus, would not be protected by the existing barrier. If fourth-floor balconies were to be proposed along the west façade, a 6.5-foot-high barrier would be required along the west edge of the balconies (measured from the elevation of the balcony floor) to reduce exterior future noise levels in these second-floor balconies to 65 dBA CNEL (the maximum of the conditionally acceptable range). Refer to MM-NOI-8, as follows.

The front garden area, along Figueroa Street, would primarily provide landscaping to enhance the appearance of the building from Figueroa Street. The project description indicates that this space would be "publicly accessible exterior use space." The future traffic noise levels from Figueroa Street in the front garden area would range up to 70 dBA CNEL. Since the area would be used infrequently, and probably not during the heaviest traffic periods of the day, noise exposure to levels greater than 65 dBA CNEL could be considered acceptable by the City. If this space is required to comply with the 65 dBA CNEL criterion, a 5-foot-tall wall or barrier would be required along the Figueroa Street frontage of this space. Refer to MM-NOI-9, as follows.

The following mitigation measures would reduce noise impacts to sensitive receivers during operation of the proposed project.

MM-NOI-7 If third-floor balconies are proposed along the west façade, a 9-foot-high noise barrier (i.e., the perimeter wall around the deck area) shall be required around these balconies to mitigate traffic noise to meet the City of Carson's 65 dBA CNEL noise level criterion for exterior living areas. The noise barrier may be constructed of a material such as tempered glass, acrylic glass, any masonry material with a surface density of at least 3 pounds per square foot, or a combination of the above (e.g., a masonry base with glass or acrylic glass above). The noise barrier shall have no openings or cracks.

MM-NOI-8 If fourth-floor balconies are be proposed along the west façade, a 6.5-foot-high noise barrier (i.e., the perimeter wall around the deck area) shall be required around these balconies to mitigate traffic noise to meet the City of Carson's 65 dBA CNEL noise level criterion for exterior living areas. The noise barrier may be constructed of a material such as tempered glass, acrylic glass, any masonry material with a surface density of at least 3 pounds per square foot, or a combination of the above (e.g., a masonry base with glass or acrylic glass above). The noise barrier shall have no openings or cracks.

MM-NOI-9 The garden area along Figueroa Street would have future traffic noise exposure levels ranging up to 70 dBA CNEL. A noise barrier up to 5 feet in height shall be required around the this area to mitigate traffic noise to meet the City of Carson's 65 dBA CNEL noise level criterion for exterior living/habitable areas. The noise barrier may be constructed of a material such as tempered glass, acrylic glass, any masonry material with a surface density of at least 3 pounds per square foot, or a combination of the above (e.g., a masonry base with glass or acrylic glass above). The noise barrier shall have no openings or cracks.

The above mitigation measures would reduce exterior noise exposure levels to comply with the 65 dBA CNEL exterior criterion. Therefore, with implementation of mitigation, residual exterior noise impacts would be less than significant.

Interior Noise

Less-Than-Significant Impact With Mitigation Incorporated. A detailed interior noise analysis was not conducted at this preliminary project design phase. However, the following conceptual discussion is provided for interior noise concerns. Standard construction materials and techniques for commercial development normally result in a minimum exterior-to-interior noise attenuation of 20 dBA with doors and windows closed. Therefore, an exterior noise exposure not exceeding 65 dBA CNEL would result in interior noise levels of 45 dBA CNEL or less.

Exterior noise levels for the I-110 façade of the proposed development are expected to range up to approximately 81 dBA CNEL; exterior noise levels for the Figueroa Street façade of the proposed development are expected to range up to approximately 81 dBA CNEL. The interior noise level within the portions of the structure immediately adjacent to I-110 and Figueroa Street could exceed the City's interior multi-family residential noise criterion of 45 dBA CNEL unless specific noise control construction materials and techniques are incorporated. Refer to the mitigation measure below.

MM-NOI-10 The future traffic noise exposure levels for the I-110 façade of the project would range up to 81 dBA CNEL; the future traffic noise exposure levels for the Figueroa Street façade of the project would range up to 68 dBA CNEL; interior noise levels could, therefore, exceed the 45 dBA CNEL criterion. To comply with the City of Carson's 45 dBA CNEL interior noise standard, an interior noise analysis shall be required for the portion of the structure fronting I-110 and for the portion of the structure fronting Figueroa Street.

Prior to issuance of a building permit, the project applicant shall submit a final acoustical report prepared to the satisfaction of the City of Carson Community Development Department, Planning Division. The report shall demonstrate that the proposed residential design will result in compliance with the 45 A-weighted decibel (dBA) CNEL interior noise levels as required by the California Building Code and California Noise Insulation Standards (Title 24 and 25 of the California Code of Regulations). As required, the report shall recommend construction materials and methods to minimize interior noise to an acceptable level; such materials and methods may include mechanical ventilation and/or air conditioning system and sound-rated doors and windows.

The above mitigation measure would reduce interior noise levels to comply with the 65 dBA CNEL interior criterion. Therefore, with implementation of mitigation, residual interior noise impacts would be less than significant.

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less-Than-Significant Impact. Although construction activities associated with the proposed project would result in temporary increases in groundborne vibration in the immediate project area, vibration levels from conventional construction methods are not anticipated to reach substantial levels. No blasting, pile driving, or other special construction methods associated with excessive groundborne vibration are anticipated during project construction. As such, it is anticipated that vibration generated during construction and operation of the proposed project would not affect sensitive receptors. Therefore, impacts associated with vibration would be less than significant.

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact. The primary long-term or permanent noise effect associated with residential development is the potential for increased traffic noise from project-generated traffic trips. For a 3 dBA CNEL increase in traffic noise to occur, the existing ADT along a roadway segment would need to be doubled (Caltrans 2013). The project would generate 186 ADT, all of which would be added to Figueroa Street adjacent to the project site. Figueroa Street currently carries 21,300 ADT. The project's contribution of less than 1% to the existing ADT along Figueroa Street would result in a traffic noise level increase of less than 1 dBA CNEL. As such, the project would not have the potential to generate a substantial permanent increase in ambient noise levels in the project vicinity. Therefore, impacts associated with a permanent increase in ambient noise levels would be less than significant.

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-Than-Significant Impact With Mitigation Incorporated. Construction of the proposed project would generate noise that would temporarily cause a substantial increase in ambient noise levels; refer to Section 3.12(a), above. Once construction is completed, the proposed project would not have the potential to create temporary or periodic noise increases that are substantially above ambient levels. Therefore, with

implementation of mitigation (refer to Section 3.12[a]), short-term construction noise impacts would be less than significant.

e) Would the project be 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?

No Impact. The project site is not included in an airport land use plan. The closest airport to the project site is Zamperini Field (formerly Torrance Municipal Airport), a city-owned public airport 3.5 miles to the southwest of the project site. Therefore, the proposed residential development would not have the potential to expose future residents to elevated noise levels from airport operations.

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

Less-Than-Significant Impact. The project site is located approximately 1.9 miles southwest of the Goodyear Blimp Base Airport (19200 South Main Street) and approximately 1.4 miles from the Carson Sheriff Station Heliport (21356 South Avalon Boulevard). However, the proposed residential development would not have the potential to expose future residents to elevated noise levels from private airstrip operations. Therefore, impacts associated with private airstrip noise would be less than significant.

3.13 Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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)?	☐	☐	☒	☐
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?	☐	☐	☒	☐

a) Would the project 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)?

Less-Than-Significant Impact. The proposed project would directly induce population growth in the City by constructing 32 condominium units on a property that currently is zoned to support a lower residential density. The expected household sizes would be 3+ people. The City's average household size is 3.63 (City of Carson 2004). Using this factor of 3.63 persons per household, the proposed project could support a residential population of approximately 116 persons.[4]

SCAG, along with local jurisdictions, developed a reasonable forecast growth for its 2016 RTP/SCS. Under the Jurisdictional Forecast 2040, the 2012 population for the City of Carson is 92,000 and the projected 2040 population is 107,900 (SCAG 2016). Although the project site is zoned for fewer dwelling units than is proposed, the additional 116 persons represents less than 1% of the 15,900 new residents expected.

According to Table 28 in the City's General Plan Housing Element, the total regional housing needs is 1,698 housing units. In addition, the City addresses the importance of identification of sites for future housing development (City of Carson 2013a). Since the project site is currently developed with three residential structures, which is lower than the current zoning, the proposed project would assist the City in fulfilling its housing needs (as determined by SCAG). In addition, as discussed in Section 3.18, below, utilities and infrastructure are already in place for the project site and its new residents. Therefore, impacts associated with population growth would be less than significant.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Less-Than-Significant Impact. Under existing conditions, the project site contains three residential structures that would be removed to facilitate construction of the project. The property owners have previously entered into a voluntary purchase agreement with the applicant, and would no longer occupy the project site. According the U.S. Census Bureau, the City of Carson has approximately 882 vacant housing units (U.S. Census Bureau 2015). Therefore, it is assumed that the former residents living on the project site

[4] The 116 persons represents a conservative estimate and assumes that all residents of the proposed project would be new transplants to the City. Under a more realistic scenario, it is probable that a portion of the proposed project's residential population will have already been living within the City prior to moving to the project site.

would be able to secure new housing in or around the project area without the need to construct new housing. Therefore, impacts associated with the displacement of housing would be less than significant.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Less-Than-Significant Impact. As previously addressed in Section 3.13(b), the project site currently contains three residential structures that would be removed to facilitate construction of the project. However, given that the City has approximately 882 vacant housing units (U.S. Census Bureau 2015), it is assumed that the residents currently living on the project site would be able to secure new housing in or around the project area without the need to construct new housing. Therefore, impacts associated with the displacement of people would be less than significant.

3.14 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

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:

Fire protection?

Less-Than-Significant Impact. The Los Angeles County Fire Department (LACoFD) provides fire protection services to the City of Carson. There are six primary fire stations that provide fire and emergency medical services to the City. Four of the stations are located within the City's boundaries. The Fire Prevention Office is located at the Carson City Hall (701 East Carson Street), which is located approximately 1.9 miles northeast of the project site. The nearest fire station is the LACoFD Station 36 (127 West 223rd Street), located approximately 1.1 miles southeast of the project site via local roads.

Based on the proximity of the project site to the existing LACoFD facilities, and since the project site is located in a developed part of the City that is within the service area of LACoFD, it is anticipated that the proposed project could be served by LACoFD without adversely affecting personnel-to-resident ratios, response times, or other performance objectives.

The property owner/developer would be required to pay development impact fees to the City prior to the issuance of building permits. These fees would help offset incremental impacts to LACoFD resources by helping to fund capital projects, as needed. Therefore, impacts associated with LACoFD facilities would be less than significant.

Police protection?

Less-Than-Significant Impact. The Los Angeles County Sheriff's Department (LASD) contracts with the City to provide police protection services. LASD staff has indicated that an officer-to-population ratio of one officer to every 1,000 residents is the desired level of service (County of Los Angeles 2014). The Carson Sheriff's Station is located at 21356 South Avalon Boulevard, approximately 1.9 miles northeast of the project site.

Based on the proximity of the project site to the existing Carson's Sheriff Station, and since the project site is located in a developed part of the City that is within the service area of the Carson Sheriff's Station, it is anticipated that the proposed project could be served without adversely affecting personnel-to-resident ratios, response times, or other performance objectives.

The property owner/developer would be required to pay development impact fees to the City prior to the issuance of building permits. These fees would offset incremental impacts to LASD resources by helping to fund capital improvements for law enforcement, as needed. Therefore, impacts associated with LASD would be less than significant.

Schools?

Less-Than-Significant Impact. The Los Angeles Unified School District (LAUSD) and the Compton Unified School District serve the City of Carson. LAUSD has 14 elementary schools, five middle schools, and six high schools that serve the project area. The Compton Unified School District has one elementary school, one middle school, and one high school serving the City. The project site is located within Board District 7, and the assigned resident schools are Caroldale Learning Community (grades K–8), Stephen M White Middle School (grades 6–8), and Carson Senior High School (grades 9–12) (Los Angeles Unified School District 2017).

According to the California Department of Education, during the 2016/2017 school year, Caroldale Learning Community had 938 students enrolled (approximately 663 in grades K–5 and 275 students in grades 6–8), White Middle School had 1,669 students enrolled, and Carson Senior High School has 1,439 students (CDE 2017). The City's General Plan EIR indicates that these schools have capacity of 1,048 students, 2,007 students, and 3,600 students, respectively (City of Carson 2002). As such, it is assumed that the nearby schools have existing capacity and facilities to accept additional students.

Using the student generation rates used in the City's General Plan EIR (City of Carson 2002), high-density residential uses generate 0.178 elementary school students, 0.0823 middle school students, and 0.081 high school students per unit. At 32 dwelling units, the proposed project could generate approximately six elementary school students, three middle school students, and three high school students. Because LAUSD has existing capacity, it is assumed that the schools serving the proposed project would have the facilities to accept what equates to a nominal increase in students generated by the proposed project.

In addition, the proposed project would be subject to SB 50, which requires the payment of mandatory impact fees to offset any impact to school facilities. In accordance with SB 50, the property owner/developer would pay its fair share of school impact fees based on the number of proposed dwelling units and square footage per Government Code Section 65995(h). Therefore, impacts associated with LAUSD and Compton Unified School District facilities would be less than significant.

Parks?

Less-Than-Significant Impact. The proposed project would include 32 residential units that would house approximately 116 residents. At least a portion of these residents are anticipated to patronize the various public parks and recreation facilities located in proximity to the project site. The closest park to the project site is the 11-acre Carson Park, which is located 0.5 miles to the northeast and provides a range of passive and active recreational amenities, including two lighted ball diamonds, a swimming pool, a play area, two multi-purpose game courts, a restroom/snack-bar building, a multi-purpose building, and a picnic area. Additionally, Veterans Park is located approximately 0.57 miles to the southeast of the project site. Veterans Park is a 12-acre facility with two lighted ball diamonds, two multipurpose rooms, a play area, picnic area, skate park, two lighted tennis courts, a snack bar building, and an amphitheater.

The proposed project would be subject to the state's Quimby Act, which requires development projects to set aside land, donate conservation easements, or pay in-lieu fees for park improvements. Pursuant to the Quimby Act, the property owner/developer would pay its fair share of in-lieu fees based on the number and type of dwelling units.

In addition, the proposed project would include common areas located throughout the project site, such as outdoor fire pits with seating, multi-functional lawns, and multiple locations with barbeque grills and tables. These on-site amenities would provide an alternative to off-site public parks and recreational facilities, allowing the proposed project's residents to recreate on the project site while incrementally reducing impacts to off-site public parks and recreational facilities. Therefore, impacts associated with park facilities would be less than significant.

Other public facilities?

Less-Than-Significant Impact. It is reasonable to assume that at least a portion of the approximately 116 residents generated by the proposed project would patronize public facilities, such as local library branches, operated by the City. The County of Los Angeles Public Library System serves the City. The Carson Library is located at 151 East Carson Street, approximately 0.6 miles northeast of the project site. The service area for the library has a population of 100,980 and has a collection of 216,146 library materials, such as books, audio materials, periodicals, and government documents. In addition, the Dr. Martin Luther King, Jr. Library is located at 17906 South Avalon Boulevard, approximately 3 miles northeast of the project site (City of Carson 2002).

According to the City's General Plan EIR, the libraries are underserved in terms of facility size and library materials (City of Carson 2002). However, the proposed project would add approximately 116 residents, which represents approximately 0.001% of the existing 92,797 City residents that are served by the library system (U.S. Census Bureau 2015). This nominal increase in library patrons is not expected to significantly impact the County of Los Angeles Public Library System's ability to serve users compared to existing conditions. In addition, the County of Los Angeles applies a library mitigation fee to new residential developments, which is deposited into a special library capital facilities fund (County of Los Angeles 2014). Therefore, impacts associated with libraries and other public facilities would be less than significant.

3.15 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

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?

Less-Than-Significant Impact. The proposed project would include 32 residential units that would house approximately 116 residents. At least a portion of these residents are anticipated to patronize the various public parks and recreation facilities located in proximity to the project site. The proposed project would be subject to the state's Quimby Act, which requires development projects to set aside land, donate conservation easements, or pay in-lieu fees for park improvements. Pursuant to the Quimby Act, the property owner/developer would pay its fair share of in-lieu fees based on the number and type of dwelling units.

In addition, the proposed project would include common areas located throughout the project site, including outdoor fire pits with seating, multi-functional lawns, and multiple locations with barbeque grills and tables. These on-site amenities would provide an alternative to off-site public parks and recreational facilities, allowing the proposed project's residents to recreate on the project site while incrementally reducing impacts to off-site public parks and recreational facilities. Therefore, impacts associated with the increased use of existing recreational facilities would be less than significant.

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. The proposed project would include common areas located throughout the project site. These areas would include outdoor fire pits with seating, multi-functional lawns, and multiple locations with barbeque grills and tables. These on-site amenities would be fully contained within the project site and are part of the proposed project. As such, any potential environmental impacts related to the construction and operation of these on-site recreational amenities are already accounted for in this IS/MND as part of the impact assessment conducted for the entirety of the proposed project. No adverse physical impacts beyond those already disclosed in this document would occur as a result of implementation of the proposed project's on-site recreational facilities. Therefore, impacts associated with the construction or expansion of recreational facilities would be less than significant.

3.16 Transportation and Traffic

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The following analysis is based on the Focused Traffic Analysis prepared by Dudek, included as Appendix F.

a) Would the project 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 an applicable plan, ordinance, or policy that establishes measures of effectiveness for the performance of the circulation system, as further discussed below.

Existing Traffic Conditions

Existing Roadway System

Figueroa Street runs north/south just east of the project site. It is classified as a Major Highway in the City of Carson General Plan (City of Carson 2004). It provides two lanes

in each direction and is generally divided by a raised median. Parking (with some restrictions) is allowed along this segment of Figueroa Street.

The Figueroa Street/218th Street intersection is unsignalized. This intersection would provide full access to the project site and it aligns with the project driveway located to the south of the site.

Existing Average Daily Traffic Volumes

ADT volumes were collected along Figueroa Street near the project site, and peak-hour turn movement counts were collected at the Figueroa Street/218th Street intersection on Wednesday, October 25, 2017. Traffic count worksheets are provided in Appendix F.

Existing Intersection Level of Service

Level of service (LOS) at the Figueroa Street/218th Street intersection was calculated using the *Highway Capacity Manual* 2010 methodology (Transportation Research Board 2010). The Figueroa Street/218th Street intersection (westbound approach) currently operates at LOS D during both the AM and the PM peak hours under the existing conditions. LOS worksheets are provided in Appendix F.

Proposed Project Traffic

Trip Generation

Trip generation rates were determined for the morning peak-hour inbound and outbound traffic and evening peak-hour inbound and outbound traffic for the proposed land use. By multiplying the trip generation rates by the land use quantity, the traffic volumes were determined. Trip rates for the proposed project were obtained from the Institute of Transportation Engineers *Trip Generation, 9th Edition* (ITE 2012). The trip rate for "Residential Condominium/Townhouse" was used to estimate the trip generation of the proposed project (see Table 12).

Table 12
Project Trip Generation

Land Use	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
			In	*Out*	***Total***	*In*	*Out*	***Total***
Trip Rates								
Residential Condo/Townhouse	per DU	5.81	17%	83%	**0.44**	67%	33%	**0.52**
Trip Generation								
Residential Condo/Townhouse	32 DUs	186	2	12	**14**	11	6	**17**

Source: ITE 2012
DU = dwelling unit

As shown in Table 12, the proposed project would generate approximately 186 daily trips, including 14 AM peak-hour trips (2 inbound and 12 outbound), and 17 PM peak-hour trips (11 inbound and 6 outbound).

Trip Distribution and Assignment

Local trip distribution for the project was determined based on the roadway network in the vicinity. Approximately 55% of the project traffic would be expected to travel north toward Carson Street and 45% of the traffic would travel south toward 220th Street. Table 13 shows the trip distribution percentages and resulting project volume assignments at the Figueroa Street/218th Street intersection for the proposed project.

Table 13
Project Trip Distribution and Assignment

Roadway – Direction	Project Distribution	Project Assignment (trips)	
		AM	*PM*
Figueroa Street, North of 218th Street	55%	8	9
Figueroa Street, South of 218th Street	45%	6	8
Total	**100%**	**14 trips**	**17 trips**

Source: Appendix F

The trip distribution percentages to and from the intersection were applied to the proposed project's weekday AM and PM peak-hour trip generation estimates to calculate the project trip assignment (i.e., AM and PM peak-hour volumes that the project would generate). Figure 6, Project Trip Distribution and Assignment, also shows the project trip distribution and assignment.

Proposed Project Access

Based on the proposed project's site plan, access to the site would be provided from two driveways on Figueroa Street. There are two driveways proposed: one on the north end and one on the south end of the site. The driveways would be connected internally, providing access to on-grade parking. The south driveway would align with the Figueroa Street/218th Street intersection and would provide full access to the project. The north driveway of the project would be a right-in/right-out-only driveway.

With the addition of project traffic to the Figueroa Street/218th Street intersection, the westbound approach of the intersection would continue to operate at LOS D during both the peak hours. The eastbound approach (i.e., the south driveway of the project) would operate at LOS F during the AM peak hours and LOS E during the PM peak hours. However, the peak-hour project traffic volumes on the impacted approach (10 AM peak-hour trips and five PM peak-hour trips) would be significantly low compared to the northbound and southbound traffic volumes on Figueroa Street. Furthermore, the minor street approach volumes on 218th Street and the project's south driveway would be significantly lower than the minimum volume threshold of 100 vehicles per hour to warrant the installation of a traffic signal.

In addition, per the LOS analysis, the 95th percentile (design) queue at the eastbound approach (project south driveway) would be less than one vehicle, which means that no more than one vehicle would be waiting at the project driveway to enter the Figueroa Street/218th Street intersection during the peak hours.

Therefore, with the relatively low traffic volumes generated by the proposed project, the provision of two driveways on Figueroa Street, and the calculated 95th percentile queue of one vehicle during the peak hours, the proposed project would not cause significant delay or queuing at the Figueroa Street/218th Street intersection.

Based on the methodology, modeling, and findings in the Traffic Impact Analysis prepared for the proposed project (Appendix F), the proposed project would not result in an adverse impact to local roadway operations. Therefore, impacts associated with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system would be less than significant.

b) Would the project 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?

No Impact. The project site is located within Los Angeles County, and the project is subject to its Congestion Management Program. A Traffic Impact Analysis is necessary for all projects that are expected to add 50 or more trips during either the weekday AM or PM peak hours; one is also necessary for mainline freeway monitoring locations where a project is expected to add 150 or more trips in either direction (County of Los Angeles 2010). Since the proposed project would generate approximately 14 AM peak-hour trips and 17 PM peak-hour trips, the project would not exceed the threshold of 50 AM or PM peak-hour trips. As such, the proposed project does not meet the requirements for a Traffic Impact Analysis, and no conflict with a Congestion Management Program would occur. Therefore, no impacts associated with the Los Angeles County Congestion Management Program would occur.

c) Would the project 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 closest public airports to the project site are Zamperini Field (formerly Torrance Municipal Airport), which is located approximately 3.5 miles southeast of the project site, and the Compton/Woodley Airport, which is located approximately 5 miles northeast of the project site. According to the Los Angeles County Airport Land Use Commission, the proposed project is not located within any airport land use plans (ALUC 2017). Thus, the project site is located outside of any airport impact zones.

According to the Airport Hazard Zoning Height Restrictions for the City of Torrance Municipal Airport, the project site lies outside of any of the established zones requiring a height limit (City of Torrance 2017). Further, since the proposed project would only extend four stories in height, it would not be tall enough to have the potential to impede any overhead air traffic, which would occur at several thousand feet overhead.

The project site is located approximately 1.9 miles southwest of the Goodyear Blimp Base Airport (19200 South Main Street) and approximately 1.4 miles from the Carson Sheriff Station Heliport (21356 South Avalon Boulevard). The height of the proposed project would not interfere with the flight path for either the blimp or heliport operations. Therefore, no impacts associated with air traffic patterns would occur.

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

No Impact. The proposed project would be subject to Design Overlay Review (DOR No. 1661-17) to regulate the design of the proposed project through the General Plan and Zoning Ordinance to ensure compatible use. The developer would be responsible for on-site circulation improvements (driveways and internal drive aisles) and frontage improvements (utility connections, landscape areas) along Figueroa Street. These on-site and adjacent improvements would be designed in accordance with all applicable design standards set forth by the City, which were established to ensure safe and efficient vehicular circulation on City roadway facilities. In addition, the City reviews all site plans to ensure that adequate line-of-sight is provided at all driveways, making sure that no structures or landscaping blocks the views of vehicles entering and exiting a site. As such, no sharp curves, dangerous intersections, or incompatible uses would be introduced by the proposed project.

The project site would be accessible via two driveway entrances on Figueroa Street. There are two driveways proposed: one on the north end and one on the south end of the site. The driveways would be connected internally, providing access to on-grade parking. The south driveway would align with the Figueroa Street/218th Street intersection and would provide full access to the project. The north driveway would be a right-in/right-out-only driveway. The proposed project would not cause significant delay or queuing at the Figueroa Street/218th Street intersection. Therefore, no impacts associated with hazardous design features or incompatible land uses would occur.

e) Would the project result in inadequate emergency access?

No Impact. The project site would be accessible through two driveway entries, both from Figueroa Street. The driveways would be located on the north and south ends of the project site. Each of the proposed project's driveways would be designed and constructed to City standards and comply with City width, clearance, and turning-radius requirements. The project site would be accessible to emergency responders during construction and operation of the proposed project. As a result of the proposed project's driveway entries and because the project would comply with all applicable local requirements related to emergency vehicle access and circulation, the proposed project would not result in inadequate emergency access. Therefore, no impacts associated with inadequate emergency access would occur.

f) Would the project 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 City of Carson Master Plan of Bikeways was adopted by the City Council in August 2013 in compliance with Caltrans' Bicycle Transportation Account standards. The Bicycle Master Plan proposes an extensive network of streets designed to be safe and comfortable for bicyclists. Under the existing condition, there is not a bicycle path along Figueroa Street. The proposed network of bikeways would include a colored bike lane that would run along Figueroa Street between Carson and 223rd Street, near the project site. Since the proposed project would not extend into the right-of-way, implementation of the proposed project would not conflict with the Carson Master Plan of Bikeways (City of Carson 2013b). In addition, the proposed project would provide bicycle parking for at least 5% of parking stalls, pursuant to Carson Municipal Code Section 9138.17.

In addition, the project site is accessible via local sidewalks to two transit lines. The Metro Silver Line links San Pedro to the south with the Harbor Gateway Transit Center, south Los Angeles, and downtown Los Angeles to the north, making a stop adjacent to the City at I-110/Carson Street, approximately 0.3 miles from the project site (Metro 2017). The Torrance Transit Rapid 3 runs along Carson Street then heads south on Avalon Boulevard; the eastbound and westbound stops are located approximately 0.2 miles from the project site (Torrance Transit 2017). The proposed project would be subject to review by the City to ensure local bus providers would not be impacted, and should bus stop improvements be required, the improvements would be designed to provide safe and efficient access.

Sidewalks and other designated pathways would follow direct and safe routes from the external pedestrian circulation system to each building on the project site. As such, the proposed project would not include site improvements that would extend into the public right-of-way or interfere with existing public transit, bicycle, or pedestrian facilities, or impede the construction of new or the expansion of such existing facilities in the future. Therefore, no impacts associated with alternative modes of transportation would occur.

3.17 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES				
a) 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:				
i) 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	☐	☒	☐	☐
ii) 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 Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

a) 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:

i) 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)?

Less-Than-Significant Impact with Mitigation Incorporated. As previously discussed in Section 3.5, all built-environment resources within the project site were recorded and evaluated in consideration of NRHP and CRHR designation criteria and integrity requirements. None of the buildings and structures within the project site were found to be eligible for listing in the NRHP or CRHR. These properties are not considered historical resources for the purposes of CEQA, and no impacts to historical resources would occur.

The Sacred Lands Files search conducted by the NAHC failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC provided a list of five Native American groups and individuals who may have knowledge of cultural resources in the project area.

The proposed project is subject to compliance with both AB 52 (PRC Section 21074) and SB 18. AB 52 requires consideration of impacts to tribal cultural resources as part of the CEQA process and requires the City, as the lead agency, to notify any groups that are traditionally or culturally affiliated with the geographic area of the proposed project and who have requested notification. SB 18 requires local governments to consult with California Native American tribal representatives for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places in creating or amending specific plans.

On November 15, 2017, the City sent notification letters to the five NAHC-provided contacts, including representatives with the Gabrielano Band of Mission Indians, Gabrielano-Tongva Tribe, Gabrielano/Tongva San Gabriel Band of Mission Indians, Gabrielano/Tongva Nation, and Gabrielano Tongva Indians of California Tribal Council. As of the date of this document, the City has only received response from Andrew Salas, chairman of the Gabrieleño Band of Mission Indians – Kizh Nation. On January 10, 2018, the City participated in a conference call with Mr. Salas to commence the AB 52 consultation process. Mr. Salas and his representatives stated that significant tribal cultural resources have been previously unearthed in the broader project area and that the adjacent I-110 corridor was historically utilized as significant Native American trade route in the region. Mr. Salas recommended tribal monitoring during site preparation, grading, excavation, and other ground-disturbing, subsurface construction activities.

While the need for on-site monitoring is not supported by the cultural resources evaluation conducted for the project and project site, the City is committed to preserving the integrity of tribal cultural resources. As such, in response to the requests for construction monitoring, measures MM-TCR-1 and TCR-2 would be required to ensure that tribal monitors have access to the project site during subsurface construction activities and that resources unearthed by project construction activities are evaluated appropriately.

MM-TRC-1 Prior to the issuance of any grading permits for the project, the City of Carson Community Development Department shall ensure that the construction contractor provide access for Native

American monitoring during ground-disturbing activities. This provision shall be included on project plans and specifications. The site shall be made accessible to any Native American tribe requesting to be present, provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall be approved by a local tribal representative and shall be present on site during the construction phases that involve any ground-disturbing activities. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance, for any archaeological resource(s) encountered during grading and excavation activities pertinent to the provisions outlined in the CEQA, California PRC Division 13, Section 21083.2 (a) through (k).

Neither the City of Carson, project applicant, nor construction contractor shall be financially obligated for any monitoring activities. If evidence of any tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource. The recovery process shall not unreasonably delay the construction process.

Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The on-site monitoring shall end when the project site grading and excavation activities are completed or when the monitor has indicated that the site has a low potential for archaeological resources.

MM-TRC-2 All archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and Native American monitor. If the resources are Native American in origin, the tribe shall coordinate with the landowner regarding treatment and curation of these resources. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC

Section 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.

Therefore, based on compliance with MM-CUL-1, as well as with MM-TCR-1 and MM-TCR-2, impacts to buried, currently unrecorded/unknown tribal cultural resources would be less than significant.

ii) ***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 Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?***

Less-Than-Significant Impact with Mitigation Incorporated. See response to Impact 3.17(a)(i).

3.18 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less-Than-Significant Impact. The Los Angeles County Sanitation Districts (LACSD) provides wastewater treatment services to the City. Wastewater generated on the project site would be transported to the Joint Water Pollution Control Plant (JWPCP) located in the City of Carson. The JWPCP provides primary and secondary treatment for approximately 260 million gallons of wastewater per day, and has a total permitted capacity of 400 million gallons per day (LACSD 2017a). LACSD determined that the proposed project would generate approximately 5,928 gallons of wastewater per day (LACSD 2017b). Although the LACSD has the capacity for wastewater treatment services, the California Health and Safety Code allows the LACSD to charge a fee for additional connections to the existing LACSD sewer system. This connection fee is required to construct an incremental expansion of the sewer system to mitigate the impact of individual projects. Based on the sewer capacity analysis (Appendix G, Sewer Area Study), the existing sewer pipes would accommodate the proposed project.

The JWPCP is required to comply with treatment requirements specified in the NDPES permits issued by the RWQCB. Since the proposed project would involve residential use, it would generate the same types of municipal wastewater that are currently generated throughout the City. The proposed project would not include industrial uses or activities that would require a unique wastewater treatment process. Therefore, impacts associated with wastewater treatment requirements would be less than significant.

b) Would the project 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?

Water Facilities

Less-Than-Significant Impact. The proposed project would involve implementation of 32 residential units, which would increase demand for water supplies. The project site would receive its water supply from the Dominguez District of Cal Water. Based on the 2015 UWMP, the Dominguez District receives its water from 17% groundwater, 15% recycled water, and 68% purchased water. Purchased water is delivered from four Metropolitan Water District distribution feeders (Cal Water 2016).

Since the main source of water for the site is purchased water, supply availability is dependent on precipitation. However, customer demands do vary with local rainfall. In general, water demand tends to increase in dry years, primarily due to increased water activities such as landscape irrigation. Thus, to assess the reliability of their water supply service, every urban water supplier is required to assess its water service under normal, dry, and multiple-dry water years. Table 14 provides water demand and supplies for single- and multiple-year dry year scenarios for the Dominguez District of Cal Water.

Table 14
Multiple Dry Years Supply and Demand Comparison (Acre-Feet per Year)

Dry Year Scenario	Supply and Demand	2020	2025	2030	2035	2040
First Year	Supply Totals	43,623	44,376	45,395	46,554	47,858
	Demand Totals	43,623	44,376	45,395	46,554	47,858
	Difference	0	0	0	0	0
Second Year	Supply Totals	43,210	43,964	44,981	46,138	47,440
	Demand Totals	43,210	43,964	44,981	46,138	47,440
	Difference	0	0	0	0	0
Third Year	Supply Totals	43,412	44,165	45,183	46,341	47,664
	Demand Totals	43,412	44,165	45,183	46,341	47,664
	Difference	0	0	0	0	0

Source: Cal Water 2016, Table 7-4

According to the 2015 UWMP, Cal Water coordinates on an ongoing basis with all relevant agencies in the region to optimize the use of regional water supplies. This includes the West Basin Municipal Water District, LACSD, the Water Replenishment District of Southern California, and other public and private entities. In addition, Cal

Water has its own conservation programs to reduce demand on water sources. The UWMP also describes the water shortage contingency plan for the Dominguez District in the event of a drought or a catastrophic supply interruption. The details of the Water Shortage Contingency Plan are provided in the 2015 UWMP and include restrictions on water use based on the four stages of action. With the projects and programs implemented by Cal Water and the City, water supplies are projected to meet full-service demands (see Table 14) (Cal Water 2016).

Cal Water has indicated that, assuming all required permits have been received and construction commences within 2 years of August 2017, Cal Water will provide water service to the proposed project. Therefore, because the water demands can be met under multiple dry years, and because supply would meet demand due to diversified supply and conservation measures, the proposed project's water demands would be served by existing water supplies. Therefore, impacts associated with water facilities and supplies would be less than significant.

Wastewater Treatment Facilities

Less-Than-Significant Impact. The proposed project would generate the same types of municipal wastewater that are currently generated throughout the City. The proposed project would not include industrial uses or activities that would require unique wastewater treatment processes. In addition, the JWPCP is required to comply with treatment requirements specified in the NDPES permits issued by the RWQCB, which requires wastewater produced by the proposed project to comply with RWQCB requirements. Therefore, impacts associated with wastewater treatment requirements would be less than significant.

c) Would the project 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?

Less-Than-Significant Impact. As part of the proposed project, an engineered storm drainage system would be installed on site. Under existing conditions, the storm drainage pattern is from the northwest corner of the project site to the southeast corner of the project site. The proposed stormwater drainage system would incorporate catch basins and PVC drainage pipes to drain from the northwest corner of project site to the southeast corner of the project site and onto the street through the proposed parkway drain. In addition, the proposed project would use dry wells to meet the on-site retention requirements of the City's LID Ordinance and prevent pollutants from being discharged off site.

Similar to all other on-site improvements associated with the proposed project, the environmental effects of the new storm drain system have been accounted for in this IS/MND. No additional impacts would occur as a result of the stormwater drainage system. Therefore, impacts associated with the construction or expansion of storm drain facilities would be less than significant.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less-Than-Significant Impact. As previously discussed in Section 3.18(b), because Cal Water's water demands can be met under multiple dry years, and because supply would meet demand due to diversified supply and conservation measures, the proposed project's water demands would be served by existing water supplies. Therefore, impacts associated with water supplies would be less than significant.

e) Would the project 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?

Less-Than-Significant Impact. As previously discussed in Section 3.18(a), LACSD determined that the proposed project would generate approximately 5,928 gallons of wastewater per day. Although LACSD has the capacity for wastewater treatment services, the California Health and Safety Code allows LACSD to charge a fee for additional connections to the existing LACSD sewer system. This connection fee is required to construct an incremental expansion of the sewer system to mitigate the impact of individual projects. Based on the sewer capacity analysis (Appendix G), the existing sewer pipes would accommodate the proposed project. In addition, the proposed project would generate the same types of municipal wastewater that are currently generated throughout the City. The proposed project would not include industrial uses or activities that would require unique wastewater treatment processes. Therefore, impacts associated with wastewater treatment capacities would be less than significant.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less-Than-Significant Impact. Residential solid waste is collected in the City by Waste Management and taken to the transfer station (321 W. Francisco Street) in Carson, where it is sorted. This 10-acre facility has a permitted capacity of 5,300 tons per day. After materials are sorted, special wastes, such as green waste, steel, and wood, are taken to

facilities for disposal or recycling, and the remaining waste is taken to El Sobrante Landfill in Riverside County (City of Carson 2004).

The California Department of Resources Recycling and Recovery publishes solid waste generation rates based on land use types. According to the California Department of Resources Recycling and Recovery, residential multi-family uses can generate solid waste at a rate of approximately 8.6 pounds per dwelling unit per day (Cal Recycle 2016). Based on these generation rates, construction of the proposed 32 residential units could generate solid waste at a rate of approximately 275 pounds per day.[5]

The El Sobrante Landfill currently has a maximum permitted throughput of 16,054 tons per day, and a remaining capacity of 145,530,000 tons. Operations at this facilities are expected to cease in 2045 (Cal Recycle 2009). Waste management also uses Lancaster Landfill and Simi Valley Landfill as alternates. These landfills have capacities of 5,100 tons per day and 9,250 tons per day, respectively (Cal Recycle 2012, 2013). As such, solid waste generated by the proposed project would represent a nominal percentage of the collective maximum daily throughput permitted for the local landfills. Therefore, impacts associated with solid waste disposal would be less than significant.

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less-Than-Significant Impact. All collection, transportation, and disposal of solid waste generated by the proposed project would comply with all applicable federal, state, and local statues and regulations. Under AB 939, the Integrated Waste Management Act of 1989, local jurisdictions are required to develop source reduction, reuse, recycling, and composting programs to reduce the amount of solid waste entering landfills. Local jurisdictions are mandated to divert at least 50% of their solid waste generation into recycling. The proposed project would be required to submit plans to the Public Works Department for review and approval to ensure the plan would comply with AB 939.

In addition, the state has set an ambitious goal of 75% recycling, composting, and source reduction of solid waste by 2020. To help reach this goal, the state has adopted AB 341 and AB 1826. AB 341 is a mandatory commercial recycling bill, and AB 1826 is mandatory organic recycling. Waste generated by the proposed project would enter the City's waste stream but would not adversely affect the City's ability to meet AB 939, AB 341, or AB 1826, since the proposed project's waste generation would represent a

[5] This estimate does not account for diversion of recyclables from the solid waste stream, and, thus, should be considered a conservative projection.

nominal percentage of the waste created within the City. Therefore, impacts associated with solid waste disposal regulations would be less than significant.

3.19 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

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 Incorporated. As discussed throughout this IS/MND, impacts related to archaeological resources would be minimized to less than significant with the incorporation of mitigation. As discussed in Section 3.4, Biological Resources; Section 3.5, Cultural Resources; and Section 3.17, Tribal Cultural Resources, the proposed project would not result in impacts to biological, cultural, or tribal cultural resources. Therefore, the proposed project would not 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.

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)?

Less-Than-Significant Impact With Mitigation Incorporated. As addressed throughout this IS/MND, the proposed project would have no impact, a less-than-significant impact, or a less-than-significant impact with mitigation incorporated with respect to all environmental impact areas. Cumulative impacts of several resource areas have already been addressed in several resource sections: Section 3.3, Air Quality; Section 3.7, Greenhouse Gas Emissions; Section 3.12, Noise; and Section 3.16, Transportation and Traffic. CalEEMod was used to assess the air quality and GHG emissions impacts resulting from the proposed project, concluding less-than-significant impacts. Noise and traffic assessments conducted as part of this IS/MND considered cumulative increases in traffic and concluded that cumulative impacts would be less than significant. Some of the other resource areas (i.e., Section 3.1, Aesthetics; Section 3.2, Agricultural and Forestry Resources; Section 3.9, Hydrology and Water Quality; Section 3.10, Land Use and Planning; Section 3.11, Mineral Resources; Section 3.13, Population and Housing; Section 3.14, Public Services; Section 3.15, Recreation; and Section 3.18, Utilities and Services Systems) were determined to have a less-than-significant or no impact compared to existing conditions, and, thus, the proposed project would not contribute to cumulative impacts related to these environmental topics. Other issues areas (i.e., Section 3.5, Cultural Resources; Section 3.6, Geology and Soils; Section 3.8, Hazards and Hazardous Materials, and Section 3.17, Tribal Cultural Resources) are by their nature site-specific, and impacts at one location do not add to impacts at other locations or create additive impacts.

For all resource areas analyzed, with the incorporation of feasible mitigation measures identified within this IS/MND, the proposed project's individual-level impacts would be reduced to less-than-significant levels, which would, in turn, reduce the potential for these impacts to be considered part of any possible cumulative impact. Therefore, the proposed project would not result in individually limited but cumulatively considerable impacts.

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

Less-Than-Significant Impact With Mitigation Incorporated. As evaluated throughout this document, with incorporation of mitigation, environmental impacts associated with the proposed project would be reduced to less-than-significant levels. Thus, the proposed project would not directly or indirectly cause substantial adverse effects on human beings.

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4.2 List of Preparers

Dudek

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Sabrina Alonso, Environmental Analyst
Ian McIntire, Air Quality Specialist
Sam Murray, Cultural Specialist
Sarah Corder, Cultural Specialist
Connor Burke, Noise
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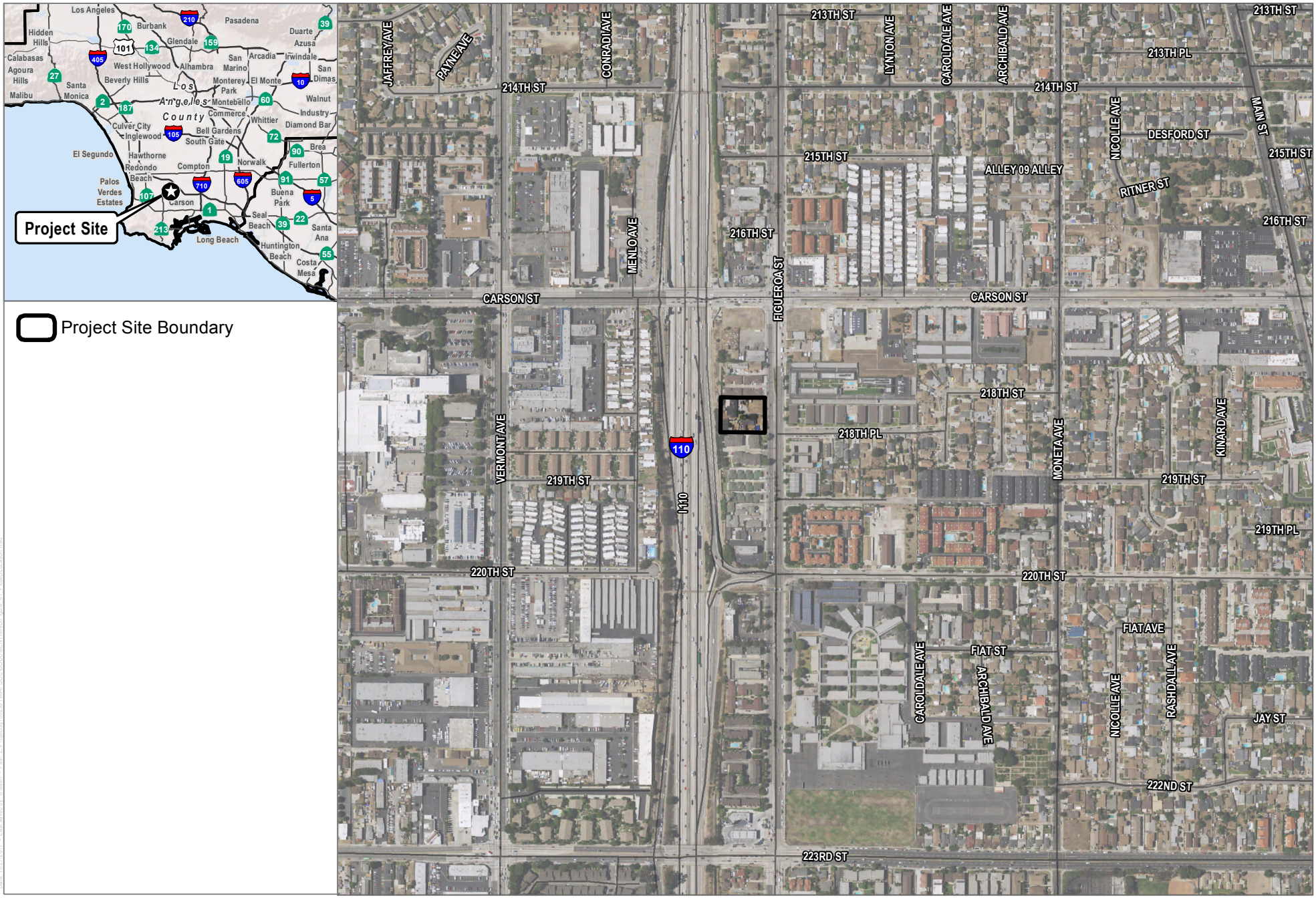
Tyler Friesen, GIS Technician
Anne McDonnell, Technical Editor
Corinne Price, Technical Editor
Devin Brookhart, Publications Specialist Lead
David Mueller, Publications Specialist
Kara Murphy, Publications Specialist



SOURCE: NAIP 2016

DUDEK

0 305 610 Feet

FIGURE 1

Project Location

Birch Specific Plan MND

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1. Site view from east

2. Site view from northeast

3. Existing residential structures on site

4. Existing residential structures on site

SOURCE: Laney LA, Inc. (2017)

FIGURE 2

Existing Site Photos

Birch Specific Plan MND

DUDEK

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SOURCE: Laney LA, Inc. (2017)

FIGURE 3

Site Plan

Birch Specific Plan MND

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NORTH ELEVATION 1
SCALE: 1/8" = 1'-0"

EAST ELEVATION 2
SCALE: 1/8" = 1'-0"

SOURCE: Laney LA, Inc. (2018)

FIGURE 4
Architectural Elevations
Birch Specific Plan MND

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SOURCE: Bing Maps 2017

DUDEK

0 100 200 Feet

FIGURE 5

Noise Measurement Locations

Birch Specific Plan MND

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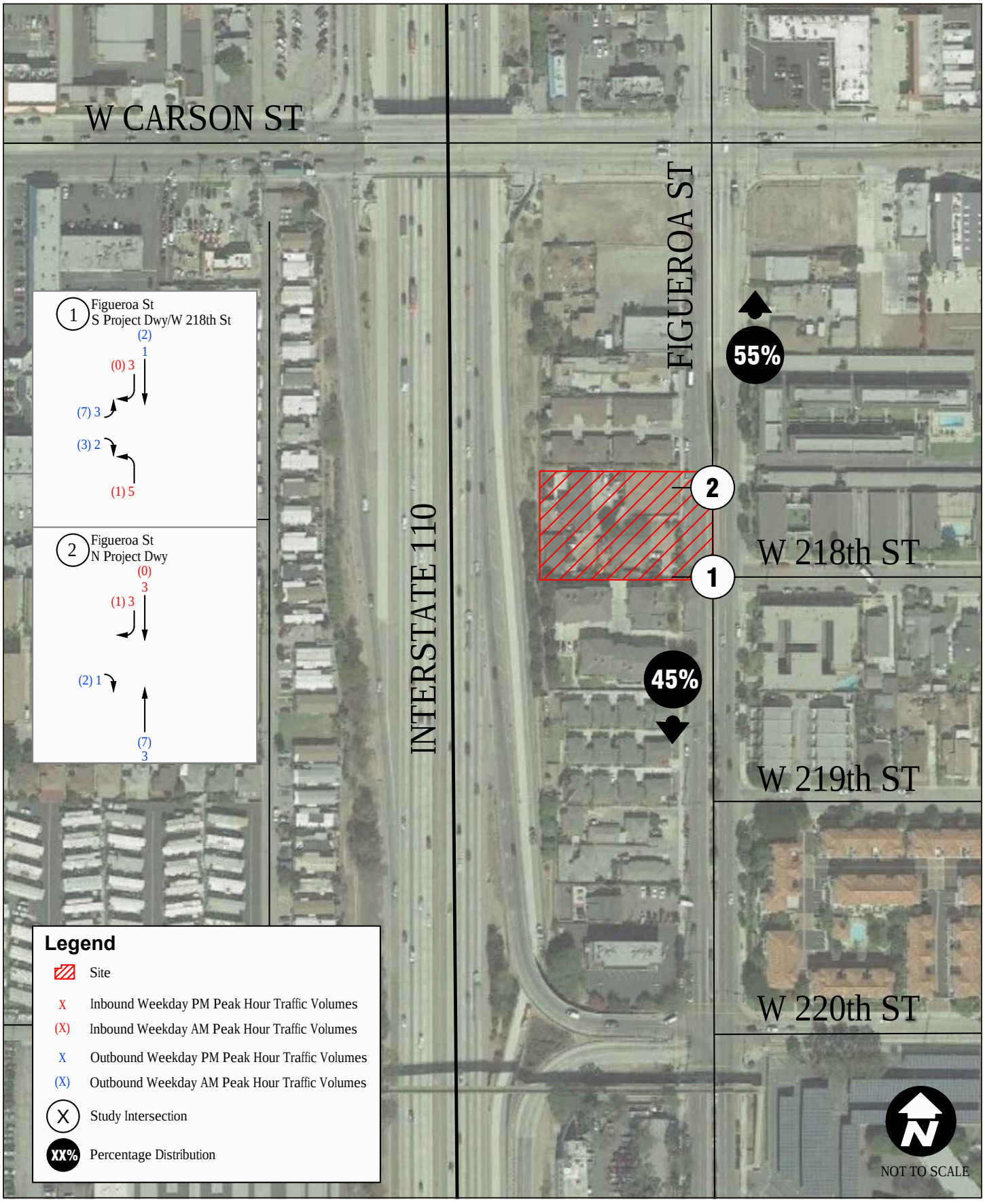

FIGURE 6

Project Trip Distribution and Assignment

Birch Specific Plan MND

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APPENDIX A

Air Quality and Greenhouse Gas Emissions Modeling

CalEEMod Version: CalEEMod.2016.3.2

Date: 11/6/2017 8:54 AM

Birch Specific Plan

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	73.00	Space	0.66	29,200.00	0
Condo/Townhouse	32.00	Dwelling Unit	0.77	46,062.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Birch Specific Plan. SCAQMD.

Land Use - 32 unit condominum

Construction Phase - Default construction schedule: June 2018 to May 2019.

Demolition - Demolition of 6,195 sf in existing residential.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Grading - Balanced onsite.

Trips and VMT - Default trips.

Construction Off-road Equipment Mitigation - Comply with Rule 403: Water three times daily.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.35	0.88
tblEnergyUse	NT24E	3,795.01	4,109.59
tblEnergyUse	T24E	186.63	211.36
tblEnergyUse	T24NG	13,424.50	16,993.04
tblLandUse	LandUseSquareFeet	32,000.00	46,062.00
tblLandUse	LotAcreage	2.00	0.77

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2078	1.4735	1.1739	2.0900e-003	0.0480	0.0842	0.1322	0.0163	0.0808	0.0971	0.0000	180.4107	180.4107	0.0320	0.0000	181.2100
2019	0.2469	0.6862	0.6196	1.1300e-003	0.0172	0.0375	0.0547	4.6000e-003	0.0361	0.0407	0.0000	96.5710	96.5710	0.0160	0.0000	96.9697
Maximum	**0.2469**	**1.4735**	**1.1739**	**2.0900e-003**	**0.0480**	**0.0842**	**0.1322**	**0.0163**	**0.0808**	**0.0971**	**0.0000**	**180.4107**	**180.4107**	**0.0320**	**0.0000**	**181.2100**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2078	1.4735	1.1739	2.0900e-003	0.0366	0.0842	0.1208	0.0112	0.0808	0.0919	0.0000	180.4105	180.4105	0.0320	0.0000	181.2099
2019	0.2469	0.6862	0.6196	1.1300e-003	0.0172	0.0375	0.0547	4.6000e-003	0.0361	0.0407	0.0000	96.5709	96.5709	0.0160	0.0000	96.9696
Maximum	**0.2469**	**1.4735**	**1.1739**	**2.0900e-003**	**0.0366**	**0.0842**	**0.1208**	**0.0112**	**0.0808**	**0.0919**	**0.0000**	**180.4105**	**180.4105**	**0.0320**	**0.0000**	**181.2099**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**17.50**	**0.00**	**6.10**	**24.67**	**0.00**	**3.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2981	0.0121	0.5355	5.4000e-004		0.0324	0.0324		0.0324	0.0324	3.3990	7.0726	10.4716	0.0107	2.3000e-004	10.8070
Energy	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	100.1892	100.1892	3.2900e-003	1.2200e-003	100.6340
Mobile	0.0623	0.3512	0.8544	2.9500e-003	0.2348	3.0000e-003	0.2378	0.0629	2.8200e-003	0.0657	0.0000	272.0070	272.0070	0.0139	0.0000	272.3541
Waste						0.0000	0.0000		0.0000	0.0000	2.9880	0.0000	2.9880	0.1766	0.0000	7.4027
Water						0.0000	0.0000		0.0000	0.0000	0.6615	13.4031	14.0646	0.0685	1.7200e-003	16.2886
Total	**0.3642**	**0.3956**	**1.4036**	**3.7000e-003**	**0.2348**	**0.0380**	**0.2728**	**0.0629**	**0.0378**	**0.1007**	**7.0485**	**392.6719**	**399.7204**	**0.2729**	**3.1700e-003**	**407.4865**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2981	0.0121	0.5355	5.4000e-004		0.0324	0.0324		0.0324	0.0324	3.3990	7.0726	10.4716	0.0107	2.3000e-004	10.8070
Energy	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	100.1892	100.1892	3.2900e-003	1.2200e-003	100.6340
Mobile	0.0623	0.3512	0.8544	2.9500e-003	0.2348	3.0000e-003	0.2378	0.0629	2.8200e-003	0.0657	0.0000	272.0070	272.0070	0.0139	0.0000	272.3541
Waste						0.0000	0.0000		0.0000	0.0000	2.9880	0.0000	2.9880	0.1766	0.0000	7.4027
Water						0.0000	0.0000		0.0000	0.0000	0.6615	13.4031	14.0646	0.0685	1.7200e-003	16.2886
Total	**0.3642**	**0.3956**	**1.4036**	**3.7000e-003**	**0.2348**	**0.0380**	**0.2728**	**0.0629**	**0.0378**	**0.1007**	**7.0485**	**392.6719**	**399.7204**	**0.2729**	**3.1700e-003**	**407.4865**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2018	6/28/2018	5	20	
2	Site Preparation	Site Preparation	6/29/2018	7/2/2018	5	2	
3	Grading	Grading	7/3/2018	7/6/2018	5	4	
4	Building Construction	Building Construction	7/7/2018	4/12/2019	5	200	
5	Paving	Paving	4/13/2019	4/26/2019	5	10	
6	Architectural Coating	Architectural Coating	4/27/2019	5/10/2019	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.66

Residential Indoor: 93,276; Residential Outdoor: 31,092; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41

Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	28.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0500e-003	0.0000	3.0500e-003	4.6000e-004	0.0000	4.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**3.0500e-003**	**0.0144**	**0.0174**	**4.6000e-004**	**0.0134**	**0.0139**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.4500e-003	8.3000e-004	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0800	1.0800	8.0000e-005	0.0000	1.0819
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.7000e-004	6.0700e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3683	1.3683	5.0000e-005	0.0000	1.3694
Total	**8.1000e-004**	**5.0200e-003**	**6.9000e-003**	**3.0000e-005**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**4.5000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**2.4482**	**2.4482**	**1.3000e-004**	**0.0000**	**2.4513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1900e-003	0.0000	1.1900e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0248	0.2436	0.1511	2.4000e-004		0.0144	0.0144		0.0134	0.0134	0.0000	21.6923	21.6923	5.5000e-003	0.0000	21.8297
Total	**0.0248**	**0.2436**	**0.1511**	**2.4000e-004**	**1.1900e-003**	**0.0144**	**0.0156**	**1.8000e-004**	**0.0134**	**0.0136**	**0.0000**	**21.6923**	**21.6923**	**5.5000e-003**	**0.0000**	**21.8297**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2000e-004	4.4500e-003	8.3000e-004	1.0000e-005	2.4000e-004	2.0000e-005	2.6000e-004	7.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.0800	1.0800	8.0000e-005	0.0000	1.0819
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.7000e-004	6.0700e-003	2.0000e-005	1.4300e-003	1.0000e-005	1.4400e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3683	1.3683	5.0000e-005	0.0000	1.3694
Total	**8.1000e-004**	**5.0200e-003**	**6.9000e-003**	**3.0000e-005**	**1.6700e-003**	**3.0000e-005**	**1.7000e-003**	**4.5000e-004**	**3.0000e-005**	**4.7000e-004**	**0.0000**	**2.4482**	**2.4482**	**1.3000e-004**	**0.0000**	**2.4513**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0208	8.0800e-003	2.0000e-005		9.5000e-004	9.5000e-004		8.8000e-004	8.8000e-004	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866
Total	**1.8100e-003**	**0.0208**	**8.0800e-003**	**2.0000e-005**	**5.8000e-003**	**9.5000e-004**	**6.7500e-003**	**2.9500e-003**	**8.8000e-004**	**3.8300e-003**	**0.0000**	**1.5743**	**1.5743**	**4.9000e-004**	**0.0000**	**1.5866**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0842	0.0842	0.0000	0.0000	0.0843
Total	**4.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0842**	**0.0842**	**0.0000**	**0.0000**	**0.0843**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.2600e-003	0.0000	2.2600e-003	1.1500e-003	0.0000	1.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8100e-003	0.0208	8.0800e-003	2.0000e-005		9.5000e-004	9.5000e-004		8.8000e-004	8.8000e-004	0.0000	1.5743	1.5743	4.9000e-004	0.0000	1.5866
Total	**1.8100e-003**	**0.0208**	**8.0800e-003**	**2.0000e-005**	**2.2600e-003**	**9.5000e-004**	**3.2100e-003**	**1.1500e-003**	**8.8000e-004**	**2.0300e-003**	**0.0000**	**1.5743**	**1.5743**	**4.9000e-004**	**0.0000**	**1.5866**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0842	0.0842	0.0000	0.0000	0.0843
Total	**4.0000e-005**	**3.0000e-005**	**3.7000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0842**	**0.0842**	**0.0000**	**0.0000**	**0.0843**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0341	0.0135	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988
Total	**2.9900e-003**	**0.0341**	**0.0135**	**3.0000e-005**	**9.8300e-003**	**1.5900e-003**	**0.0114**	**5.0500e-003**	**1.4600e-003**	**6.5100e-003**	**0.0000**	**2.5787**	**2.5787**	**8.0000e-004**	**0.0000**	**2.5988**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.5000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1684	0.1684	1.0000e-005	0.0000	0.1685
Total	**9.0000e-005**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1684**	**0.1684**	**1.0000e-005**	**0.0000**	**0.1685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.8300e-003	0.0000	3.8300e-003	1.9700e-003	0.0000	1.9700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9900e-003	0.0341	0.0135	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	2.5787	2.5787	8.0000e-004	0.0000	2.5988
Total	**2.9900e-003**	**0.0341**	**0.0135**	**3.0000e-005**	**3.8300e-003**	**1.5900e-003**	**5.4200e-003**	**1.9700e-003**	**1.4600e-003**	**3.4300e-003**	**0.0000**	**2.5787**	**2.5787**	**8.0000e-004**	**0.0000**	**2.5988**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	7.5000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1684	0.1684	1.0000e-005	0.0000	0.1685
Total	**9.0000e-005**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1684**	**0.1684**	**1.0000e-005**	**0.0000**	**0.1685**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1633	1.0980	0.8742	1.3900e-003		0.0667	0.0667		0.0644	0.0644	0.0000	116.0678	116.0678	0.0234	0.0000	116.6519
Total	**0.1633**	**1.0980**	**0.8742**	**1.3900e-003**		**0.0667**	**0.0667**		**0.0644**	**0.0644**	**0.0000**	**116.0678**	**116.0678**	**0.0234**	**0.0000**	**116.6519**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1800e-003	0.0623	0.0161	1.3000e-004	3.1800e-003	4.5000e-004	3.6300e-003	9.2000e-004	4.3000e-004	1.3500e-003	0.0000	12.5891	12.5891	9.0000e-004	0.0000	12.6115
Worker	0.0117	9.5900e-003	0.1029	2.6000e-004	0.0242	2.0000e-004	0.0244	6.4200e-003	1.8000e-004	6.6100e-003	0.0000	23.2077	23.2077	7.9000e-004	0.0000	23.2275
Total	**0.0139**	**0.0719**	**0.1190**	**3.9000e-004**	**0.0274**	**6.5000e-004**	**0.0280**	**7.3400e-003**	**6.1000e-004**	**7.9600e-003**	**0.0000**	**35.7968**	**35.7968**	**1.6900e-003**	**0.0000**	**35.8390**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1633	1.0980	0.8742	1.3900e-003		0.0667	0.0667		0.0644	0.0644	0.0000	116.0677	116.0677	0.0234	0.0000	116.6518
Total	**0.1633**	**1.0980**	**0.8742**	**1.3900e-003**		**0.0667**	**0.0667**		**0.0644**	**0.0644**	**0.0000**	**116.0677**	**116.0677**	**0.0234**	**0.0000**	**116.6518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1800e-003	0.0623	0.0161	1.3000e-004	3.1800e-003	4.5000e-004	3.6300e-003	9.2000e-004	4.3000e-004	1.3500e-003	0.0000	12.5891	12.5891	9.0000e-004	0.0000	12.6115
Worker	0.0117	9.5900e-003	0.1029	2.6000e-004	0.0242	2.0000e-004	0.0244	6.4200e-003	1.8000e-004	6.6100e-003	0.0000	23.2077	23.2077	7.9000e-004	0.0000	23.2275
Total	**0.0139**	**0.0719**	**0.1190**	**3.9000e-004**	**0.0274**	**6.5000e-004**	**0.0280**	**7.3400e-003**	**6.1000e-004**	**7.9600e-003**	**0.0000**	**35.7968**	**35.7968**	**1.6900e-003**	**0.0000**	**35.8390**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0841	0.5913	0.4990	8.2000e-004		0.0339	0.0339		0.0327	0.0327	0.0000	67.7366	67.7366	0.0130	0.0000	68.0622
Total	**0.0841**	**0.5913**	**0.4990**	**8.2000e-004**		**0.0339**	**0.0339**		**0.0327**	**0.0327**	**0.0000**	**67.7366**	**67.7366**	**0.0130**	**0.0000**	**68.0622**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1600e-003	0.0345	8.6600e-003	8.0000e-005	1.8700e-003	2.3000e-004	2.0900e-003	5.4000e-004	2.2000e-004	7.5000e-004	0.0000	7.3281	7.3281	5.1000e-004	0.0000	7.3408
Worker	6.2500e-003	4.9700e-003	0.0540	1.5000e-004	0.0142	1.1000e-004	0.0143	3.7700e-003	1.0000e-004	3.8800e-003	0.0000	13.1998	13.1998	4.1000e-004	0.0000	13.2102
Total	**7.4100e-003**	**0.0395**	**0.0627**	**2.3000e-004**	**0.0161**	**3.4000e-004**	**0.0164**	**4.3100e-003**	**3.2000e-004**	**4.6300e-003**	**0.0000**	**20.5279**	**20.5279**	**9.2000e-004**	**0.0000**	**20.5509**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0841	0.5913	0.4990	8.2000e-004		0.0339	0.0339		0.0327	0.0327	0.0000	67.7365	67.7365	0.0130	0.0000	68.0621
Total	**0.0841**	**0.5913**	**0.4990**	**8.2000e-004**		**0.0339**	**0.0339**		**0.0327**	**0.0327**	**0.0000**	**67.7365**	**67.7365**	**0.0130**	**0.0000**	**68.0621**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1600e-003	0.0345	8.6600e-003	8.0000e-005	1.8700e-003	2.3000e-004	2.0900e-003	5.4000e-004	2.2000e-004	7.5000e-004	0.0000	7.3281	7.3281	5.1000e-004	0.0000	7.3408
Worker	6.2500e-003	4.9700e-003	0.0540	1.5000e-004	0.0142	1.1000e-004	0.0143	3.7700e-003	1.0000e-004	3.8800e-003	0.0000	13.1998	13.1998	4.1000e-004	0.0000	13.2102
Total	**7.4100e-003**	**0.0395**	**0.0627**	**2.3000e-004**	**0.0161**	**3.4000e-004**	**0.0164**	**4.3100e-003**	**3.2000e-004**	**4.6300e-003**	**0.0000**	**20.5279**	**20.5279**	**9.2000e-004**	**0.0000**	**20.5509**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	8.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3800e-003**	**0.0459**	**0.0445**	**7.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**6.0105**	**6.0105**	**1.8700e-003**	**0.0000**	**6.0572**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.5000e-004	2.7100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6625	0.6625	2.0000e-005	0.0000	0.6631
Total	**3.1000e-004**	**2.5000e-004**	**2.7100e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6625**	**0.6625**	**2.0000e-005**	**0.0000**	**0.6631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5200e-003	0.0459	0.0445	7.0000e-005		2.6100e-003	2.6100e-003		2.4100e-003	2.4100e-003	0.0000	6.0105	6.0105	1.8700e-003	0.0000	6.0572
Paving	8.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.3800e-003**	**0.0459**	**0.0445**	**7.0000e-005**		**2.6100e-003**	**2.6100e-003**		**2.4100e-003**	**2.4100e-003**	**0.0000**	**6.0105**	**6.0105**	**1.8700e-003**	**0.0000**	**6.0572**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1000e-004	2.5000e-004	2.7100e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.2000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.6625	0.6625	2.0000e-005	0.0000	0.6631
Total	**3.1000e-004**	**2.5000e-004**	**2.7100e-003**	**1.0000e-005**	**7.1000e-004**	**1.0000e-005**	**7.2000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.6625**	**0.6625**	**2.0000e-005**	**0.0000**	**0.6631**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1482					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.1495**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.4600e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3568	0.3568	1.0000e-005	0.0000	0.3570
Total	**1.7000e-004**	**1.3000e-004**	**1.4600e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3568**	**0.3568**	**1.0000e-005**	**0.0000**	**0.3570**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1482					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3300e-003	9.1800e-003	9.2100e-003	1.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	1.2766	1.2766	1.1000e-004	0.0000	1.2793
Total	**0.1495**	**9.1800e-003**	**9.2100e-003**	**1.0000e-005**		**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.1000e-004**	**0.0000**	**1.2793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.4600e-003	0.0000	3.8000e-004	0.0000	3.9000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3568	0.3568	1.0000e-005	0.0000	0.3570
Total	**1.7000e-004**	**1.3000e-004**	**1.4600e-003**	**0.0000**	**3.8000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3568**	**0.3568**	**1.0000e-005**	**0.0000**	**0.3570**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0623	0.3512	0.8544	2.9500e-003	0.2348	3.0000e-003	0.2378	0.0629	2.8200e-003	0.0657	0.0000	272.0070	272.0070	0.0139	0.0000	272.3541
Unmitigated	0.0623	0.3512	0.8544	2.9500e-003	0.2348	3.0000e-003	0.2378	0.0629	2.8200e-003	0.0657	0.0000	272.0070	272.0070	0.0139	0.0000	272.3541

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	185.92	181.44	154.88	617,977	617,977
Parking Lot	0.00	0.00	0.00		
Total	185.92	181.44	154.88	617,977	617,977

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Parking Lot	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.9215	62.9215	2.5800e-003	5.3000e-004	63.1449
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.9215	62.9215	2.5800e-003	5.3000e-004	63.1449
NaturalGas Mitigated	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2676	37.2676	7.1000e-004	6.8000e-004	37.4891
NaturalGas Unmitigated	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2676	37.2676	7.1000e-004	6.8000e-004	37.4891

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	698369	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2676	37.2676	7.1000e-004	6.8000e-004	37.4891
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.7700e-003**	**0.0322**	**0.0137**	**2.1000e-004**		**2.6000e-003**	**2.6000e-003**		**2.6000e-003**	**2.6000e-003**	**0.0000**	**37.2676**	**37.2676**	**7.1000e-004**	**6.8000e-004**	**37.4891**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	698369	3.7700e-003	0.0322	0.0137	2.1000e-004		2.6000e-003	2.6000e-003		2.6000e-003	2.6000e-003	0.0000	37.2676	37.2676	7.1000e-004	6.8000e-004	37.4891
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.7700e-003**	**0.0322**	**0.0137**	**2.1000e-004**		**2.6000e-003**	**2.6000e-003**		**2.6000e-003**	**2.6000e-003**	**0.0000**	**37.2676**	**37.2676**	**7.1000e-004**	**6.8000e-004**	**37.4891**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	170306	54.6724	2.2400e-003	4.6000e-004	54.8666
Parking Lot	25696	8.2491	3.4000e-004	7.0000e-005	8.2784
Total		**62.9215**	**2.5800e-003**	**5.3000e-004**	**63.1449**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	170306	54.6724	2.2400e-003	4.6000e-004	54.8666
Parking Lot	25696	8.2491	3.4000e-004	7.0000e-005	8.2784
Total		**62.9215**	**2.5800e-003**	**5.3000e-004**	**63.1449**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2981	0.0121	0.5355	5.4000e-004		0.0324	0.0324		0.0324	0.0324	3.3990	7.0726	10.4716	0.0107	2.3000e-004	10.8070
Unmitigated	0.2981	0.0121	0.5355	5.4000e-004		0.0324	0.0324		0.0324	0.0324	3.3990	7.0726	10.4716	0.0107	2.3000e-004	10.8070

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1683					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1048	8.3000e-003	0.2034	5.2000e-004		0.0306	0.0306		0.0306	0.0306	3.3990	6.5317	9.9307	0.0101	2.3000e-004	10.2529
Landscaping	0.0102	3.8400e-003	0.3320	2.0000e-005		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	0.5409	0.5409	5.3000e-004	0.0000	0.5541
Total	**0.2981**	**0.0121**	**0.5355**	**5.4000e-004**		**0.0324**	**0.0324**		**0.0324**	**0.0324**	**3.3990**	**7.0726**	**10.4716**	**0.0107**	**2.3000e-004**	**10.8070**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0148					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1683					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1048	8.3000e-003	0.2034	5.2000e-004		0.0306	0.0306		0.0306	0.0306	3.3990	6.5317	9.9307	0.0101	2.3000e-004	10.2529
Landscaping	0.0102	3.8400e-003	0.3320	2.0000e-005		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	0.5409	0.5409	5.3000e-004	0.0000	0.5541
Total	**0.2981**	**0.0121**	**0.5355**	**5.4000e-004**		**0.0324**	**0.0324**		**0.0324**	**0.0324**	**3.3990**	**7.0726**	**10.4716**	**0.0107**	**2.3000e-004**	**10.8070**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.0646	0.0685	1.7200e-003	16.2886
Unmitigated	14.0646	0.0685	1.7200e-003	16.2886

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.08493 / 1.31441	14.0646	0.0685	1.7200e-003	16.2886
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**14.0646**	**0.0685**	**1.7200e-003**	**16.2886**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	2.08493 / 1.31441	14.0646	0.0685	1.7200e-003	16.2886
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**14.0646**	**0.0685**	**1.7200e-003**	**16.2886**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.9880	0.1766	0.0000	7.4027
Unmitigated	2.9880	0.1766	0.0000	7.4027

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	14.72	2.9880	0.1766	0.0000	7.4027
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.9880**	**0.1766**	**0.0000**	**7.4027**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	14.72	2.9880	0.1766	0.0000	7.4027
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.9880**	**0.1766**	**0.0000**	**7.4027**

CalEEMod Version: CalEEMod.2016.3.2

Date: 11/6/2017 8:51 AM

Birch Specific Plan

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	73.00	Space	0.66	29,200.00	0
Condo/Townhouse	32.00	Dwelling Unit	0.77	46,062.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Birch Specific Plan. SCAQMD.

Land Use - 32 unit condominum

Construction Phase - Default construction schedule: June 2018 to May 2019.

Demolition - Demolition of 6,195 sf in existing residential.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Grading - Balanced onsite.

Trips and VMT - Default trips.

Construction Off-road Equipment Mitigation - Comply with Rule 403: Water three times daily.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.35	0.88
tblEnergyUse	NT24E	3,795.01	4,109.59
tblEnergyUse	T24E	186.63	211.36
tblEnergyUse	T24NG	13,424.50	16,993.04
tblLandUse	LandUseSquareFeet	32,000.00	46,062.00
tblLandUse	LotAcreage	2.00	0.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8145	24.8454	15.8742	0.0284	5.8890	1.4393	6.8420	2.9774	1.3455	3.8541	0.0000	2,680.5384	2,680.5384	0.6194	0.0000	2,691.5022
2019	29.9351	17.0149	15.2810	0.0283	0.4424	0.9250	1.3674	0.1185	0.8932	1.0117	0.0000	2,652.3443	2,652.3443	0.4160	0.0000	2,662.7317
Maximum	**29.9351**	**24.8454**	**15.8742**	**0.0284**	**5.8890**	**1.4393**	**6.8420**	**2.9774**	**1.3455**	**3.8541**	**0.0000**	**2,680.5384**	**2,680.5384**	**0.6194**	**0.0000**	**2,691.5022**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8145	24.8454	15.8742	0.0284	2.3513	1.4393	3.3042	1.1757	1.3455	2.0524	0.0000	2,680.5384	2,680.5384	0.6194	0.0000	2,691.5022
2019	29.9351	17.0149	15.2810	0.0283	0.4424	0.9250	1.3674	0.1185	0.8932	1.0117	0.0000	2,652.3443	2,652.3443	0.4160	0.0000	2,662.7317
Maximum	**29.9351**	**24.8454**	**15.8742**	**0.0284**	**2.3513**	**1.4393**	**3.3042**	**1.1757**	**1.3455**	**2.0524**	**0.0000**	**2,680.5384**	**2,680.5384**	**0.6194**	**0.0000**	**2,691.5022**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.88**	**0.00**	**43.09**	**58.20**	**0.00**	**37.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Energy	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Mobile	0.3768	1.9039	5.0725	0.0174	1.3509	0.0169	1.3678	0.3615	0.0159	0.3774		1,763.2777	1,763.2777	0.0872		1,765.4581
Total	**9.8675**	**2.7749**	**24.0775**	**0.0601**	**1.3509**	**2.4902**	**3.8411**	**0.3615**	**2.4892**	**2.8507**	**299.7414**	**2,569.1462**	**2,868.8876**	**0.9901**	**0.0245**	**2,900.9324**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Energy	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Mobile	0.3768	1.9039	5.0725	0.0174	1.3509	0.0169	1.3678	0.3615	0.0159	0.3774		1,763.2777	1,763.2777	0.0872		1,765.4581
Total	**9.8675**	**2.7749**	**24.0775**	**0.0601**	**1.3509**	**2.4902**	**3.8411**	**0.3615**	**2.4892**	**2.8507**	**299.7414**	**2,569.1462**	**2,868.8876**	**0.9901**	**0.0245**	**2,900.9324**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2018	6/28/2018	5	20	
2	Site Preparation	Site Preparation	6/29/2018	7/2/2018	5	2	
3	Grading	Grading	7/3/2018	7/6/2018	5	4	
4	Building Construction	Building Construction	7/7/2018	4/12/2019	5	200	
5	Paving	Paving	4/13/2019	4/26/2019	5	10	
6	Architectural Coating	Architectural Coating	4/27/2019	5/10/2019	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.66

Residential Indoor: 93,276; Residential Outdoor: 31,092; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	28.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3049	0.0000	0.3049	0.0462	0.0000	0.0462			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.3049**	**1.4365**	**1.7414**	**0.0462**	**1.3429**	**1.3891**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0121	0.4311	0.0798	1.1100e-003	0.0245	1.6600e-003	0.0261	6.7000e-003	1.5900e-003	8.2900e-003		119.9501	119.9501	8.2000e-003		120.1552
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0822**	**0.4813**	**0.7321**	**2.7000e-003**	**0.1698**	**2.8200e-003**	**0.1726**	**0.0452**	**2.6600e-003**	**0.0479**		**278.4658**	**278.4658**	**0.0136**		**278.8060**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1189	0.0000	0.1189	0.0180	0.0000	0.0180			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1189**	**1.4365**	**1.5554**	**0.0180**	**1.3429**	**1.3609**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0121	0.4311	0.0798	1.1100e-003	0.0245	1.6600e-003	0.0261	6.7000e-003	1.5900e-003	8.2900e-003		119.9501	119.9501	8.2000e-003		120.1552
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0701	0.0502	0.6523	1.5900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		158.5157	158.5157	5.4100e-003		158.6508
Total	**0.0822**	**0.4813**	**0.7321**	**2.7000e-003**	**0.1698**	**2.8200e-003**	**0.1726**	**0.0452**	**2.6600e-003**	**0.0479**		**278.4658**	**278.4658**	**0.0136**		**278.8060**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.7996**	**0.9523**	**6.7518**	**2.9537**	**0.8761**	**3.8298**		**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	**0.0431**	**0.0309**	**0.4014**	**9.8000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.5481**	**97.5481**	**3.3300e-003**		**97.6313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**2.2618**	**0.9523**	**3.2141**	**1.1519**	**0.8761**	**2.0280**	**0.0000**	**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	**0.0431**	**0.0309**	**0.4014**	**9.8000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.5481**	**97.5481**	**3.3300e-003**		**97.6313**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.9143**	**0.7947**	**5.7090**	**2.5256**	**0.7311**	**3.2568**		**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	**0.0431**	**0.0309**	**0.4014**	**9.8000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.5481**	**97.5481**	**3.3300e-003**		**97.6313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9166	0.0000	1.9166	0.9850	0.0000	0.9850			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**1.9166**	**0.7947**	**2.7113**	**0.9850**	**0.7311**	**1.7161**	**0.0000**	**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0431	0.0309	0.4014	9.8000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		97.5481	97.5481	3.3300e-003		97.6313
Total	**0.0431**	**0.0309**	**0.4014**	**9.8000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**97.5481**	**97.5481**	**3.3300e-003**		**97.6313**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**		**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0340	0.9695	0.2414	2.0900e-003	0.0512	7.0800e-003	0.0583	0.0147	6.7800e-003	0.0215		222.9264	222.9264	0.0152		223.3057
Worker	0.1886	0.1352	1.7562	4.2900e-003	0.3912	3.1200e-003	0.3943	0.1038	2.8700e-003	0.1066		426.7731	426.7731	0.0146		427.1369
Total	**0.2226**	**1.1047**	**1.9976**	**6.3800e-003**	**0.4424**	**0.0102**	**0.4526**	**0.1185**	**9.6500e-003**	**0.1282**		**649.6995**	**649.6995**	**0.0297**		**650.4426**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**	**0.0000**	**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0340	0.9695	0.2414	2.0900e-003	0.0512	7.0800e-003	0.0583	0.0147	6.7800e-003	0.0215		222.9264	222.9264	0.0152		223.3057
Worker	0.1886	0.1352	1.7562	4.2900e-003	0.3912	3.1200e-003	0.3943	0.1038	2.8700e-003	0.1066		426.7731	426.7731	0.0146		427.1369
Total	**0.2226**	**1.1047**	**1.9976**	**6.3800e-003**	**0.4424**	**0.0102**	**0.4526**	**0.1185**	**9.6500e-003**	**0.1282**		**649.6995**	**649.6995**	**0.0297**		**650.4426**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**		**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0308	0.9154	0.2213	2.0700e-003	0.0512	6.0600e-003	0.0573	0.0147	5.8000e-003	0.0205		220.9758	220.9758	0.0146		221.3413
Worker	0.1714	0.1193	1.5727	4.1500e-003	0.3912	3.0400e-003	0.3943	0.1038	2.8100e-003	0.1066		413.3462	413.3462	0.0129		413.6694
Total	**0.2023**	**1.0347**	**1.7940**	**6.2200e-003**	**0.4424**	**9.1000e-003**	**0.4515**	**0.1185**	**8.6100e-003**	**0.1271**		**634.3219**	**634.3219**	**0.0276**		**635.0106**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**	**0.0000**	**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0308	0.9154	0.2213	2.0700e-003	0.0512	6.0600e-003	0.0573	0.0147	5.8000e-003	0.0205		220.9758	220.9758	0.0146		221.3413
Worker	0.1714	0.1193	1.5727	4.1500e-003	0.3912	3.0400e-003	0.3943	0.1038	2.8100e-003	0.1066		413.3462	413.3462	0.0129		413.6694
Total	**0.2023**	**1.0347**	**1.7940**	**6.2200e-003**	**0.4424**	**9.1000e-003**	**0.4515**	**0.1185**	**8.6100e-003**	**0.1271**		**634.3219**	**634.3219**	**0.0276**		**635.0106**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0768**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**		**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486
Total	**0.0637**	**0.0443**	**0.5841**	**1.5400e-003**	**0.1453**	**1.1300e-003**	**0.1464**	**0.0385**	**1.0400e-003**	**0.0396**		**153.5286**	**153.5286**	**4.8000e-003**		**153.6486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0768**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**	**0.0000**	**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0637	0.0443	0.5841	1.5400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		153.5286	153.5286	4.8000e-003		153.6486
Total	**0.0637**	**0.0443**	**0.5841**	**1.5400e-003**	**0.1453**	**1.1300e-003**	**0.1464**	**0.0385**	**1.0400e-003**	**0.0396**		**153.5286**	**153.5286**	**4.8000e-003**		**153.6486**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	29.6343					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**29.9008**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0239	0.3145	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6692	82.6692	2.5900e-003		82.7339
Total	**0.0343**	**0.0239**	**0.3145**	**8.3000e-004**	**0.0782**	**6.1000e-004**	**0.0789**	**0.0208**	**5.6000e-004**	**0.0213**		**82.6692**	**82.6692**	**2.5900e-003**		**82.7339**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	29.6343					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**29.9008**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0343	0.0239	0.3145	8.3000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		82.6692	82.6692	2.5900e-003		82.7339
Total	**0.0343**	**0.0239**	**0.3145**	**8.3000e-004**	**0.0782**	**6.1000e-004**	**0.0789**	**0.0208**	**5.6000e-004**	**0.0213**		**82.6692**	**82.6692**	**2.5900e-003**		**82.7339**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3768	1.9039	5.0725	0.0174	1.3509	0.0169	1.3678	0.3615	0.0159	0.3774		1,763.2777	1,763.2777	0.0872		1,765.4581
Unmitigated	0.3768	1.9039	5.0725	0.0174	1.3509	0.0169	1.3678	0.3615	0.0159	0.3774		1,763.2777	1,763.2777	0.0872		1,765.4581

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	185.92	181.44	154.88	617,977	617,977
Parking Lot	0.00	0.00	0.00		
Total	185.92	181.44	154.88	617,977	617,977

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Parking Lot	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
NaturalGas Unmitigated	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1913.34	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0206**	**0.1763**	**0.0750**	**1.1300e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**		**225.0989**	**225.0989**	**4.3100e-003**	**4.1300e-003**	**226.4365**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1.91334	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0206**	**0.1763**	**0.0750**	**1.1300e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**		**225.0989**	**225.0989**	**4.3100e-003**	**4.1300e-003**	**226.4365**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Unmitigated	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	8.3852	0.6640	16.2737	0.0415		2.4444	2.4444		2.4444	2.4444	299.7414	576.0000	875.7414	0.8939	0.0203	904.1512
Landscaping	0.0814	0.0307	2.6563	1.4000e-004		0.0146	0.0146		0.0146	0.0146		4.7697	4.7697	4.6800e-003		4.8866
Total	**9.4701**	**0.6947**	**18.9300**	**0.0417**		**2.4590**	**2.4590**		**2.4590**	**2.4590**	**299.7414**	**580.7697**	**880.5110**	**0.8986**	**0.0203**	**909.0378**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	8.3852	0.6640	16.2737	0.0415		2.4444	2.4444		2.4444	2.4444	299.7414	576.0000	875.7414	0.8939	0.0203	904.1512
Landscaping	0.0814	0.0307	2.6563	1.4000e-004		0.0146	0.0146		0.0146	0.0146		4.7697	4.7697	4.6800e-003		4.8866
Total	**9.4701**	**0.6947**	**18.9300**	**0.0417**		**2.4590**	**2.4590**		**2.4590**	**2.4590**	**299.7414**	**580.7697**	**880.5110**	**0.8986**	**0.0203**	**909.0378**

CalEEMod Version: CalEEMod.2016.3.2

Date: 11/6/2017 8:47 AM

Birch Specific Plan

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	73.00	Space	0.66	29,200.00	0
Condo/Townhouse	32.00	Dwelling Unit	0.77	46,062.00	92

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	11			**Operational Year**	2020
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.43	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Birch Specific Plan. SCAQMD.

Land Use - 32 unit condominum

Construction Phase - Default construction schedule: June 2018 to May 2019.

Demolition - Demolition of 6,195 sf in existing residential.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Off-road Equipment - Default construction equipment.

Grading - Balanced onsite.

Trips and VMT - Default trips.

Construction Off-road Equipment Mitigation - Comply with Rule 403: Water three times daily.

Table Name	Column Name	Default Value	New Value
tblEnergyUse	LightingElect	0.35	0.88
tblEnergyUse	NT24E	3,795.01	4,109.59
tblEnergyUse	T24E	186.63	211.36
tblEnergyUse	T24NG	13,424.50	16,993.04
tblLandUse	LandUseSquareFeet	32,000.00	46,062.00
tblLandUse	LotAcreage	2.00	0.77

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8325	24.8562	15.7876	0.0281	5.8890	1.4393	6.8420	2.9774	1.3456	3.8541	0.0000	2,657.2526	2,657.2526	0.6194	0.0000	2,672.7383
2019	29.9381	17.0269	15.1523	0.0279	0.4424	0.9250	1.3675	0.1185	0.8933	1.0118	0.0000	2,619.3049	2,619.3049	0.4157	0.0000	2,629.6983
Maximum	**29.9381**	**24.8562**	**15.7876**	**0.0281**	**5.8890**	**1.4393**	**6.8420**	**2.9774**	**1.3456**	**3.8541**	**0.0000**	**2,657.2526**	**2,657.2526**	**0.6194**	**0.0000**	**2,672.7383**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.8325	24.8562	15.7876	0.0281	2.3513	1.4393	3.3042	1.1757	1.3456	2.0524	0.0000	2,657.2526	2,657.2526	0.6194	0.0000	2,672.7383
2019	29.9381	17.0269	15.1523	0.0279	0.4424	0.9250	1.3675	0.1185	0.8933	1.0118	0.0000	2,619.3049	2,619.3049	0.4157	0.0000	2,629.6983
Maximum	**29.9381**	**24.8562**	**15.7876**	**0.0281**	**2.3513**	**1.4393**	**3.3042**	**1.1757**	**1.3456**	**2.0524**	**0.0000**	**2,657.2526**	**2,657.2526**	**0.6194**	**0.0000**	**2,672.7383**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**55.88**	**0.00**	**43.09**	**58.20**	**0.00**	**37.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Energy	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Mobile	0.3591	1.9485	4.7495	0.0164	1.3509	0.0170	1.3679	0.3615	0.0160	0.3775		1,669.2980	1,669.2980	0.0869		1,671.4709
Total	**9.8498**	**2.8195**	**23.7545**	**0.0592**	**1.3509**	**2.4903**	**3.8412**	**0.3615**	**2.4893**	**2.8507**	**299.7414**	**2,475.1665**	**2,774.9079**	**0.9898**	**0.0245**	**2,806.9452**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Energy	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Mobile	0.3591	1.9485	4.7495	0.0164	1.3509	0.0170	1.3679	0.3615	0.0160	0.3775		1,669.2980	1,669.2980	0.0869		1,671.4709
Total	**9.8498**	**2.8195**	**23.7545**	**0.0592**	**1.3509**	**2.4903**	**3.8412**	**0.3615**	**2.4893**	**2.8507**	**299.7414**	**2,475.1665**	**2,774.9079**	**0.9898**	**0.0245**	**2,806.9452**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2018	6/28/2018	5	20	
2	Site Preparation	Site Preparation	6/29/2018	7/2/2018	5	2	
3	Grading	Grading	7/3/2018	7/6/2018	5	4	
4	Building Construction	Building Construction	7/7/2018	4/12/2019	5	200	
5	Paving	Paving	4/13/2019	4/26/2019	5	10	
6	Architectural Coating	Architectural Coating	4/27/2019	5/10/2019	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0.66

Residential Indoor: 93,276; Residential Outdoor: 31,092; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	28.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	8.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3049	0.0000	0.3049	0.0462	0.0000	0.0462			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429		2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.3049**	**1.4365**	**1.7414**	**0.0462**	**1.3429**	**1.3891**		**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0125	0.4371	0.0866	1.0900e-003	0.0245	1.6900e-003	0.0262	6.7000e-003	1.6200e-003	8.3200e-003		117.7984	117.7984	8.5800e-003		118.0130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0887**	**0.4921**	**0.6769**	**2.5800e-003**	**0.1698**	**2.8500e-003**	**0.1726**	**0.0452**	**2.6900e-003**	**0.0479**		**266.0867**	**266.0867**	**0.0136**		**266.4278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1189	0.0000	0.1189	0.0180	0.0000	0.0180			0.0000			0.0000
Off-Road	2.4838	24.3641	15.1107	0.0241		1.4365	1.4365		1.3429	1.3429	0.0000	2,391.1659	2,391.1659	0.6058		2,406.3105
Total	**2.4838**	**24.3641**	**15.1107**	**0.0241**	**0.1189**	**1.4365**	**1.5554**	**0.0180**	**1.3429**	**1.3609**	**0.0000**	**2,391.1659**	**2,391.1659**	**0.6058**		**2,406.3105**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0125	0.4371	0.0866	1.0900e-003	0.0245	1.6900e-003	0.0262	6.7000e-003	1.6200e-003	8.3200e-003		117.7984	117.7984	8.5800e-003		118.0130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0762	0.0550	0.5903	1.4900e-003	0.1453	1.1600e-003	0.1465	0.0385	1.0700e-003	0.0396		148.2883	148.2883	5.0600e-003		148.4148
Total	**0.0887**	**0.4921**	**0.6769**	**2.5800e-003**	**0.1698**	**2.8500e-003**	**0.1726**	**0.0452**	**2.6900e-003**	**0.0479**		**266.0867**	**266.0867**	**0.0136**		**266.4278**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761		1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**5.7996**	**0.9523**	**6.7518**	**2.9537**	**0.8761**	**3.8298**		**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	**0.0469**	**0.0339**	**0.3633**	**9.2000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.2543**	**91.2543**	**3.1100e-003**		**91.3322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.2618	0.0000	2.2618	1.1519	0.0000	1.1519			0.0000			0.0000
Off-Road	1.8061	20.7472	8.0808	0.0172		0.9523	0.9523		0.8761	0.8761	0.0000	1,735.3630	1,735.3630	0.5402		1,748.8690
Total	**1.8061**	**20.7472**	**8.0808**	**0.0172**	**2.2618**	**0.9523**	**3.2141**	**1.1519**	**0.8761**	**2.0280**	**0.0000**	**1,735.3630**	**1,735.3630**	**0.5402**		**1,748.8690**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	**0.0469**	**0.0339**	**0.3633**	**9.2000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.2543**	**91.2543**	**3.1100e-003**		**91.3322**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311		1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**4.9143**	**0.7947**	**5.7090**	**2.5256**	**0.7311**	**3.2568**		**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	**0.0469**	**0.0339**	**0.3633**	**9.2000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.2543**	**91.2543**	**3.1100e-003**		**91.3322**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9166	0.0000	1.9166	0.9850	0.0000	0.9850			0.0000			0.0000
Off-Road	1.4972	17.0666	6.7630	0.0141		0.7947	0.7947		0.7311	0.7311	0.0000	1,421.2605	1,421.2605	0.4425		1,432.3219
Total	**1.4972**	**17.0666**	**6.7630**	**0.0141**	**1.9166**	**0.7947**	**2.7113**	**0.9850**	**0.7311**	**1.7161**	**0.0000**	**1,421.2605**	**1,421.2605**	**0.4425**		**1,432.3219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0469	0.0339	0.3633	9.2000e-004	0.0894	7.1000e-004	0.0901	0.0237	6.6000e-004	0.0244		91.2543	91.2543	3.1100e-003		91.3322
Total	**0.0469**	**0.0339**	**0.3633**	**9.2000e-004**	**0.0894**	**7.1000e-004**	**0.0901**	**0.0237**	**6.6000e-004**	**0.0244**		**91.2543**	**91.2543**	**3.1100e-003**		**91.3322**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216		2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**		**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0355	0.9711	0.2680	2.0400e-003	0.0512	7.1900e-003	0.0584	0.0147	6.8800e-003	0.0216		216.6052	216.6052	0.0163		217.0126
Worker	0.2051	0.1481	1.5893	4.0100e-003	0.3912	3.1200e-003	0.3943	0.1038	2.8700e-003	0.1066		399.2377	399.2377	0.0136		399.5783
Total	**0.2406**	**1.1192**	**1.8573**	**6.0500e-003**	**0.4424**	**0.0103**	**0.4527**	**0.1185**	**9.7500e-003**	**0.1283**		**615.8429**	**615.8429**	**0.0299**		**616.5910**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.5919	17.4280	13.8766	0.0220		1.0580	1.0580		1.0216	1.0216	0.0000	2,030.8389	2,030.8389	0.4088		2,041.0596
Total	**2.5919**	**17.4280**	**13.8766**	**0.0220**		**1.0580**	**1.0580**		**1.0216**	**1.0216**	**0.0000**	**2,030.8389**	**2,030.8389**	**0.4088**		**2,041.0596**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0355	0.9711	0.2680	2.0400e-003	0.0512	7.1900e-003	0.0584	0.0147	6.8800e-003	0.0216		216.6052	216.6052	0.0163		217.0126
Worker	0.2051	0.1481	1.5893	4.0100e-003	0.3912	3.1200e-003	0.3943	0.1038	2.8700e-003	0.1066		399.2377	399.2377	0.0136		399.5783
Total	**0.2406**	**1.1192**	**1.8573**	**6.0500e-003**	**0.4424**	**0.0103**	**0.4527**	**0.1185**	**9.7500e-003**	**0.1283**		**615.8429**	**615.8429**	**0.0299**		**616.5910**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846		2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**		**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0322	0.9160	0.2465	2.0100e-003	0.0512	6.1600e-003	0.0574	0.0147	5.8900e-003	0.0206		214.6530	214.6530	0.0157		215.0458
Worker	0.1866	0.1307	1.4189	3.8800e-003	0.3912	3.0400e-003	0.3943	0.1038	2.8100e-003	0.1066		386.6295	386.6295	0.0121		386.9315
Total	**0.2189**	**1.0467**	**1.6653**	**5.8900e-003**	**0.4424**	**9.2000e-003**	**0.4516**	**0.1185**	**8.7000e-003**	**0.1272**		**601.2825**	**601.2825**	**0.0278**		**601.9773**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2721	15.9802	13.4870	0.0220		0.9158	0.9158		0.8846	0.8846	0.0000	2,018.0224	2,018.0224	0.3879		2,027.7210
Total	**2.2721**	**15.9802**	**13.4870**	**0.0220**		**0.9158**	**0.9158**		**0.8846**	**0.8846**	**0.0000**	**2,018.0224**	**2,018.0224**	**0.3879**		**2,027.7210**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0322	0.9160	0.2465	2.0100e-003	0.0512	6.1600e-003	0.0574	0.0147	5.8900e-003	0.0206		214.6530	214.6530	0.0157		215.0458
Worker	0.1866	0.1307	1.4189	3.8800e-003	0.3912	3.0400e-003	0.3943	0.1038	2.8100e-003	0.1066		386.6295	386.6295	0.0121		386.9315
Total	**0.2189**	**1.0467**	**1.6653**	**5.8900e-003**	**0.4424**	**9.2000e-003**	**0.4516**	**0.1185**	**8.7000e-003**	**0.1272**		**601.2825**	**601.2825**	**0.0278**		**601.9773**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815		1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0768**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**		**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174
Total	**0.0693**	**0.0485**	**0.5270**	**1.4400e-003**	**0.1453**	**1.1300e-003**	**0.1464**	**0.0385**	**1.0400e-003**	**0.0396**		**143.6053**	**143.6053**	**4.4900e-003**		**143.7174**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9038	9.1743	8.9025	0.0135		0.5225	0.5225		0.4815	0.4815	0.0000	1,325.0953	1,325.0953	0.4112		1,335.3751
Paving	0.1729					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0768**	**9.1743**	**8.9025**	**0.0135**		**0.5225**	**0.5225**		**0.4815**	**0.4815**	**0.0000**	**1,325.0953**	**1,325.0953**	**0.4112**		**1,335.3751**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0693	0.0485	0.5270	1.4400e-003	0.1453	1.1300e-003	0.1464	0.0385	1.0400e-003	0.0396		143.6053	143.6053	4.4900e-003		143.7174
Total	**0.0693**	**0.0485**	**0.5270**	**1.4400e-003**	**0.1453**	**1.1300e-003**	**0.1464**	**0.0385**	**1.0400e-003**	**0.0396**		**143.6053**	**143.6053**	**4.4900e-003**		**143.7174**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	29.6343					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**29.9008**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0373	0.0261	0.2838	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.3259	77.3259	2.4200e-003		77.3863
Total	**0.0373**	**0.0261**	**0.2838**	**7.8000e-004**	**0.0782**	**6.1000e-004**	**0.0789**	**0.0208**	**5.6000e-004**	**0.0213**		**77.3259**	**77.3259**	**2.4200e-003**		**77.3863**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	29.6343					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**29.9008**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0373	0.0261	0.2838	7.8000e-004	0.0782	6.1000e-004	0.0789	0.0208	5.6000e-004	0.0213		77.3259	77.3259	2.4200e-003		77.3863
Total	**0.0373**	**0.0261**	**0.2838**	**7.8000e-004**	**0.0782**	**6.1000e-004**	**0.0789**	**0.0208**	**5.6000e-004**	**0.0213**		**77.3259**	**77.3259**	**2.4200e-003**		**77.3863**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3591	1.9485	4.7495	0.0164	1.3509	0.0170	1.3679	0.3615	0.0160	0.3775		1,669.2980	1,669.2980	0.0869		1,671.4709
Unmitigated	0.3591	1.9485	4.7495	0.0164	1.3509	0.0170	1.3679	0.3615	0.0160	0.3775		1,669.2980	1,669.2980	0.0869		1,671.4709

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	185.92	181.44	154.88	617,977	617,977
Parking Lot	0.00	0.00	0.00		
Total	185.92	181.44	154.88	617,977	617,977

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956
Parking Lot	0.547828	0.043645	0.199892	0.122290	0.016774	0.005862	0.020637	0.032653	0.002037	0.001944	0.004777	0.000705	0.000956

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
NaturalGas Unmitigated	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1913.34	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0206**	**0.1763**	**0.0750**	**1.1300e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**		**225.0989**	**225.0989**	**4.3100e-003**	**4.1300e-003**	**226.4365**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	1.91334	0.0206	0.1763	0.0750	1.1300e-003		0.0143	0.0143		0.0143	0.0143		225.0989	225.0989	4.3100e-003	4.1300e-003	226.4365
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0206**	**0.1763**	**0.0750**	**1.1300e-003**		**0.0143**	**0.0143**		**0.0143**	**0.0143**		**225.0989**	**225.0989**	**4.3100e-003**	**4.1300e-003**	**226.4365**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378
Unmitigated	9.4701	0.6947	18.9300	0.0417		2.4590	2.4590		2.4590	2.4590	299.7414	580.7697	880.5110	0.8986	0.0203	909.0378

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	8.3852	0.6640	16.2737	0.0415		2.4444	2.4444		2.4444	2.4444	299.7414	576.0000	875.7414	0.8939	0.0203	904.1512
Landscaping	0.0814	0.0307	2.6563	1.4000e-004		0.0146	0.0146		0.0146	0.0146		4.7697	4.7697	4.6800e-003		4.8866
Total	**9.4701**	**0.6947**	**18.9300**	**0.0417**		**2.4590**	**2.4590**		**2.4590**	**2.4590**	**299.7414**	**580.7697**	**880.5110**	**0.8986**	**0.0203**	**909.0378**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9224					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	8.3852	0.6640	16.2737	0.0415		2.4444	2.4444		2.4444	2.4444	299.7414	576.0000	875.7414	0.8939	0.0203	904.1512
Landscaping	0.0814	0.0307	2.6563	1.4000e-004		0.0146	0.0146		0.0146	0.0146		4.7697	4.7697	4.6800e-003		4.8866
Total	**9.4701**	**0.6947**	**18.9300**	**0.0417**		**2.4590**	**2.4590**		**2.4590**	**2.4590**	**299.7414**	**580.7697**	**880.5110**	**0.8986**	**0.0203**	**909.0378**

APPENDIX B

Cultural Resources Study

CULTURAL RESOURCES STUDY FOR THE BIRCH SPECIFIC PLAN PROJECT

CITY OF CARSON, LOS ANGELES COUNTY, CALIFORNIA

PREPARED FOR:

CITY OF CARSON

701 East Carson Street

Carson, California 90745

Contact: Leila Carver, PTP, Senior Planner

PREPARED BY:

Sarah Corder, MFA; Adriane Dorrler, BA; and Samantha Murray, MA

DUDEK

38 North Marengo Avenue

Pasadena, California 91101

NOVEMBER 2017

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EXECUTIVE SUMMARY

The City of Carson retained Dudek to complete a cultural resources study for the proposed Birch Specific Plan project site. The approximately 0.78-acre site consists of two parcels (APN 7343-020-009 and APN 7343-020-010). The street addresses associated with the project site are 21809 South Figueroa Street and 21811 South Figueroa Street.

Dudek's cultural resources study includes a California Historical Resources Information System (CHRIS) records search of the project site and a 0.5-mile radius, coordination with the Native American Heritage Commission and local tribes/groups, a pedestrian survey of the project site for historic built-environment resources, building development and archival research, recordation and evaluation of two properties on the project site over 45 years of age, and an assessment of project-related impacts to historical resources in conformance with the California Environmental Quality Act and all applicable local municipal code and planning documents.

No cultural resources were identified within the project area as a result of the CHRIS records search, Native American outreach, survey, or property significance evaluations.

The buildings and structures at 21809 South Figueroa Street and 21811 South Figueroa Street are recommended not eligible under all National Register of Historic Places and California Register of Historical Resources designation criteria and integrity requirements. Therefore, these properties are not considered historical resources for the purposes of the California Environmental Quality Act, and no recommendations for management are required.

One Native American contact recommended Native American monitoring during all ground-disturbing activities. No archaeological resources were identified within the project site as a result of the CHRIS records search or Native American outreach. However, it is always possible that intact archaeological deposits are present at subsurface levels. For these reasons, the project site should be treated as potentially sensitive for archaeological resources. Management recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during campus construction activities are provided in Section 7.2.

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1 INTRODUCTION

Dudek was retained by the City of Carson (City) to conduct a cultural resources study for the proposed Birch Specific Plan Project (proposed project). The cultural resources study included the following components: (1) a California Historical Resources Information System (CHRIS) records search at the South Central Coastal Information Center (SCCIC) covering the proposed project site plus a 0.5-mile radius, (2) a review of the California Native American Heritage Commission's (NAHC's) Sacred Lands File, (3) outreach with local Native American tribes/groups identified by the NAHC to collect any information they may have concerning cultural resources, (4) a pedestrian survey of the project site for historic built-environment resources, (5) archival and building development research for buildings located within the project site, (6) evaluation of two properties for National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) eligibility, and (7) consideration of impacts to historical resources in compliance with the California Environmental Quality Act (CEQA).

1.1 Project Personnel

This report was authored by Dudek Architectural Historian Sarah Corder, MFA, who meets the Secretary of the Interior's Professional Qualification Standards for Architectural History. Dudek Archaeologist Adriane Dorrler completed the records search and Native American coordination sections of the report. The entire cultural resources report was reviewed for quality assurance/quality control by Dudek Senior Architectural Historian and Archaeologist Samantha Murray, MA, RPA, who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History and Archaeology.

1.2 Project Location

The project site is located on the western edge of the City of Carson, which is located in the South Bay/Harbor area of the County of Los Angeles (Figure 1). Regionally, the City is bordered by the Cities of Long Beach, Compton, Torrance, and Los Angeles. Additionally, unincorporated Los Angeles County borders the northwest section of the City. Locally, the project site is bound by South Figueroa Street to the east and Interstate (I) 110 to the west, approximately half way between West Carson Street to the north and West 220th Street to the south. The approximately 0.78-acre site consists of two parcels (APN 7343-020-009 and APN 7343-020-010). The street addresses associated with the project site are 21809 South Figueroa Street and 21811 South Figueroa Street (Figure 2).

1.3 Project Description

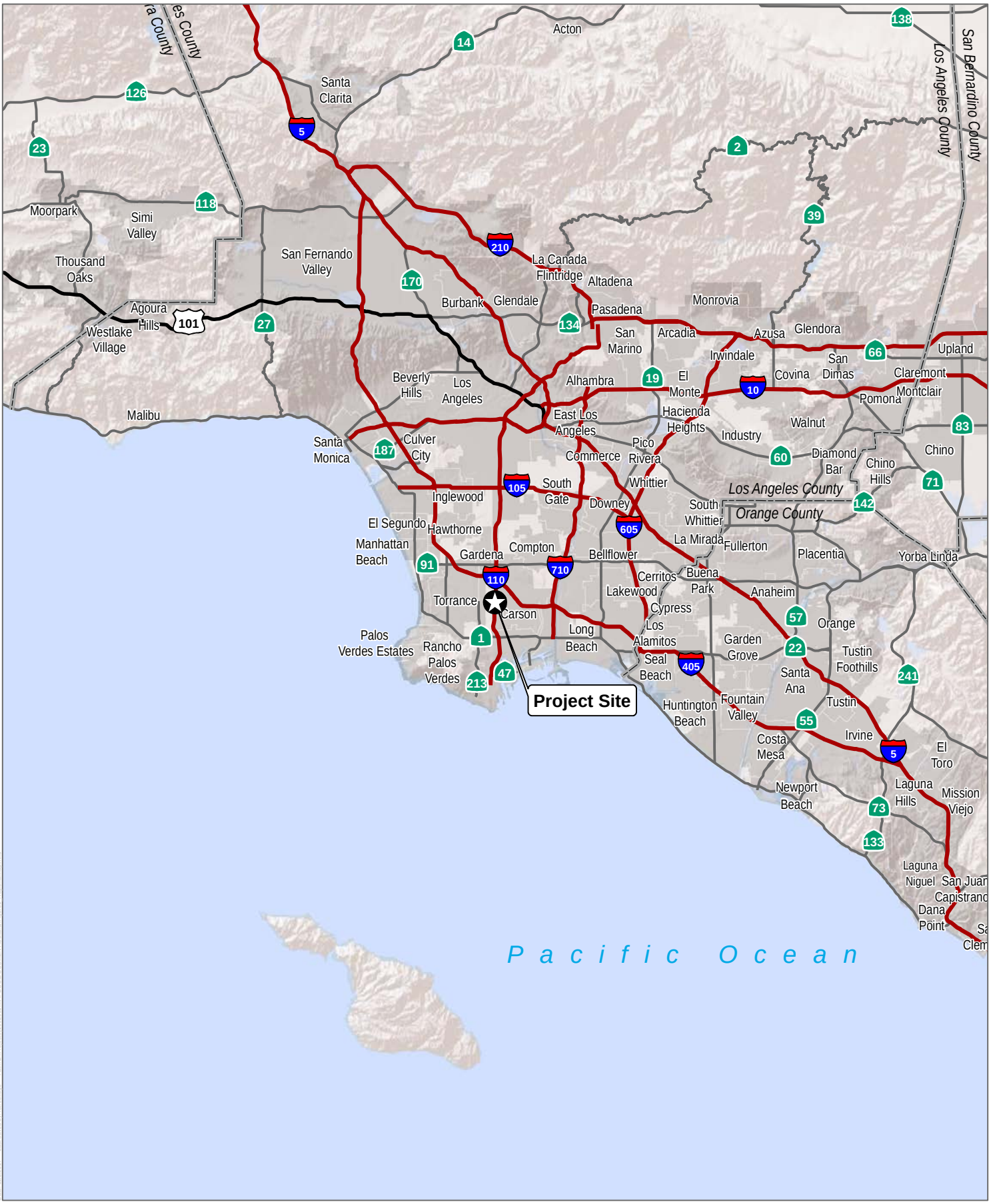
The proposed project would involve demolition of approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construction of a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements.

The condominium units would be located within a four-story, podium-style building with parking provided at ground level and the residential units constructed above. Floor plan types would range from approximately 845-square-foot two-bedroom units to 1,755-square-foot three-bedroom units, totaling roughly 40,532 square feet of living space spread between the 32 units. Each unit would have an associated open space area ranging from 150 square feet per unit to 486 square feet per unit, totaling 5,530 square feet of open space for the proposed project. The ground floor would consist of parking, main entrance and lobby, mailroom, and stairs and elevators to access the upper levels. The second and third floors would provide 11 units each, the fourth floor would provide 10 units, and the roof would have a terrace with some recreational spaces.

The proposed project would contain various types of open spaces for residents and visitors to use. Common public open space would consist of approximately 1,800 square feet of publicly accessible landscape area with outdoor seating along South Figueroa Street. Common semi-public open space includes an approximately 6,000-square-foot roof deck with an outdoor kitchen and barbeque, multiple fire pits, seating areas, turf, and cabanas. In addition, each unit would have a private terrace or balcony.

The proposed project would include at least 5 feet of building setbacks with landscape buffers. There would be a minimum setback of 20 feet along South Figueroa Street from the property line to the building façade. Building features and projections permitted within the setback area include stoops, porches, planters, street furniture, canopies, and awnings. A minimum 25-foot rear setback on portions of the building that are 25 feet above grade would be required to increase the distance between the proposed project and I-110 (Harbor Freeway). A minimum 2-foot planter along the entire edge of the floorplate where the increased setbacks create a terrace would buffer the proposed project and the nearby freeway.

The project involves approval of the Birch Specific Plan (SP 15-7) to ensure consistency with the City of Carson General Plan, Carson Municipal Code, and Carson Zoning Ordinance. Additionally, the Birch Specific Plan would be subject to review by the City to ensure that the design of the proposed development is consistent with all applicable requirements, standards, and regulations set forth in the Carson Municipal Code, as well as other relevant local, state, and federal.



SOURCE: Esri Basemaps

FIGURE 1

Regional Map

Birch SP

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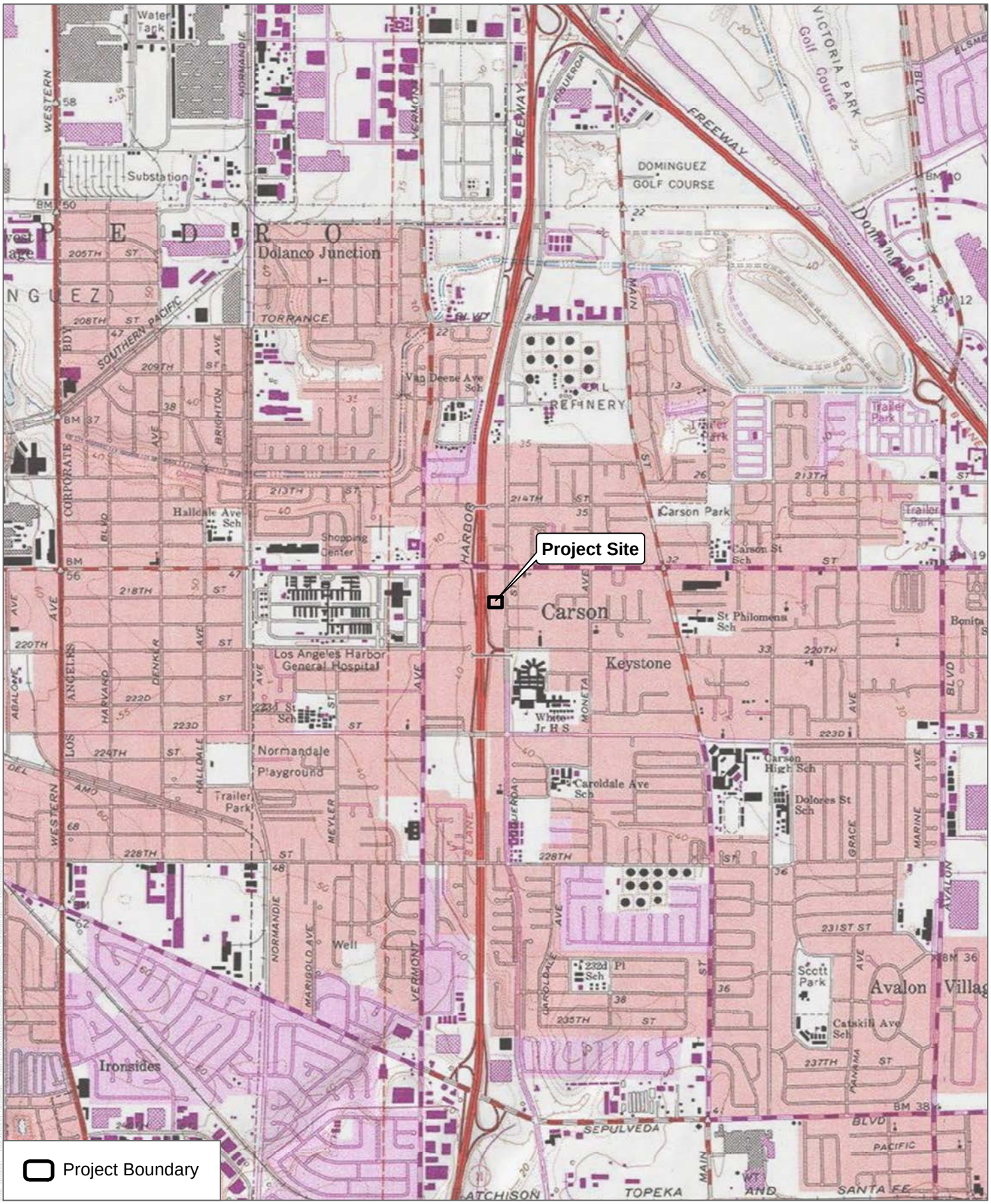

SOURCE: SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Section 18

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0 1,000 2,000 Feet

FIGURE 2
Vicinity Map
Birch SP

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2 REGULATORY SETTING

This section includes a discussion of the applicable state laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during construction of the proposed project.

2.1 Federal

While there is no federal nexus for this project, the subject property was evaluated in consideration of the NRHP designation criteria and integrity requirements.

National Register of Historic Places

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service, under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, "How to Apply the National Register Criteria for Evaluation," as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility.

Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

2.2 State

The California Register of Historical Resources (California Public Resources Code, Section 5020 et seq.)

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code (PRC), Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP), enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) 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.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

California Environmental Quality Act

As described further, the following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; 14 CCR 15064.5(b)). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is an "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; 14 CCR 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (14 CCR 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a)–(c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Impacts on non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); 14 CCR 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as a tribal cultural resource (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5(b)). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact NAHC within 24 hours (Section 7050.5(c)). NAHC will notify the "most likely descendant." With the permission of the landowner, the most likely descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the most likely descendant by NAHC. The most likely descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

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3 HISTORIC CONTEXT

Post-contact history for the State of California is generally divided into three periods: the Spanish period (1769–1822), Mexican period (1822–1848), and American period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American period, when California became a territory of the United States.

3.1 Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of Southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabrílllo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrílllo explored the shorelines of present-day Santa Catalina Island, as well as San Pedro and Santa Monica Bays. Much of the present-day California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrílllo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July 1769, while Portolá was exploring Southern California, Franciscan Friar Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

The Portolá expedition first reached the present-day boundaries of Los Angeles in August 1769, thereby becoming the first Europeans to visit the area. Father Crespi named "the campsite by the river Nuestra Señora la Reina de los Angeles de la Porciúncula" or "Our Lady the Queen of the Angeles of the Porciúncula." Two years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, the Mission San Gabriel Arcángel, on September 8, 1771 (Kyle 2002).

3.2 Mexican Period (1822–1848)

A major emphasis during the Spanish period in California was the construction of missions and associated presidios to convert the Native American population to Christianity and integrated communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish period, only two of which were successful and grew into California cities (San José and Los Angeles). Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955).

Extensive land grants were established in the interior during the Mexican period, in part to increase the population inland from the more settled coastal areas where the Spanish first concentrated their colonization efforts. One such land grant was made to Juan Jose Dominguez. Dominquez was part of the original Portala expedition and was part of a military unit tasked with protecting Father Junipero Serra, during the establishment of the California Missions. Following his retirement in 1782, Dominguez was awarded Rancho San Pedro for his many years of military service. The Rancho San Pedro was approximately 75,000 acres and encompassed what became the modern cities of Carson, Redondo Beach, Lomita, Wilmington, Torrance, and portions of San Pedro (City of Carson 2016, Jerrils 1972).

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary Southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. Dominquez was no exception to this practice, as he moved cattle to his newly acquired land shortly after the grant. Upon arrival with his cattle, he established an adobe for himself, smaller structures for workers, and corrals to run his agricultural operation. However, Dominguez did not spend a great deal of time at the rancho until the last five years of his life. During this time, there were cattle and land disputes with the neighboring rancho. Following his death in 1805, Dominquez did not name anyone to take over the rancho so his executor Manuel Gutierrez took control of the rancho by 1809 even though much of the Dominquez estate was left to his nephew Christobal Dominguez. While Christobal appeared to accept Gutierrez taking control of the rancho, he moved to take possession of the rancho through a petition to the Mexican governor in 1817. The land was eventually granted to Cristobal in 1822, thus, securing it for the next generation of the Dominquez family (City of Carson 2016, Jerrils 1972).

Upon his death in 1825, Christobal's will divided the rancho among his six remaining children evenly. Christobal's son Manuel Dominguez made the rancho his home for more than 50 years. During his time on the property Manuel constructed a five-room adobe for use by him and his two brothers also residing at the property prior to establishing their own homesteads on the rancho. Manuel spent much of his life in the adobe he built with his wife, Maria Engracia de Cota, whom he married in 1827. In addition to his life on

the rancho, Manuel was active in politics for the Pueblo de Los Angeles and held many public offices throughout his life (Jerrils 1972).

In an ongoing effort to preserve his legacy, Manuel battled to keep Rancho San Pedro within the Dominquez family throughout the first half of the nineteenth century. Land claims by the Guitierrez and Sepulveda families and financial troubles experienced by other members of the Dominquez families resulted in a fight for control of the rancho that continued well into the early years of the American period. By 1858, the rancho was listed on the formal patent as 43,119.13 acres and Manuel owned approximately 26,000 acres of the rancho at the time of the patent (Jerrils 1972).

3.3 American Period (1848–Present)

During the multi-year legal battles and financial struggles with Rancho San Pedro, tensions rose between Mexico and the United States. War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident *Californios* and Americans in the San Bernardino area. The Mexican–American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American period (Jerrils 1972).

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. Territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the Southern California economy through 1850s. The Gold Rush began in 1848 and, with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the cattle boom of the 1850s, rancho *vaqueros* drove large herds from Southern to Northern California to feed that region's burgeoning mining and commercial boom. The cattle boom ended for Southern California as neighboring states and territories began driving herds to Northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 1941).

Rancho San Pedro was in no means immune to the financial turmoil seen throughout California in the years following the way in 1846. Following the conclusion of the war, the Dominguez family was able to obtain a clear title to Rancho San Pedro with Manuel Dominquez holding a large percentage of the land. According to Jerrils' *The History of a City…Carson, California,* Manuel's legacy and the legacy of Rancho San Pedro continued after his passing in 1882 with the following historic firsts on the rancho: "Establishment of a memorial seminary for the training priests of the Claretian Order, the first national air meet in the United States, the discovery of oil, and the beginning of the Dominguez Water Corporation" (Jerrils 1972).

Despite his many years of supervising the operations at the rancho, Manuel turned over operations of the rancho to his son-in-law, George Henry Carson, in 1862. George held a variety of positions throughout his life including, but not limited to, being a successful mercantile store manager and a Los Angeles County public administrator. Following his work as the public administrator, George married Manuel's daughter Maria Victoria Dominguez and made their permanent home to the north of the rancho. George and Victoria had a son, John Manuel Carson, who would carry on the Carson name and legacy throughout the twentieth century. The

significant contributions of John Manuel Carson would also be recognized in the eventual naming of the City of Carson following its incorporation in 1968 (City of Carson 2016, Jerrils 1972, Tino-Sandoval 2006).

The late nineteenth and early twentieth centuries were a period of growth and development in and around Carson. Much of the development of the area was made possible by the sale of portions of the Rancho San Pedro owned by Dominguez family descendants under the Dominguez Estate Company. One of the earliest subdivisions was known as the Nestoria subdivision. Many of the subdivided portions of the original rancho were used for smaller family farms (Tino-Sandoval 2006).

The Dominguez Estate Company maintained some of their properties at this time due to use of the land for oil operations, which was a large component of the Dominguez heir's wealth and the economic system in Carson during the twentieth century. For instance, in 1945 Dominguez Hill had an oil development site with over 350 oil wells that spanned over 1,200 acres. Large oil companies were also making the Carson area their home, such as the Shell Oil Company that began construction of their site in 1927 near Dominguez Hill (Tino-Sandoval 2006).

The 1920s was also a period of industrial growth with the establishment of companies such as the Kellogg Garden Products plant in 1925. Hiram Clay Kellogg Sr. brokered a lease agreement for his company with the Los Angeles County Sanitation District for establishment of his Carson plant. The plant created jobs for the area, was an important early step towards the industrialization of the City, and remains in Southern California today (Tino-Sandoval 2006).

Although the population of Carson remained small and the area remained largely agricultural, other services emerged in the early twentieth century such as local schools and public water service provided by the Dominquez Water Corporation. These services provided vital amenities for the residents and helped facilitate the growth and development of the area. While there were early steps taken towards industrialization and oil production, the bulk of commercial and industrial developments were slow to come to Carson until after the Great Depression. In the years following the Great Depression, most of Southern California experienced a housing boom, and Carson was no exception. During the post-Depression years, the area saw expanded amenities and services for its residents, as well as a large increase in housing options (Tino-Sandoval 2006).

Carson also continued to increase in population brought about by the construction of the 110 Freeway. During the 1950s and 1960s, the 110 Freeway was under construction; it was completed in 1970. During this time, portions of land in Carson were acquired from private citizens for the construction of ramps and associated freeway infrastructure. Today the freeway serves as a vital transportation corridor through the Greater Los Angeles Area (Tino-Sandoval 2006).

While the population, industry, and commercialism increased in the area in the 1950s and 1960s, it remained part of unincorporated Los Angeles County. Throughout most of the twentieth century, Carson became a popular garbage repository for established cities throughout the area. Without a local government to control use patterns within the area, Carson struggled to move forward. However, in 1968 the residents of Carson took a stand and incorporated on February 20, 1968. Earlier in February 1968, a vote was required from the residents of the area regarding incorporation. Approximately 10,000 of the 17,000 registered voters in Carson cast a vote, and the

results were 6,301 in favor of incorporation to 3,834 opposed to incorporation. Shortly thereafter, the city was named Carson, and its first mayor and City Council members were put in place. The newly appointed City representatives were quick to target the unwanted industries in the City, and steps were taken to remove or revise their appearance and practices. Such steps included strict building and landscaping codes, as well as removal of some of the unwanted entities. The City continued its efforts with beautification projects over the years resulting in public parks, landscaped medians, and street lighting projects (CDN 1968, City of Carson 1969, City of Carson 2016, Tino-Sandoval 2006).

While Carson was one of the later parts of Los Angeles County to become incorporated, the City continued to grow and develop following the incorporation in 1968 and played host to a portion of the Olympic Games in 1984. The following information from the City of Carson website illustrates the role played by Carson in the 1984 games:

> For the Olympic races, a special arena had to be built. The chosen site was the campus of California State University at Dominguez Hills, in Carson. American Olympic athletes won over 15 medals while competing in cycling events at the 1984 Olympics at the Carson Velodrome. The Velodrome, as such stadiums were known, was built to seat more than 5,000 spectators; the special track was custom-made for high-speed cycling. A new generation of cyclists has used the same facility as a training ground for later Olympics triumphs, including World Champion racers Marty Nothstein, and Paraskavin-Young. Today, what was once known as Carson Velodrome is now called the VELO Sports Center on the 125-acre StubHub Center (City of Carson 2016).

Carson continued to grow and develop throughout the remaining decades of the twentieth century and today. Such examples of this civic growth can be seen throughout the City with the construction of the Carson Civic Center, the Carson Community Center and the Stub Hub Center. The City has also worked through extensive environmental hurdles to revitalize once contaminated industrial sites for new uses such as the Carson Town Center that opened its doors in 1996 on a site that was once the Golden Eagle refinery. As of 2010, the City supports a diverse population of 91,714 (City of Carson 2016).

3.4 Project Site Historic Context

The project site began to develop in the late 1920s. While no original building permit was located for the property, the Los Angeles County Assessor lists a built date of 1929 for 21811 South Figueroa Street and 1955 for 21809 South Figueroa Street. Grant deeds used in the preparation of this historic context were provided by the property owner on November 15, 2017.

21809 South Figueroa Street

The first records found pertaining to 21809 South Figueroa Street are deed records dating from 1947 when Harl and Jewel Rightmire deeded half of the property to Fred S. Pumphrey and half of the property to Edward and Beatrice Pumphrey (Deed Book Page 554). Due to a lack of deeds and building permits, it is difficult to

determine who owned the property prior to the Rightmires. Despite the lack of building permits, it seems likely that the Pumphrey family constructed the one-story ranch house on the property in 1955 given their ownership of the property at the time. Like other property owners in Carson, the Pomphreys granted a portion of their lot to the State of California for the construction of the 110 Freeway in 1955 (Deed dated January 20, 1955, number illegible). The Pumphreys maintained ownership of the property until 1962, when Beatrice Pumphrey deeded the property to R.B. and Joan Keith (Document No. 1208).

During the Keiths' ownership of the property, it was subdivided into the "north 65 feet of lot 41" and the "south 50 feet of the north 115 feet of lot 41." It is unclear why the property was subdivided into two sections at this time, but it appears that Alfred and Alice Hilburn owned the southern portion and Clayton and Beatrice Marsh owned the northern portion (Document Nos. 1869 and 1638). The property continued to be referenced as two separate parcels until the late 1960s.

Towards the end of the 1960s, another owner appears in the deeds named M. Jean Cochran. Based on the information found in the grant deed information, Cochran owned lots 40, 41, and 48 and maintained her ownership until the early 1970s when her name is no longer part of deeds. It was not until this time that the property (including 21809 South Figueroa Street and 21811 South Figueroa Street) became Lot 41 as it appears on the Assessor's Parcel map today (Document Nos. 2433, 2056, 1978, and 4563).

According to Los Angeles County Assessor records, 21809 South Figueroa Street was constructed in 1955, but no original building permit could be found in the City of Carson building permit file. According to the City of Carson, there are no building permits for this property prior to 1982. After 1982, there are a series of permits for the property that the Building and Safety Department claims were never finalized. Based on discussions with the Building and Safety office, there was a plan to construct condominiums on the property in the 1980s and 1990s under the Salamat ownership of the property, but these plans were never executed. Despite the lack of permits, there are multiple observed alterations to the house, including the addition to the south side of the house for garage and living area, replacement windows, replacement doors, installation of window AC units, reroofing, addition of brick veneer detailing on front porch, installation of exterior lights, installation of exterior mechanical systems, and the replacement of front yard with large concrete parking area.

Archival research found that the property has been used for many years as a rental unit and was not owner occupied. Recent deeds also suggest that the property was combined with 21811 South Figueroa Street and the property as a whole was transferred through multiple owners in recent years and currently functions a single-family residence with three bedrooms and two bathrooms (Egbert 2017).

Historic aerial photographs via Nationwide Environmental Title Research LLC (NETR) were reviewed from the years 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. The earliest historic photograph of 21809 South Figueroa Street from 1963 indicates the building is roughly rectangular with similar scale and massing to its current design. The building is also designed to face South Figueroa Street.

The remaining aerial photographs do not show significant changes to the subject property over the years (NETR 2017).

21811 South Figueroa Street

The property known today as 21811 South Figueroa Street does not appear on deed records until 1942 when John and Teresa Hill deeded the property to Alexander and Lenora Hamilton. Due to a lack of deeds and building permits, it was not possible to determine if John and Teresa Hill were the original owners of the land, or who constructed the modest one-story single-family residence on the site in 1929. Deeds for the property show that Alexander and Lenora Hamilton owned the property from 1942 until 1953, when Lenora gave up her ownership of the property following the death of her husband on January 19, 1953 (Deed Book 19805, Page 43). After Lenora's ownership of the property, it was granted to Antonio and Janet Argento in 1953 (Deed Book 47364, Page 71).

The Argentos owned the property from 1953–1977. During their ownership of the property, the Argentos, like other families in Carson, gave up a portion of their lot for the construction of the 110 Freeway that was happening between 1952 and 1970 (Document No. 2388). Following the death of Antonio Argento, Janet sold the property to Ronaldo and Evangelina Salamat in 1977 (Document No. 826922). The Salamats continued to own the property until 2009 (Document No. 20080229893). During their ownership of the property the Salamats made many transfers of the property between the two of them and through companies with which they had a management interest. One such company was Carson Summit Co. (Document No. 05-1703808). Following the Salamats ownership in 2009, the property was owned by a variety of companies including Richard S. Held Enterprises Retirement Trust in 2009 (Document No. 20091281518), Sunset Holding Partners LLC. in 2015 (Document No. 20150284043), and the current owner Real Quest Holding LLC. in 2016 (Document No. 20161635958). From the time of Salamat's transfer of ownership in 2009, the property merged with the adjacent parcel, 21809 South Figueroa Street (APN 7343-020-010).

According to Los Angeles County Assessor records, the residence was constructed in 1929, but no original building permit could be found in the City of Carson building permit file. One major change to the building occurred circa 1955, when a half unit was added to the rear of the house, likely to function as a rental property. There were a series of documented alterations to the house and property over the years, including plumbing for the establishment of a laundry connection in the half unit in 1955 (Permit No. 9621), electrical work in 1955 to the half unit (Permit No. 0207), connection of sewer for the half unit in 1958 (Permit No. 8527), installation of a new water heater for the half unit in 1978 (Permit No. 0625), demolition of existing building on the site (Permit No. 6770A), and the addition of a single detached carport (Permit No. 2473A). There are also multiple observed alterations to the house, including enclosure of the front porch, application of stucco to the main elevation, reconfiguration of windows and doors, addition of a half unit to the rear of the house (circa 1955), reroofing, replacement doors, replacement windows, the addition of exterior lighting on main elevation, reconfiguration of the front yard for large concrete parking area, installation of window AC units, and replacement of sections of asbestos siding.

Archival research suggests that the property has functioned as a rental property since the 1950s, when the half unit was added to the rear of the house. As discussed above, the property was transferred through multiple owners in recent years and currently functions as a two-unit rental property for the current owner (Egbert 2017).

Historic aerial photographs via NETR were reviewed from the years 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. The earliest historic photograph of 21811 South Figueroa Street from 1952 indicates there are two buildings located on the parcel. The larger of the two buildings appears to face South Figueroa Street and appears to be L shape in plan. The remaining aerial photographs do not show significant changes to the subject property over the years (NETR 2017).

Architectural Style of Project Area

Due to extensive alterations to the 21811 South Figueroa Street property, it no longer retains enough architectural integrity to associate with a particular style. However, the 21809 South Figueroa Street property is an example of a modest Ranch house that was popular throughout the United States from circa 1935–1975. Additional information pertaining to the Ranch style of architecture is discussed in the following section.

Ranch (c. 1935–1975)

The Ranch house is a style of architecture that was popular starting in the 1930s and fell out of popularity by the 1980s. In the 1930s and early 1940s, the Ranch house was part of the Small House movement that was brought into fashion by the Federal Housing Administration. Like the Minimal Traditional house, the Ranch house could be constructed quickly and use modern materials that could be mass-produced. The style provided an easy option for large-scale housing tracts during the 1930s and 1940s to meet the needs of relocated war-effort workers and those of soldiers returning home and starting families. Following the war years, a new era of prosperity brought about a departure from the Small House movement, and the Ranch house became a popular house type throughout the late 1940s through the 1970s.

The Ranch house of the 1930s and 1940s maintained similar characteristics to newer versions, but small lot sizes in housing tracts made the concept of the rambling Ranch house almost impossible. In the 1950s, post-war prosperity combined with increased lot sizes made the larger and more recognizable Ranch house possible. The ability of the Ranch house to exist in different sizes and arrangements made it one of the most popular house choices throughout the United States across multiple social classes.

Key characteristics of the Ranch style of architecture are the following (Gottfried and Jennings 2009; Hess 2004; McAlester 2015):

- One story in height
- Gabled or hipped roofs constructed with a low pitch and moderate overhang
- Offset entry points causing asymmetry in the façade

- Focus on horizontal and rambling forms
- Focus on informality
- Entry points are typically placed under the roof overhang on the façade
- Use of large picture-style windows on the façade
- Variations on the eave overhang, typically boxed eaves or exposed rafter tails, or the less-common boxed rafters
- Large chimneys
- Variety of exterior cladding, including brick and stone
- Attached garage, typically incorporated into the façade
- Front and rear yards
- Large rectangular blocks are the basis for the plan design and could be simply rectangular or a combination of rectangular blocks to create L, U, and T shapes in plan.

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4 BACKGROUND RESEARCH

4.1 CHRIS Records Search

Dudek requested a CHRIS records search from the SCCIC, which houses cultural resources records for Los Angeles County. Dudek received the results on November 2, 2017. The search included any previously recorded cultural resources and investigations within a 0.5-mile radius of the project site. The CHRIS search also included a review of the NRHP, CRHR, California Points of Historical Interest list, California Historical Landmarks list, Archaeological Determinations of Eligibility list, and California State Historic Resources Inventory list. A letter from the SCCIC summarizing the results of the records search and a bibliography of prior cultural resources studies is provided in Confidential Appendix A of this report.

Previously Conducted Cultural Resource Studies

One previously conducted study was identified within the project site (LA-04512). This study, prepared in 1977 by Eggers, consisted of an extensive archaeological inventory report of the entire City of Carson. The purpose of the inventory was to assist the City in developing a set of policies and protective measures for the conservation of cultural resources within city limits. The study encompassed a vast area and provided broad analysis; therefore, the current project site was not specifically addressed. However, the study identified numerous areas within the City that were considered sensitive for cultural resources, namely Areas 1–5. The current project site is adjacent to, yet outside, the boundary of Area 1: the early twentieth century community formerly known as Keystone.

An additional five previously conducted cultural resources studies were identified within 0.5-mile radius of the project site; however, none of these overlap the project site (Table 1).

Table 1. Previously Conducted Cultural Resources Studies Within 0.5-Mile of Project Site

SCCIC Report No.	Title of Study	Author(s) and Date	Proximity to Project site
LA-03956	Archaeological Assessment for Pacific Bell mobile Services Telecommunications Facility, LA 193-04, 22108 South Vermont Avenue, City of Torrance, County of Los Angeles, California	D.K. McLean, 1998	Outside
LA-04512	Cultural Resources Inventory of the City of Carson, California	A.V. Eggers, 1977	Within
LA-05331	Archaeological Survey Report for the 07-LA-110 Harbor Freeway Transitway Corridor Project	J.F. Romani, 1982	Outside
LA-06194	Records Search Results for the Carson Town Center Project EDA Grant, City of Carson, Los Angeles County, California	L.S. White, 2002	Outside
LA-11482	Camp Sites in Harbor District	F.H. Racer, n.d.	Outside
LA-12870	Cultural Resources Overview and Assessment: The City of Los Angeles, West Carson Transit Oriented District (TOD) Specific Plan Project Area, Los Angeles County, California	J.A. McKenna, n.d.	Outside

Previously Recorded Cultural Resources

No cultural resources were identified within the project site as a result of the records search. Two previously recorded resources (Table 2) were identified within 0.5 miles of the project site. The closest resource to the project site (P-19-000106) is approximately 0.3 miles west in what is now a fully developed residential area. The two resources include a prehistoric cultural deposit containing marine shell, lithics tools and debris, and shell beads once described as encompassing 6 acres of agricultural land (P-19-000106) and an unknown resource with no recorded information aside from the provenance (P-19-000122).

In addition to the previously recorded resources identified in Table 2, the State Historic Resources Inventory identified an additional eight historic resources within 0.5 miles of the project site. The full Historic Resources Inventory for the Cities of Carson, Long Beach, and Torrance is provided in Confidential Appendix A.

Table 2. Previously Recorded Cultural Resources Within 0.5 Miles of the Project Area

Primary Number	Trinomial	Resource Description	Recorded By/Year	NRHP/CRHR Eligibility Status	Proximity to Project Site
P-19-000106	CA-LAN-0106	Prehistoric: Cultural deposit originally described as consisting of marine shell, lithic tools, and shell beads identified in an agricultural field. The location has since been developed with a housing tract.	A.V. Eggers, 1977; F.H. Racer, 1939	Unknown	Outside
P-19-000122	CA-LAN-0122	Unknown: Site record incomplete	H. Eberhart, 1952	Unknown	Outside

4.2 Native American Coordination

Sacred Lands File Search and Tribal Outreach

As part of the process of identifying cultural resources within or near the project, Dudek contacted the NAHC to request a review of the Sacred Lands File (SLF). The NAHC emailed a response on October 16, 2017, which stated that the SLF search was completed with negative results. Because the SLF search does not include an exhaustive list of Native American cultural resources, the NAHC suggested contacting Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the project. The NAHC provided the contact list along with the SLF search results.

Dudek prepared and sent letters to each of the five persons and entities on the contact list requesting information about cultural sites and resources in or near the project. These letters, mailed on October 17, 2017, contained a brief description of the proposed project, a summary of the SLF search results, and a reference map. Recipients were asked to reply to the letter should they have any knowledge of cultural

resources in the area. Dudek received one response to the initial inquiry letters. The following paragraph provides a brief summary of this response. Documents related to the NAHC SLF search and initial Native American outreach efforts are included in Appendix B.

Andrew Salas, chairman of the Gabrieleño Band of Mission Indians – Kizh Nation, replied via email on October 25, 2017. Mr. Salas stated that the project is located within the Tribe's ancestral territory, and there is potential for discovering cultural resources during construction. Mr. Salas recommended that one of the Tribe's Native American monitors be present during all ground-disturbing activities.

Assembly Bill 52

The proposed project is subject to compliance with Assembly Bill 52 (California PRC 21074), which requires consideration of impacts to "tribal cultural resources" as part of the CEQA process, and requires the City, the CEQA lead agency for the proposed project, to notify any groups who have requested notification of the proposed project and who are traditionally or culturally affiliated with the geographic area of the project site. Because Assembly Bill 52 is a government-to-government process, any records of correspondence related to Assembly Bill 52 notification and any subsequent consultation are on file with the City and will be discussed in the larger CEQA document.

Senate Bill 18

The proposed project is also subject to compliance with Senate Bill 18, which required local governments to consult with California Native American tribes identified by the NAHC for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places in creating or amending general plans and specific plans. Because the proposed project includes a Specific Plan, Senate Bill 18 applies. Because Senate Bill 18 is a government-to-government process, any records of correspondence related to Senate Bill 18 notification and any subsequent consultation are on file with the City and will be discussed in the larger CEQA document.

4.3 Archival Research

Archival research for the project area involved extensive primary and secondary source review, review of historic maps, review of historic photographs, and in-person visits for building information as stated below. All archival research was conducted by Dudek Architectural Historian Sarah Corder, MFA.

City of Carson Department of Building and Safety

Dudek visited the City of Carson Department of Building and Safety on October 25, 2017, and requested all building permits, architectural drawings, and construction information for all properties located in the project area. The permit counter provided all information in their records, but noted that anything prior to 1933 would only be available at the Los Angeles County Tax Assessor's Office. The information obtained from the Department of Building and Safety was used in the preparation of the historic context.

City of Carson Planning Division

Dudek visited the City of Carson Planning Division on October 25, 2017, and requested any pertinent information pertaining to the subject property including any historic planning maps. The Planning Division stated that there was no additional information outside of what was available from the City of Carson Department of Building and Safety or the Los Angeles County Tax Assessor's Office.

Los Angeles County Tax Assessors Office

At the direction of the City of Carson Department of Building and Safety, Dudek visited the Los Angeles County Tax Assessor's Office and requested any additional information for the subject property. The request was denied due to a lack of property ownership prior authorization. However, the Los Angeles County Assessor Online Portal was used to determine dates of construction and square footage counts for the subject properties.

City of Carson Public Library

Dudek visited the City of Carson Public Library on October 25 and October 26, 2017. The library provided the following information: access to numerous environmental impact reports for the City of Carson, published sources on the City of Carson, and four file boxes containing a variety of documents pertaining to the history of the City of Carson. The information obtained from the library was used in the preparation of the historic context.

California State University Dominguez Hills Archives and Special Collections

Dudek visited the California State University Dominquez Hills Archives and Special Collections on November 9, 2017. The collection consisted of numerous aerial photographs of various parts of Carson, multiple boxes of information pertaining to the history of the City of Carson, and several published works pertaining to the history of Carson. All materials were reviewed, and any relevant materials were used in the preparation of the historic context.

Review of Historic Aerial Photographs

The subject properties are located at 21809 South Figueroa Street and 21811 South Figueroa Street in the City of Carson, California. Historic aerial photographs via NETR were reviewed from the years 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. The earliest historic photograph from 1952 indicates there are two buildings located on the south side of the parcel. The larger of the two buildings appears to face South Figueroa Street and is L shape in plan. The smaller building is located to the rear (west) of the main building and appears to be rectangular in plan. The 1952 photograph also indicates moderate development in the area with streets laid in a grid pattern and subdivided parcels likely for residential development. Another notable element in the 1952 photograph is the absence of the 110 Freeway to the west. By the 1963 photograph, the 110 Freeway is visible to the west of the subject properties, and most of the parcels around the subject property are developed. The 1963 photograph also indicates another building on the northwest side of the parcel, which is consistent with 1955 date of construction for the 21809 South Figueroa Street building. The remaining aerial photographs do not show significant changes to the subject property over the years. The buildings appear to maintain their size and massing seen in 1963 (NETR 2017).

5 CULTURAL RESOURCES SURVEY

Dudek Architectural Historian Sarah Corder, MFA conducted a pedestrian survey of the project area on November 9, 2017 for historic age built environment resources. During the survey all buildings and structures constructed over 45 years ago were surveyed and recorded. The built environment component of the survey entailed documenting each building with notes and photographs, specifically noting character-defining features, spatial relationships, and any observed alterations. The survey area was photographed using a digital camera. All field notes, photographs, and records related to the current study are on file at the Dudek Pasadena, California, office.

The project area is entirely developed and contains no exposed ground surface. Further, no previously recorded archaeological resources were identified within the project area as a result of the records search. Therefore, an intensive-level archaeological survey was not conducted.

5.1 Description of Surveyed Resources

The project site contains two residential properties: 21809 South Figueroa and 21811 South Figueroa Street. Each property is numbered and referenced by number in Table 3 and in the descriptions that follow. Department of Parks and Recreation Series 523 Forms (DPR forms) are provided in Appendix C.

Table 3. Identified Built-Environment Resources

Street Address	City	Assessor's Parcel Number	Year Built	Evaluation Findings
21809 South Figueroa Street	Carson	7343-020-010	1955	6Z
21811 South Figueroa Street	Carson	7343-020-009	1929	6Z

21809 South Figueroa Street, APN 7343-020-010

The subject property contains a Ranch-style, single-family residence built in 1955 (Los Angeles County Assessor) facing South Figueroa Street (Figure 3) and an outbuilding that has been converted into a living space to the south of the main residence (Figure 4). While it appears that the outbuilding is now associated with 21809 South Figueroa Street, it appears to have been historically associated with 21811 South Figueroa Street. From the first aerial photographs available in 1952, there was an outbuilding associated with the 21811 South Figueroa Street property at that location, which appears to have been altered or replaced at some point prior to the 1980 aerial photograph (NETR 2017).

Main House: The one-story Ranch-style, single-family residence is irregular in plan. The building's exterior is primarily stucco-clad with sections of horizontal wood siding present on the primary façade that terminates at the base of the window. The building also features a hipped roof sheathed in composition shingles. The east (main) elevation presents as two sections: a left (southern) section featuring a single-car

width garage and a central section of the house distinguished by an integral porch and brick chimney that pierces the roof. The integral porch has a concrete slab foundation with decorative brick veneer at the entry point, which is accessed by a front walkway with two steps. Fenestration across the main elevation is irregular and contains a large tripartite window with a fixed center section flanked by two sliding windows, two one-over-one vinyl replacement windows in different sizes, a replacement six-panel entry door, and two sets of paired one-over-one vinyl replacement windows.

Observed alterations to the main house include the addition of a garage and living area to the south side of the house that creates an L-shape plan visible from the rear of the house, replacement windows, re-roofing, the addition of horizontal wood siding to the main elevation, the addition of brick veneer to the porch, installation of window AC units, and replacement doors throughout. According to information provided by the current owner, the building's interior is currently configured as a single-family residence with three bedrooms and two bathrooms.

Figure 3. Main elevation of 21809 South Figueroa Street, view to west, Image No. IMG_4655.

Outbuilding 1: There is a one-story building located southwest of the main house. The one-story building features a gabled roof with a mix of horizontal and vertical wood siding. Although the building appears to have originally functioned as a shed or garage, it was converted (date unknown) to a residential unit. The east (main) elevation presents as a single section that is asymmetrical and features irregular fenestration. The fenestration contains vinyl, horizontal slider windows in a variety of configurations and sizes with false window grilles, as well as an offset to the south entry point that features a replacement six-paneled door. The entry point is accessed by a brick and stone path terminating at a covered patio/carport structure.

Figure 4. Main elevation of 21809 South Figueroa Street Outbuilding 1, view to west, Image No. IMG_4507.

Outbuilding 2: There are two small temporary metal building located east of Outbuilding 1 (Figure 5). The one-story buildings appear to be joined together, but were likely originally two separate temporary buildings.

Figure 5. 21809 South Figueroa Street Outbuilding 2, view to southwest, Image No. IMG_4508.

21811 South Figueroa Street, APN 7343-020-009

The 21811 South Figueroa Street property contains a main house with one outbuilding and a set of animal enclosures, which are located south of the main house.

Main House: The main house is a heavily altered vernacular Bungalow-style residence built in 1929 (Los Angeles County Assessor) facing onto South Figueroa Street (Figure 6). The one-story building is L shape in plan with sections of horizontal asbestos siding and stucco set under a multi-gabled roof covered with composition shingles. The house has been significantly altered from its original design including alteration of the east (main) elevation. While the original design has been altered beyond recognition, it is possible that the main elevation featured a small porch that has since been enclosed and reconfigured. Currently, the asymmetrical façade features irregular fenestration that includes a one-over-one wood window, an offset to the north replacement six-paneled entry door obscured by a metal security door, and the remnants of a six lite window to the north. The remaining elevations feature irregular fenestration with a mix of original wood-frame windows and replacement windows in a variety of sizes and configurations. The north elevation also features reconfigured entry points providing access into the main unit and a half unit to the rear of the building.

Observed alterations to the building include reconfiguration of entry points on east and north elevations, replacement windows, a rear addition creating an L shape in plan, replacement doors, and re-roofing.

Figure 6. Main elevation of main house, 21811 South Figueroa, view to west, Image No. IMG_4617

Outbuilding 1: There is a small, recently manufactured shed located within the fenced in area located between the central block of the house and the rear L-shape. It is one story and features a front gable (Figure 7).

Animal Enclosures: There are multiple animal enclosures located within the fenced-in area located between the central block of the house and the rear L-shape. The enclosures are constructed of scrap lumber and feature makeshift roofs with low pitches.

Figure 7. 21811 South Figueroa, Outbuilding 1 and animal enclosures, view to southwest, Image No. IMG_4615

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6 SIGNIFICANCE EVALUATIONS

6.1 21809 South Figueroa Street

NRHP/CRHR Designation Criteria

The subject property is one of many single-family residences in the area from approximately the same period of construction (1950s-1960s) and no significant historical associations or patterns of development were identified. Residential development in Carson like other Southern California cities boomed following World War II and the rise of industrialization that created jobs and shifted the economic focus from agriculture to industry. This pattern of development was seen across the United States during and after World War II, when industry began to boom and residential development became a priority to house a growing post-war population. Due to a lack of significant associations with events important to history, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.

Archival research also failed to indicate any associations with significant persons. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.

To support the population growth, builders in Carson turned to one of the most popular styles of the time, the Ranch Style. The main house is a relatively poor example of a Ranch style residence constructed in 1955 when Carson was experiencing a residential boom during a period of Post-War growth. While the most basic elements of the Ranch Style are evident, the property is a very modest example of the style and lacks some of the more character-defining features of the style such as large prominent chimneys, attached garages, and large front yards. Further, the house exhibits substantial alterations including removal of original windows, doors and an addition to the south end of the house that disrupts the original scale and massing.

Finally, archival building permit research failed to provide information regarding the original builder or architect, but it is not likely to be the work of a master architect or important creative individual. Finally, the property does not appear eligible as a contributing property to an historic district. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

The subject property is unlikely to yield any information important in prehistory or history and therefore does not appear eligible under NRHP/CRHR Criteria D/4.

Integrity Considerations

The property's location has remained unchanged since its initial construction, always located on a small, suburban parcel and functioning as a single-family residence. When the subject property was originally developed, it was surrounded by other single-family and multifamily residences to support the growing population of Carson. However, the construction of the 110 Freeway quickly altered the landscape of the area. Completed in 1970, the 110 Freeway located on the west side of the property significantly altered the suburban nature of the neighborhood and eventually led to the construction of a sound wall at the edge of the property, thus compromising the integrity of setting, location, and feeling. In addition to the freeway construction, the

subject property was converted to a living space, thus altering the feel of the building as a single-family residential property. The subject property has also lost much of its requisite integrity of design, materials, and workmanship due to significant alterations, including replacement of original windows and doors, and an addition to the south end of the house that disrupts the original scale and massing.

6.2 21811 South Figueroa Street

NRHP/CRHR Designation Criteria

The subject property is one of many multifamily residential units in the area, and no significant historical associations or patterns of development were identified. Residential development in the 1920s in Carson was tied largely to a small population spike caused by the establishment of oil companies and industrial companies in the area, such as Kellogg Garden Products. These industrial entities created much needed jobs in the area, which in turn created the need for residential development in Cason. This pattern of development was seen across Southern California with the introduction of industrialization into areas that were primarily agricultural throughout the nineteenth century. Due to a lack of significant associations with events important to history, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.

Archival research also failed to indicate any associations with significant persons. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.

The Craftsman architecture movement in the United States is one of the most prevalent and widespread movements that appealed to almost all social classes. One of the most notable architectural developments arising from the Craftsman movement is the bungalow. The Arts and Crafts movement began in the mid-late part of the nineteenth century in England as a reactionary movement against the excessiveness and ostentatious designs of the Victorian era. One of the key contributors to bringing the Craftsman movement to the United States was Gustav Stickley. His work and efforts helped fuel the development of the Craftsman movement and spread it across the United States.

The subject property is a heavily altered example of a vernacular bungalow-style residence constructed in 1929. Carson, like other parts of Los Angeles County, had a residential boom in the 1920s. To support the population spike, builders in Carson often turned to one of the most popular styles of the time, the Craftsman style bungalow.

Upon its arrival in California, the Craftsman movement produced a truly unique California architectural form – the California Bungalow. Developed by the work of Greene and Greene in Pasadena, the California Bungalow became one of the most widespread architectural movements in California. The adaptation of the Greene and Greene bungalow model for the masses contributed to its appeal and application to meet the needs of the housing booms happening across California following World War I. Builders and contractors began to mass-produce bungalow designs in pattern books and made them more available to the public.

Although the Greene and Greene bungalows represent the highest artistic and pure forms of the movement, it is in the modest, vernacular application in places like rural parts of Southern California that the mass

production of the key characteristics of the style can be seen. However, the subject property lacks some of the most distinctive characteristics of vernacular bungalows in California, including a full or partial front porch with columns, multi-pane windows, and exposed rafters (McAlester 2013:566-578, Gottfried 2009: 26, 190-194, SurveyLA Context 14-15).

Archival building permit research failed to provide information regarding the original builder or architect, but it is not likely to be the work of a master. Finally, the property does not appear eligible as a contributing property to an historic district. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

The subject property is unlikely to yield any information important in prehistory or history and therefore does not appear eligible under NRHP/CRHR Criteria D/4.

Integrity Considerations

The property's location has remained unchanged since its initial construction, always located on a small, suburban parcel and functioning as a residential building. When the subject property was originally developed, it was one of the earlier residences in a very rural part of what would become the City of Carson. The area continued to develop as a suburban neighborhood over the next few decades, thus altering the rural nature of the location. The location, setting, and feeling of the building were further compromised by the construction of the 110 Freeway. Completed in 1970, the 110 Freeway located on the west side of the property significantly altered the suburban nature of the neighborhood and eventually led to the construction of a sound wall at the edge of the property, thus compromising the integrity of setting, location, and feeling. In addition to the freeway construction, the outbuilding located to the west of the main house was converted into a living unit and is now associated with 21809 South Figueroa Street. Furthermore, alterations to the house for a half-unit rental in the rear of the building greatly compromised the feeling of the building as a single-family residence. The subject property has also lost much of its requisite integrity of design, materials, and workmanship due to significant alterations, including replacement of original windows and doors, reconfiguration of entrances, enclosure of front porch, and the addition of a half-unit at the rear of the building.

6.3 Conclusions

All built-environment resources within the project area were recorded and evaluated in consideration of NRHP and CRHR designation criteria and integrity requirements. As a result of the significance evaluations, all built-environment resources within the project area were found not eligible for listing in the NRHP or CRHR. Therefore, none of the buildings and structures within the project area are considered historical resources, as defined by CEQA Guidelines Section 15064.5(a).

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7 FINDINGS AND MANAGEMENT RECOMMENDATIONS

The current study included a CHRIS records search, Native American coordination, building development and archival research, a pedestrian survey, and evaluation of two properties within the project area (21809 South Figueroa Street and 21811 South Figueroa Street) for NRHP and CRHR eligibility (see complete DPR form in Appendix C).

7.1 Summary of Findings

Built Environment

The buildings and structures at 21809 South Figueroa Street and 21811 South Figueroa Street were found not eligible under all NRHP and CRHR designation criteria and integrity requirements. Therefore, these properties are not considered historical resources for the purposes of CEQA, and no recommendations for management are required.

Archaeology

One Native American contact recommended Native American monitoring during all ground-disturbing activities. No archaeological resources were identified within the project site as a result of the CHRIS records search or Native American outreach. However, it is always possible that intact archaeological deposits are present at subsurface levels. For these reasons, the project site should be treated as potentially sensitive for archaeological resources. Management recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during campus construction activities are provided below.

As a result of the current study, the proposed project will have a less-than-significant impact on historical resources. No additional mitigation is required beyond standard protection measures for archaeological resources (see Sections 7.2.1 and 7.2.2).

7.2 Management Recommendations

Unanticipated Discovery of Archaeological Resources

If archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find under CEQA (14 CCR 15064.5(f); California PRC, Section 21082), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant

under CEQA, additional work, such as preparation of an archaeological treatment plan and data recovery, may be warranted.

Unanticipated Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California PRC, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant from the deceased Native American. The most likely descendant shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

8 BIBLIOGRAPHY

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APPENDIX A

CONFIDENTIAL SCCIC Records Search Results

APPENDIX B

Native American Group Coordination

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

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

October 16, 2017

Samantha Murray
Dudek

Sent by E-mail: smurray@dudek.com

RE: Proposed Birch Specific Plan Project, City of Carson; Torrrance USGS Quadrangle, Los Angeles County, California

Dear Ms. Murray:

A records 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
10/16/2017

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chariperson
P.O. Box 393 Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
gabrielenoindians@yahoo.com

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

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

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

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

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 Birch Specific Plan Project, Los Angeles County.

DUDEK

3544 UNIVERSITY AVENUE
RIVERSIDE, CALIFORNIA 92501
T 951.300.2100 F 951.300.2105

October 17, 2017 10029_03

Mr. Charles Alvarez, Councilman
Gabrielino Tongva Tribe
23454 Vanowen St.
West Hills, CA 91307

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

Dear Mr. Alvarez:

The City of Carson retained Dudek to conduct a cultural resources study in support of the proposed Birch Specific Plan Project (project) located in the City of Carson, Los Angeles County, California. The proposed project would involve construction of 32 residential condominium units with on-grade parking and three levels of residential units above it, along with associated on-site adjustments such as parking and landscaped areas. The proposed project would also involve demolition of the three existing residential structures located on the project site

The 0.78-acre site consists of two parcels (APN 7343-020-009; APN 7343-020-010). The street addresses associated with the project site are 21809- 21811 South Figueroa Street. The project site is bounded by high density residential (25 dwelling units per acre) uses to the north and south, South Figueroa Street to the east, and I-110 to the west. The project falls within Section 7, Township 4 South, Range 13 West of the *Torrance* U.S. Geological Service 7.5-minute series topographic Quadrangle map (see Project Location Map).

As part of the cultural resources study prepared for the proposed project, Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed project area. The NAHC emailed a response on October 16, 2017, which stated that the SLF search failed to indicate the presence of Native American cultural resources in the immediate project area.

The NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by this project. If you have any knowledge of cultural resources that may exist within or near the proposed project area, please contact me directly at (760) 840-7556, adorrler@dudek.com, or at 3544 University Avenue, Riverside, CA 92501 within 30 days of receipt of this letter.

Mr. Alvarez:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

---

Please note that this letter does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. AB 52 is a process between the lead agency and California Native American Tribes concerning potential impacts to tribal cultural resources. Tribes that wish to be notified of projects for the purposes of AB 52 must contact the lead agency, the City of Carson, in writing (pursuant to Public Resources Code Section 21080.3.1 (b)).

Thank you for your assistance.

Sincerely,

A. Dorrler

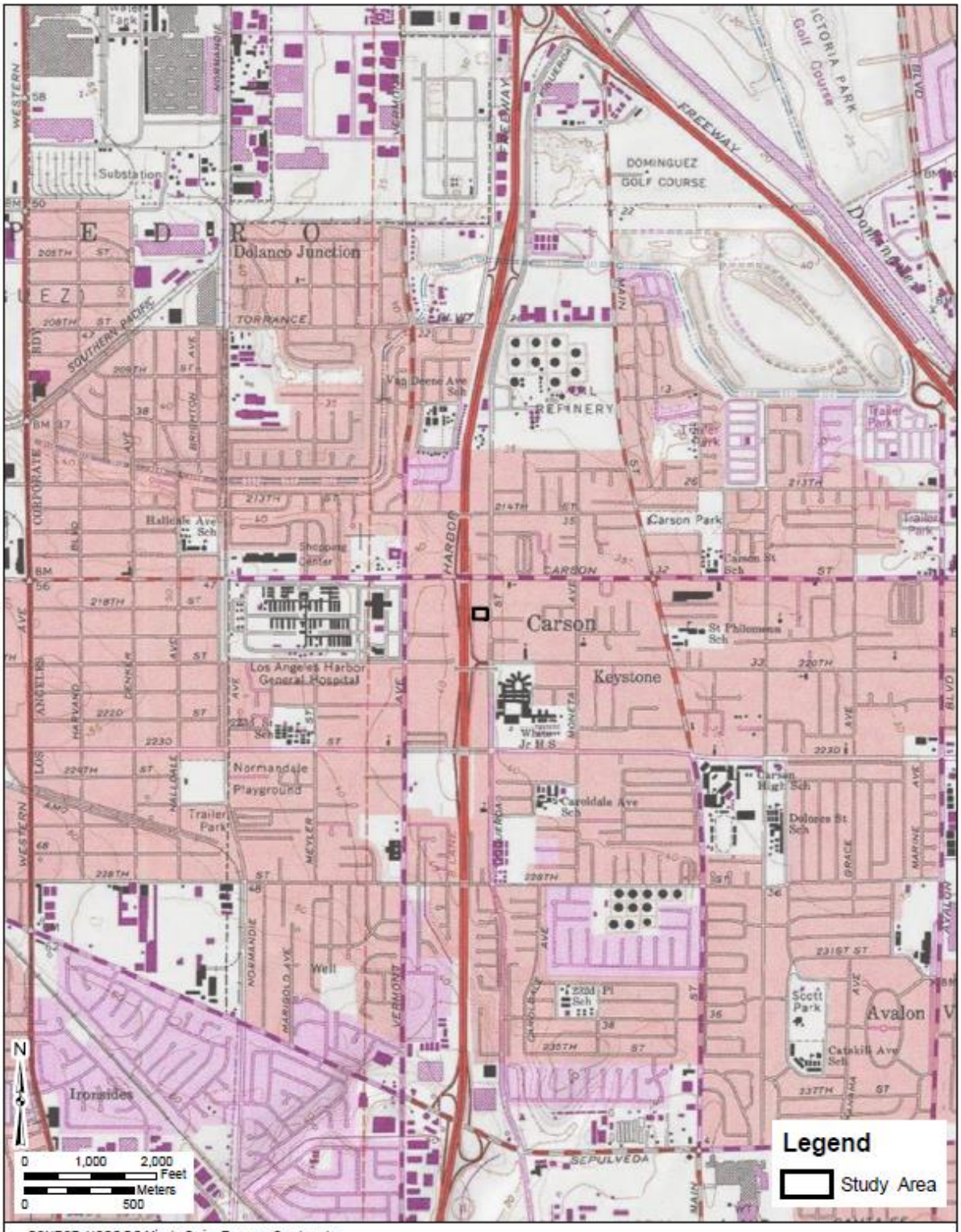
_____

Adriane Dorrler
Archaeologist

Attachments: Project Location Map

Mr. Alvarez:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California



SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Sections 7, 13, 18

Project Location Map

Birch SP

DUDEK

3544 UNIVERSITY AVENUE
RIVERSIDE, CALIFORNIA 92501
T 951.300.2100 F 951.300.2105

October 17, 2017 10029_03

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

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

Dear Mr. Dorame:

The City of Carson retained Dudek to conduct a cultural resources study in support of the proposed Birch Specific Plan Project (project) located in the City of Carson, Los Angeles County, California. The proposed project would involve construction of 32 residential condominium units with on-grade parking and three levels of residential units above it, along with associated on-site adjustments such as parking and landscaped areas. The proposed project would also involve demolition of the three existing residential structures located on the project site

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Mr. Dorame:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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Thank you for your assistance.

Sincerely,

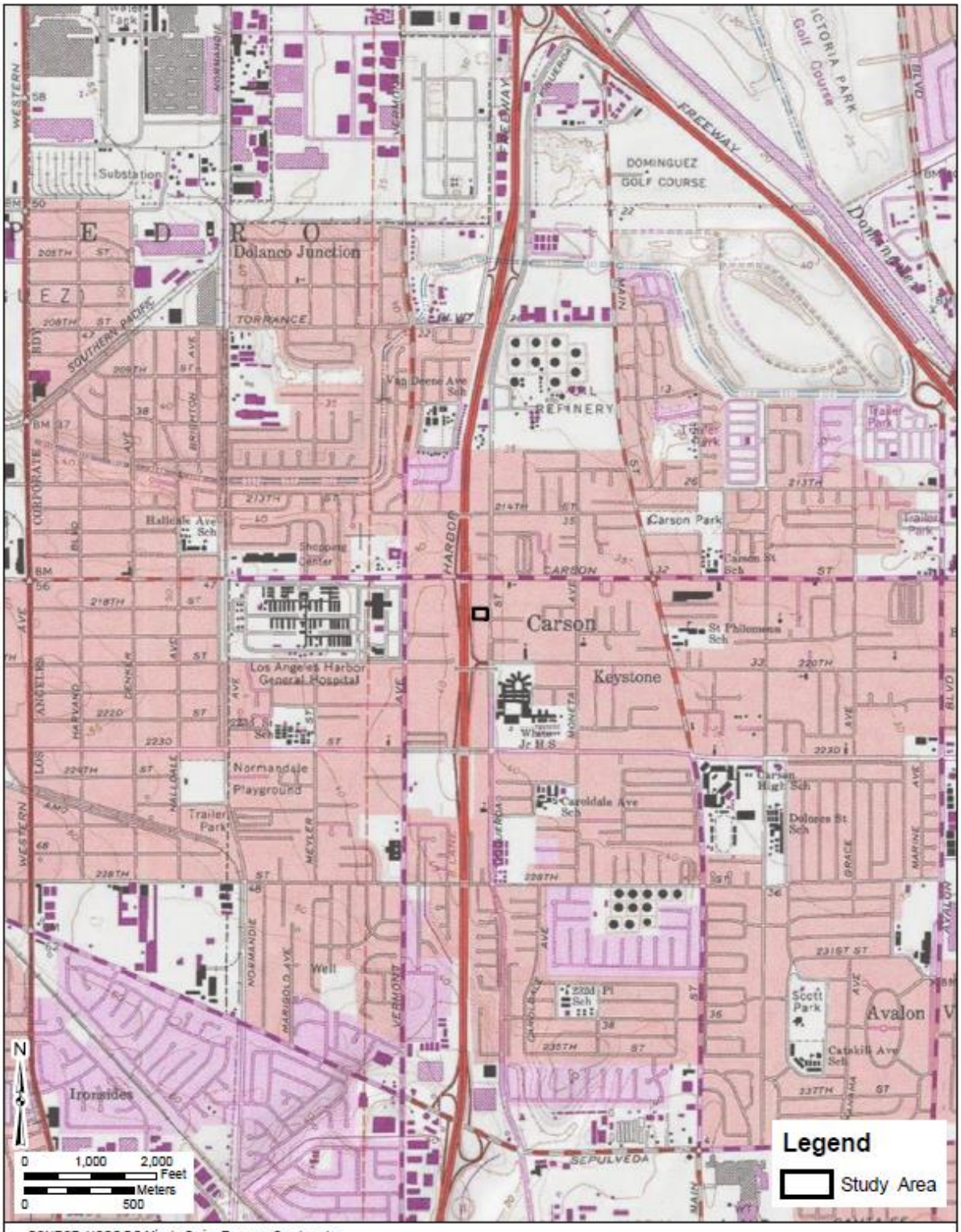
A. Dorrler

Adriane Dorrler
Archaeologist

Attachments: Project Location Map

Mr. Dorame:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California



SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Sections 7, 13, 18

Project Location Map

Birch SP

DUDEK

3544 UNIVERSITY AVENUE
RIVERSIDE, CALIFORNIA 92501
T 951.300.2100 F 951.300.2105

October 17, 2017 10029_03

Ms. Sandonne Goad, Chairperson
Gabrielino-Tongva Nation
106 1/2 Judge John Also St.
Los Angeles, CA 90012

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

Dear Ms. Goad:

The City of Carson retained Dudek to conduct a cultural resources study in support of the proposed Birch Specific Plan Project (project) located in the City of Carson, Los Angeles County, California. The proposed project would involve construction of 32 residential condominium units with on-grade parking and three levels of residential units above it, along with associated on-site adjustments such as parking and landscaped areas. The proposed project would also involve demolition of the three existing residential structures located on the project site

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Ms. Goad:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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Thank you for your assistance.

Sincerely,

A. Dorrler

Adriane Dorrler
Archaeologist

Attachments: Project Location Map

Ms. Goad:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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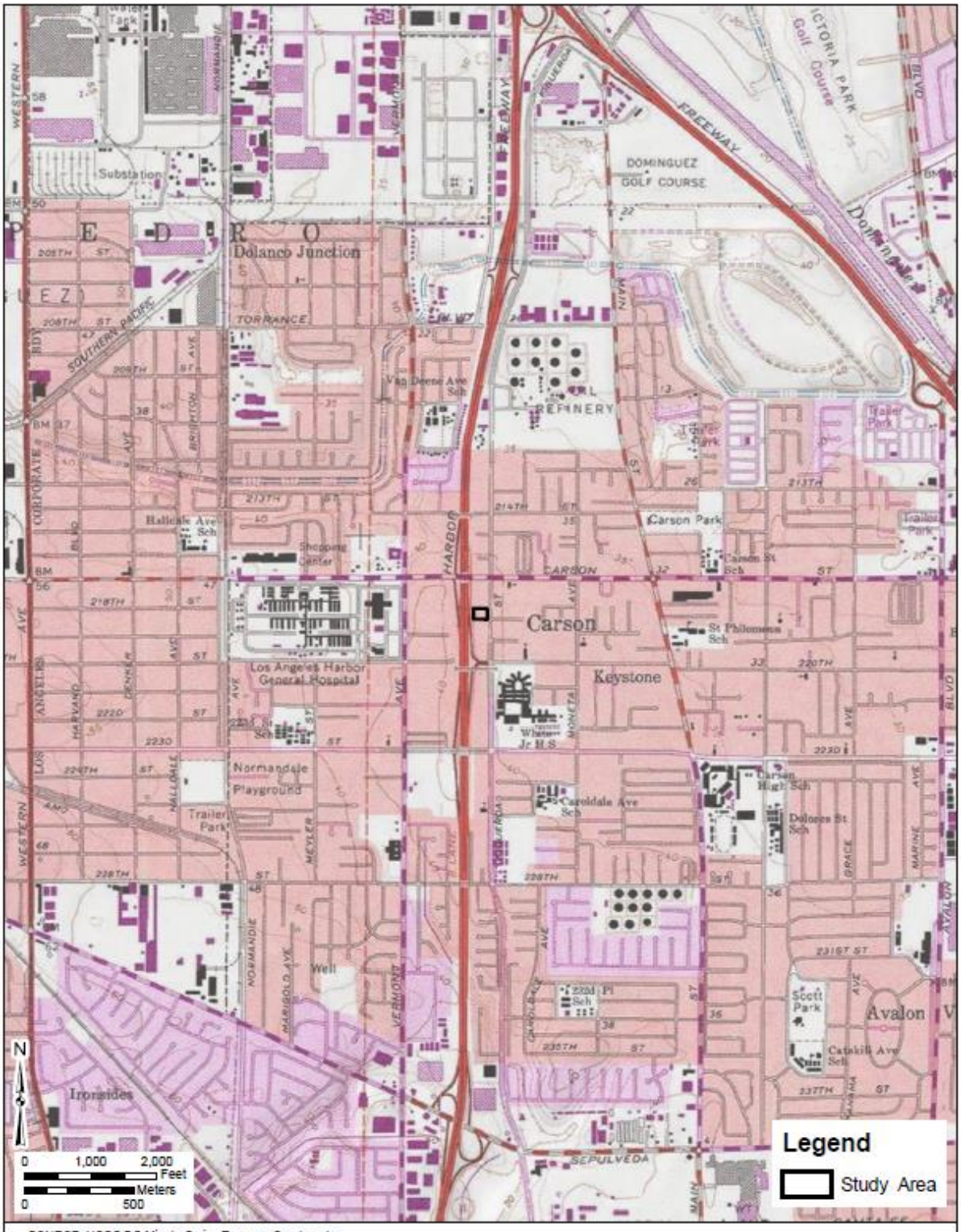

SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Sections 7, 13, 18

Project Location Map

Birch SP

DUDEK

3544 UNIVERSITY AVENUE
RIVERSIDE, CALIFORNIA 92501
T 951.300.2100 F 951.300.2105

October 17, 2017 10029_03

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

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

Dear Mr. Morales:

The City of Carson retained Dudek to conduct a cultural resources study in support of the proposed Birch Specific Plan Project (project) located in the City of Carson, Los Angeles County, California. The proposed project would involve construction of 32 residential condominium units with on-grade parking and three levels of residential units above it, along with associated on-site adjustments such as parking and landscaped areas. The proposed project would also involve demolition of the three existing residential structures located on the project site

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Mr. Morales:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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Thank you for your assistance.

Sincerely,

A. Dorrler

Adriane Dorrler
Archaeologist

Attachments: Project Location Map

Mr. Morales:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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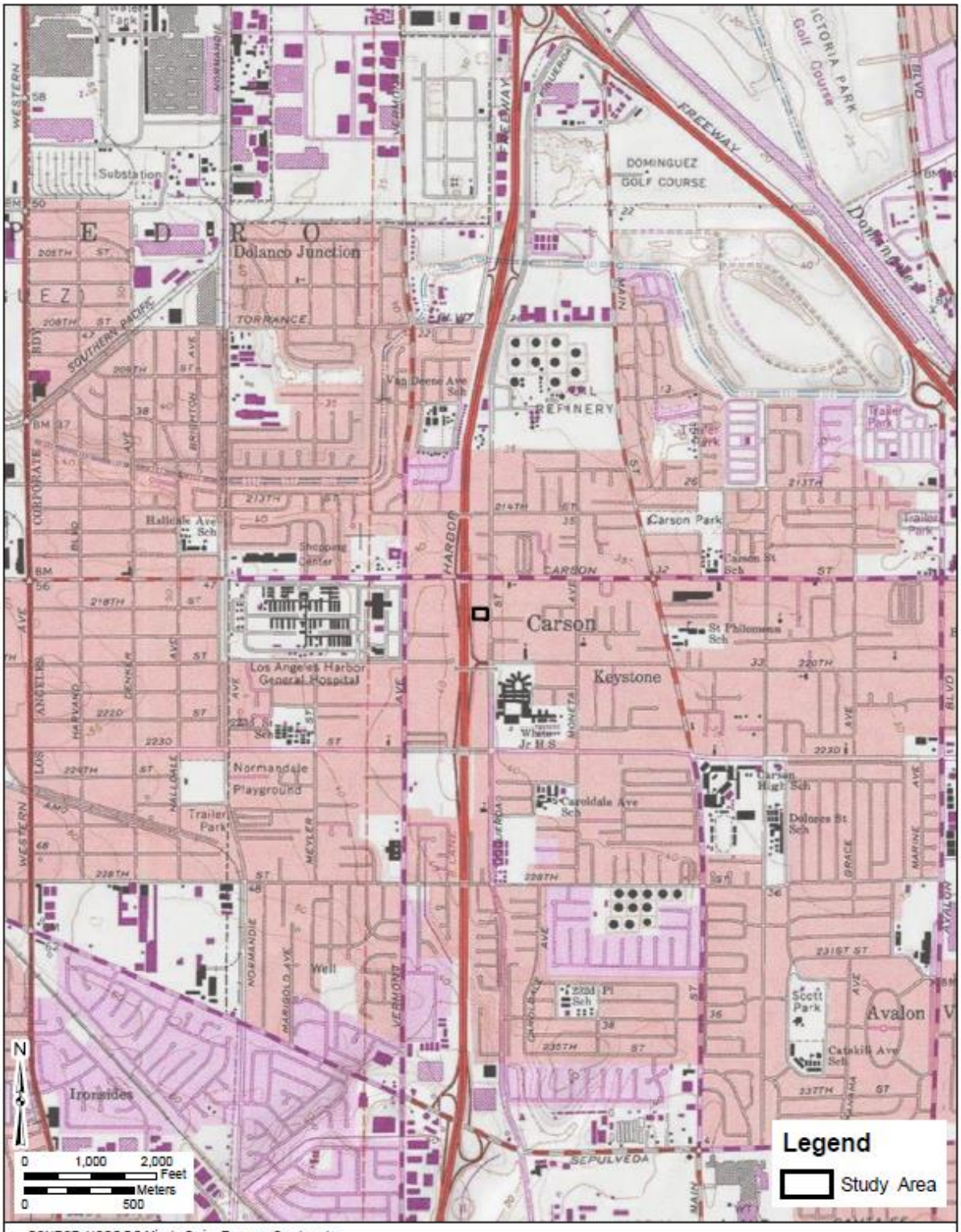

SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Sections 7, 13, 18

Project Location Map

Birch SP

DUDEK

3544 UNIVERSITY AVENUE
RIVERSIDE, CALIFORNIA 92501
T 951.300.2100 F 951.300.2105

October 17, 2017 10029_03

Mr. Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

Dear Mr. Salas:

The City of Carson retained Dudek to conduct a cultural resources study in support of the proposed Birch Specific Plan Project (project) located in the City of Carson, Los Angeles County, California. The proposed project would involve construction of 32 residential condominium units with on-grade parking and three levels of residential units above it, along with associated on-site adjustments such as parking and landscaped areas. The proposed project would also involve demolition of the three existing residential structures located on the project site

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Mr. Salas:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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Thank you for your assistance.

Sincerely,

A. Dorrler

Adriane Dorrler
Archaeologist

Attachments: Project Location Map

Mr. Salas:

Subject: Birch Specific Plan Project, City of Carson, Los Angeles County, California

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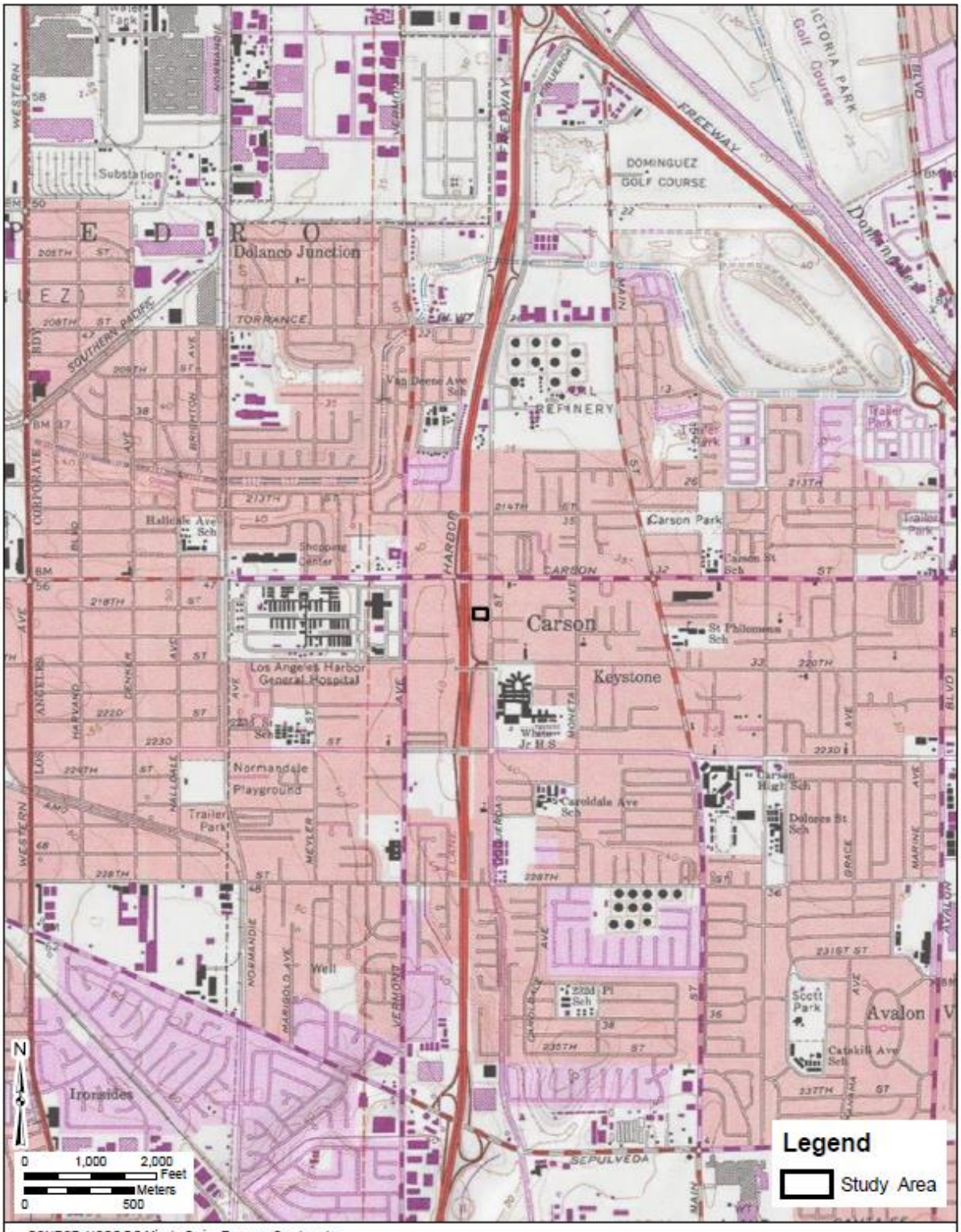

SOURCE: USGS 7.5-Minute Series Torrance Quadrangle
Township 4S; Range 13W, 14W; Sections 7, 13, 18

Project Location Map

Birch SP

Gabrieleno 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

October 25, 2017

Regarding: Birch Specific Plan City of Carson, Los Angeles County CA

Dear Adriane Dorrler,

This email is in response to the above referenced project located at 21809-21811 Figueroa St. Carson . The project location is within our Ancestral territory which may have potential for discoveries of our cultural resources . Therefore, we would like to request that one of our Native Monitors be present during any and all ground disturbances.

Should you have any questions or concerns, please contact our office at 844-390-0787.

Thank you,

Andrew Salas
Chairman, Gabreileno Band of Mission Indians-Kizh Nation

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APPENDIX C

DPR Forms

State of California ♿ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 9 ***Resource Name or #:** (Assigned by recorder) 21809 South Figueroa Street
P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

***a. County** Los Angeles **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Torrance **Date** 1964 **T** 4S ; **R** 13W ; SE ¼ **of** SE 1/4 **of Sec** 18 ; SB **B.M.**

c. Address 21809 South Figueroa Street City Carson Zip 90745

d. UTM: (Give more than one for large and/or linear resources) Zone 11S , 380936.57 m E/ 3744075.65 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate) APN:7343020010. The subject property is bound by residential properties to the north and south; Figueroa Street to the east; and the 110 Freeway to the west.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property contains a Ranch-style, single-family residence built in 1955 (Los Angeles County Assessor) facing South Figueroa Street and an outbuilding that has been converted into a living space to the south of the main residence.
See Continuation Sheet.

***P3b. Resource Attributes:** (List attributes and codes) HP2. Single Family Property, HP3. Multiple Family Property
***P4. Resources Present:** ■ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)
P5b. Description of Photo: (view, date, accession #) Main elevation of 21809 South Figueroa Street, view to west, Image No. IMG_4655.

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

***P6. Date Constructed/Age and Source:** ■ Historic ☐ Prehistoric ☐ Both
1955 (Los Angeles County Assessor)

***P7. Owner and Address:**
Real Quest Holding, LLC
665 Chester Avenue
San Marino, CA 91108

***P8. Recorded by:** (Name, affiliation, and address)
Sarah Corder, Dudek
38 N Marengo Avenue
Pasadena, CA 91104

***P9. Date Recorded:** 11/9/2017

***P10. Survey Type:** (Describe)
Intensive pedestrian

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Cultural Resources Study for the Birch Specific Plan Project, City of Carson, California, Los Angeles County, California. Dudek 2017.

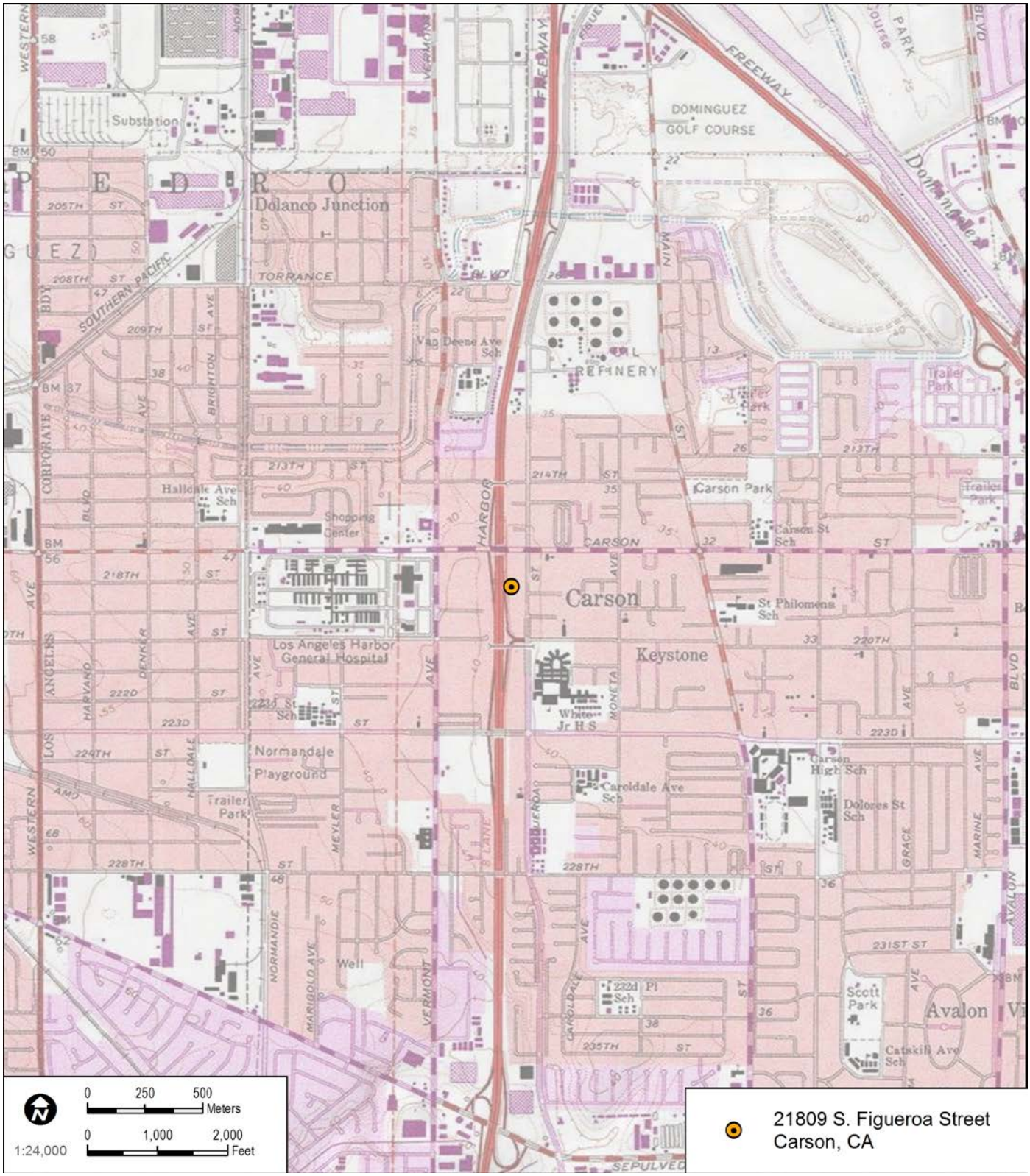
***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ♘ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 9 ***Resource Name or #** (Assigned by recorder) _21809 South Figueroa Street_
***Map Name:** Torrance, California ***Scale:** 1:24,000 ***Date of map:** 1964



State of California ♿ The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 21809 South Figueroa Street ***NRHP Status Code** 6Z
Page 3 **of** 9

B1. Historic Name: 21809 South Figueroa Street
B2. Common Name:
B3. Original Use: single-family residence
B4. Present Use: single-family residence
***B5. Architectural Style:** Ranch
***B6. Construction History:** (Construction date, alterations, and date of alterations)

According to Los Angeles County Assessor records, 21809 South Figueroa Street was constructed in 1955, but no original building permit could be found in the City of Carson building permit file. According to the City of Carson, there are no building permits for this property prior to 1982. After 1982, there are a series of permits for the property that the Building and Safety Department claims were never finalized. Based on discussions with the Building and Safety office, there was a plan to construct condominiums on the property in the 1980s and 1990s under the Salamat ownership of the property, but these plans were never executed. Despite the lack of permits, there are multiple observed alterations to the house, including the addition to the south side of the house for garage and living area, replacement windows, replacement doors, installation of window AC units, reroofing, addition of brick veneer detailing on front porch, installation of exterior lights, installation of exterior mechanical systems, and the replacement of front yard with large concrete parking area.

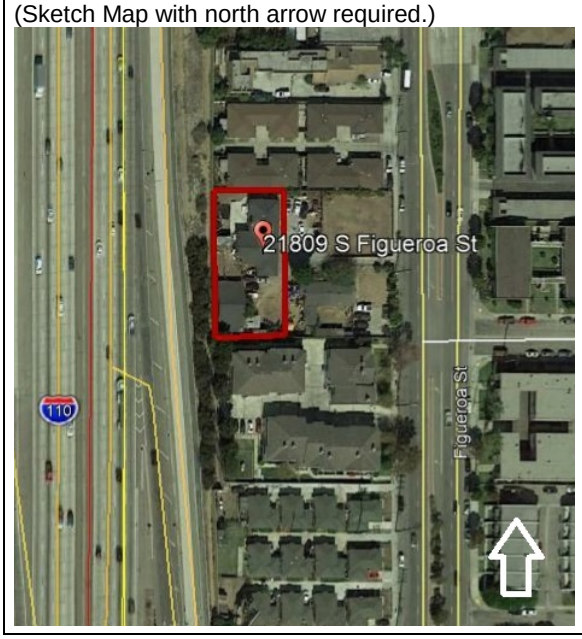
***B7. Moved?** ■**No** □**Yes** □**Unknown** **Date:** **Original Location:**
***B8. Related Features:**
B9a. Architect:
b. Builder:
***B10. Significance: Theme** n/a **Area** n/a

Period of Significance n/a **Property Type** Residential **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
See Continuation Sheet

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:** **See Continuation Sheet**
B13. Remarks:

***B14. Evaluator:** Sarah Corder
***Date of Evaluation:** 11/9/2017

(Sketch Map with north arrow required.)



(This space reserved for official comments.)

***P3a. Description (Continued):**

Main House: The one-story Ranch-style, single-family residence is irregular in plan. The building's exterior is primarily stucco-clad with sections of horizontal wood siding present on the primary façade that terminates at the base of the window. The building also features a hipped roof sheathed in composition shingles. The east (main) elevation presents as two sections: a left (southern) section featuring a single-car width garage and a central section of the house distinguished by an integral porch and brick chimney that pierces the roof. The integral porch has a concrete slab foundation with decorative brick veneer at the entry point, which is accessed by a front walkway with two steps. Fenestration across the main elevation is irregular and contains a large tripartite window with a fixed center section flanked by two sliding windows, two one-over-one vinyl replacement windows in different sizes, a replacement six-panel entry door, and two sets of paired one-over-one vinyl replacement windows (See Figure 1).

Observed alterations to the main house include the addition of a garage and living area to the south side of the house that creates an L-shape plan visible from the rear of the house, replacement windows, re-roofing, the addition of horizontal wood siding to the main elevation, the addition of brick veneer to the porch, installation of window AC units, and replacement doors throughout. According to information provided by the current owner, the building's interior is currently configured as a single-family residence with three bedrooms and two bathrooms.

Figure 1. Main elevation of 21809 South Figueroa Street, view to west, Image No. IMG_4655.

Outbuilding 1: There is a one-story building located southwest of the main house. The one-story building features a gabled roof with a mix of horizontal and vertical wood siding. Although the building appears to have originally functioned as a shed or garage, it was converted (date unknown) to a residential unit. The east (main) elevation presents as a single section that is asymmetrical and features irregular fenestration. The fenestration contains vinyl, horizontal slider windows in a variety of configurations and sizes with false window grilles, as well as an offset to the south entry point that features a replacement six-paneled door. The entry point is accessed by a brick and stone path terminating at a covered patio/carport structure (See Figure 2).

Figure 2. Main elevation of 21809 South Figueroa Street Outbuilding 1, view to west, Image No. IMG_4507.

Outbuilding 2: There are two small temporary metal building located east of Outbuilding 1 (see Figure 3). The one-story buildings appear to be joined together, but were likely originally two separate temporary buildings.

Figure 3. 21809 South Figueroa Street Outbuilding 2, view to southwest, Image No. IMG_4508.

***B10. Significance** (continued)**:**

The first records found pertaining to 21809 South Figueroa Street are deed records dating from 1947 when Harl and Jewel Rightmire deeded half of the property to Fred S. Pumphrey and half of the property to Edward and Beatrice Pumphrey (Deed Book Page 554). Due to a lack of deeds and building permits, it is difficult to determine who owned the property prior to the Rightmires. Despite the lack of building permits, it seems likely that the Pumphrey family constructed the one-story ranch house on the property in 1955 given their ownership of the property at the time. Like other property owners in Carson, the Pomphreys granted a portion of their lot to the State of California for the construction of the 110 Freeway in 1955 (Deed dated January 20, 1955, number illegible). The Pumphreys maintained ownership of the property until 1962, when Beatrice Pumphrey deeded the property to R.B. and Joan Keith (Document No. 1208).

During the Keiths' ownership of the property, it was subdivided into the "north 65 feet of lot 41" and the "south 50 feet of the north 115 feet of lot 41." It is unclear why the property was subdivided into two sections at this time, but it appears that Alfred and Alice Hilburn owned the southern portion and Clayton and Beatrice Marsh owned the northern portion (Document Nos. 1869 and 1638). The property continued to be referenced as two separate parcels until the late 1960s.

Towards the end of the 1960s, another owner appears in the deeds named M. Jean Cochran. Based on the information found in the grant deed information, Cochran owned lots 40, 41, and 48 and maintained her ownership until the early 1970s when her name is no longer part of deeds. It was not until this time that the property (including Building 1 and Building 2) became Lot 41 as it appears on the Assessor's Parcel map today (Document Nos. 2433, 2056, 1978, and 4563).

According to Los Angeles County Assessor records, 21809 South Figueroa Street was constructed in 1955, but no original building permit could be found in the City of Carson building permit file. According to the City of Carson, there are no building permits for this property prior to 1982. After 1982, there are a series of permits for the property that the Building and Safety Department claims were never finalized. Based on discussions with the Building and Safety office, there was a plan to construct condominiums on the property in the 1980s and 1990s under the Salamat ownership of the property, but these plans were never executed. Despite the lack of permits, there are multiple observed alterations to the house, including the addition to the south side of the house for garage and living area, replacement windows, replacement doors, installation of window AC units, reroofing, addition of brick veneer detailing on front porch, installation of exterior lights, installation of exterior mechanical systems, and the replacement of front yard with large concrete parking area.

Archival research found that the property has been used for many years as a rental unit and was not owner occupied. Recent deeds also suggest that the property was combined with 21811 South Figueroa Street and the property as a whole was transferred through multiple owners in recent years and currently functions a single-family residence with three bedrooms and two bathrooms (Egbert 2017).

Historic aerial photographs via Nationwide Environmental Title Research LLC (NETR) were reviewed from the years 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. The earliest historic photograph of 21809 South Figueroa Street from 1963 indicates the building is roughly rectangular with similar scale and massing to its current design. The building is also designed to face South Figueroa Street. The remaining aerial photographs do not show significant changes to the subject property over the years (NETR 2017).

Ranch (c. 1935–1975)

The Ranch house is a style of architecture that was popular starting in the 1930s and fell out of popularity by the 1980s. In the 1930s and early 1940s, the Ranch house was part of the Small House movement that was brought into fashion by the Federal Housing Administration. Like the Minimal Traditional house, the Ranch house could be constructed quickly and use modern materials that could be mass-produced. The style provided an easy option for large-scale housing tracts during the 1930s and 1940s to meet the needs of relocated war-effort workers and those of soldiers returning home and starting families. Following the war years, a new era of prosperity brought about a departure from the Small House movement, and the Ranch house became a popular house type throughout the late 1940s through the 1970s.

The Ranch house of the 1930s and 1940s maintained similar characteristics to newer versions, but small lot sizes in housing tracts made the concept of the rambling Ranch house almost impossible. In the 1950s, post-war prosperity combined with increased lot sizes made the larger and more recognizable Ranch house possible. The ability of the Ranch house to exist in different sizes and arrangements made it one of the most popular house choices throughout the United States across multiple social classes.

Key characteristics of the Ranch style of architecture are the following (Gottfried and Jennings 2009; Hess 2004; McAlester 2015):

- One story in height
- Gabled or hipped roofs constructed with a low pitch and moderate overhang
- Offset entry points causing asymmetry in the façade
- Focus on horizontal and rambling forms
- Focus on informality
- Entry points are typically placed under the roof overhang on the façade
- Use of large picture-style windows on the façade
- Variations on the eave overhang, typically boxed eaves or exposed rafter tails, or the less-common boxed rafters
- Large chimneys
- Variety of exterior cladding, including brick and stone
- Attached garage, typically incorporated into the façade
- Front and rear yards
- Large rectangular blocks are the basis for the plan design and could be simply rectangular or a combination of rectangular blocks to create L, U, and T shapes in plan.

NRHP/CRHR Designation Criteria

The subject property is one of many single-family residences in the area from approximately the same period of construction (1950s-1960s) and no significant historical associations or patterns of development were identified. Residential development in Carson like other Southern California cities boomed following World War II and the rise of industrialization that created jobs and shifted the economic focus from agriculture to industry. This pattern of development was seen across the United States during and after World War II, when industry began to boom and residential development became a priority to house a growing post-war population. Due to a lack of significant associations with events important to history, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.

Archival research also failed to indicate any associations with significant persons. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.

To support the population growth, builders in Carson turned to one of the most popular styles of the time, the Ranch Style. The main house is a relatively poor example of a Ranch style residence constructed in 1955 when Carson was experiencing a residential boom during a period of Post-War growth. While the most basic elements of the Ranch Style are evident, the property is a very modest example of the style and lacks some of the more character-defining features of the style such as large prominent chimneys, attached garages, and large front yards. Further, the house exhibits substantial alterations including removal of original windows, doors and an addition to the south end of the house that disrupts the original scale and massing.

Finally, archival building permit research failed to provide information regarding the original builder or architect, but it is not likely to be the work of a master architect or important creative individual. Finally, the property does not appear eligible as a contributing property to an historic district. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

The subject property is unlikely to yield any information important in prehistory or history and therefore does not appear eligible under NRHP/CRHR Criteria D/4.

Integrity Considerations

The property's location has remained unchanged since its initial construction, always located on a small, suburban parcel and functioning as a single-family residence. When the subject property was originally developed, it was surrounded by other single-family and multifamily residences to support the growing population of Carson. However, the construction of the 110 Freeway quickly altered the landscape of the area. Completed in 1970, the 110 Freeway located on the west side of the property significantly altered the suburban nature of the neighborhood and eventually led to the construction of a sound wall at the edge of the property, thus compromising the integrity of setting, location, and feeling. In addition to the freeway construction, the subject property was converted to a living space, thus altering the feel of the building as a single-family residential property. The subject property has also lost much of its requisite integrity of design, materials, and workmanship due to significant alterations, including replacement of original windows and doors, and an addition to the south end of the house that disrupts the original scale and massing.

***B12. References** (continued):

City of Carson Directories, various Years.

Deed Records for 21809 South Figueroa Street, 1947-2017. Available at the Los Angeles County Clerk's Office.

Egbert, B. 2017. Emails and meeting between B. Egbert (Property Owner) and S. Corder (Dudek).

Gottfried, H., and Jan Jennings. 2009. *American Vernacular Buildings and Interiors 1870–1960*. New York: WW. Norton and Company.

Hess, A. 2004. *The Ranch House*. New York: Harry N. Abrams.

McAlester, V.S. 2015. *A Field Guide to American Houses*. New York: Alfred A. Knopf.

NETR (Nationwide Environmental Title Research). 2017. Historical aerial photographs from 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. Accessed November 13, 2017. Historicaerials.com.

NPS (National Park Service). 1990. "How to Apply the National Register Criteria for Evaluation." Accessed November 21, 2017. https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf.

State of California ♿ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 8 ***Resource Name or #:** (Assigned by recorder) 21811 South Figueroa Street
P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

***a. County** Los Angeles **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Torrance **Date** 1964 **T** 4S ; **R** 13W ; SE ¼ **of** SE 1/4 **of Sec** 18 ; SB **B.M.**

c. Address 21811 South Figueroa Street City Carson Zip 90745

d. UTM: (Give more than one for large and/or linear resources) Zone 11S , 380960.09 m E/ 3744049.33 m N

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate) APN:7343020009. The subject property is bound by residential properties to the north and south; Figueroa Street to the east; and the 110 Freeway to the west.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property contains a main house with one outbuilding and a set of animal enclosures, which are located south of the main house.
See Continuation Sheet.

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

***P3b. Resource Attributes:** (List attributes and codes) HP3. Multiple Family Property

***P4. Resources Present:** ■ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) Main elevation of 21811 South Figueroa Street, view to west, Image No. IMG_4617.

***P6. Date Constructed/Age and Source:** ■ Historic ☐ Prehistoric ☐ Both
1929 (Los Angeles County Assessor)

***P7. Owner and Address:**
Real Quest Holding, LLC
665 Chester Avenue
San Marino, CA 91108

***P8. Recorded by:** (Name, affiliation, and address)
Sarah Corder, Dudek
38 N Marengo Avenue
Pasadena, CA 91104

***P9. Date Recorded:** 11/9/2017

***P10. Survey Type:** (Describe)
Intensive pedestrian

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Cultural Resources Study for the Birch Specific Plan Project, City of Carson, California, Los Angeles County, California. Dudek 2017.

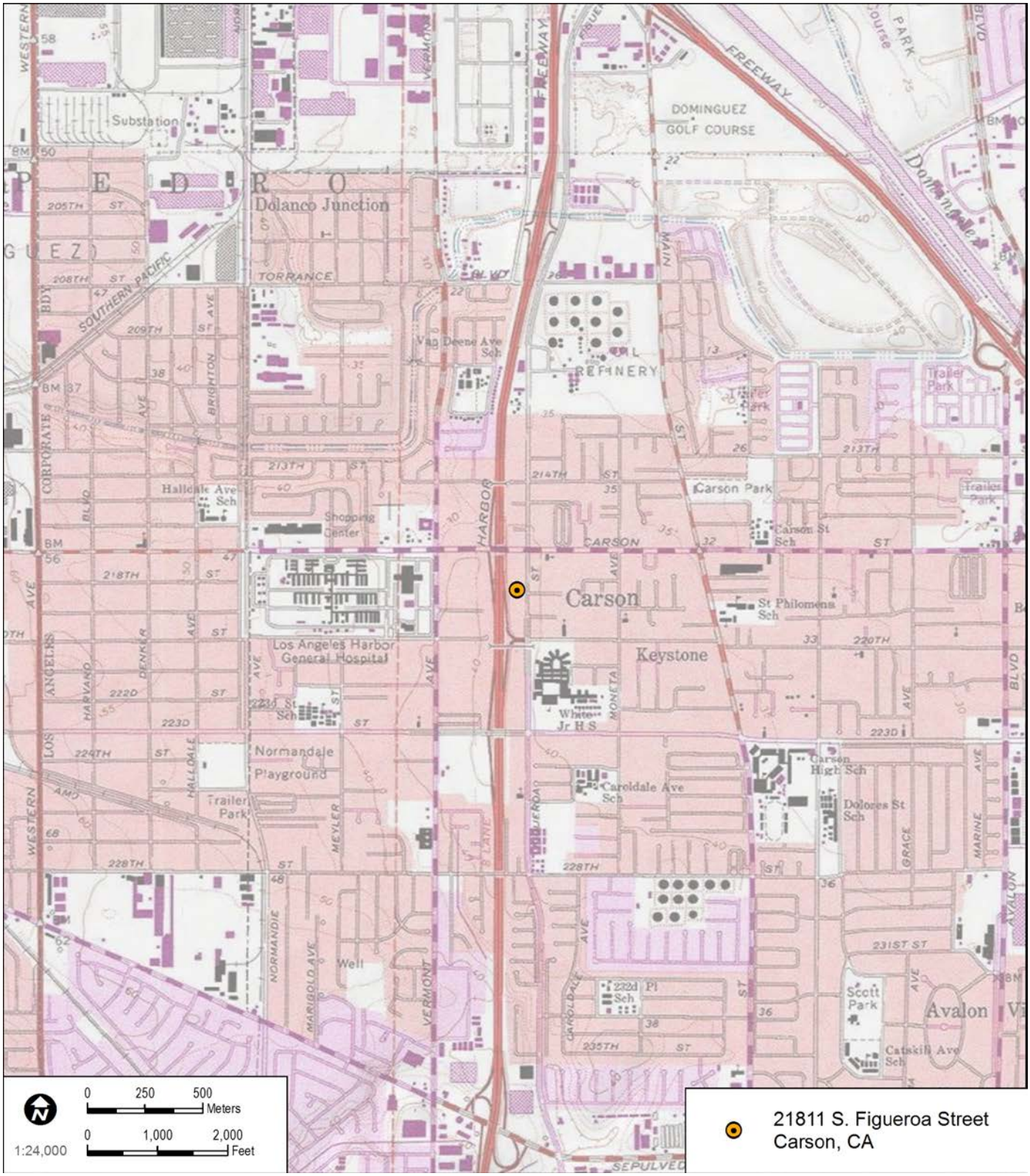
***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ♘ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 8 ***Resource Name or #** (Assigned by recorder) _21811 South Figueroa Street_
***Map Name:** Torrance, California ***Scale:** 1:24,000 ***Date of map:** 1964



BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 21811 South Figueroa Street ***NRHP Status Code** 6Z
Page 3 **of** 8

B1. Historic Name: 21811 South Figueroa Street
B2. Common Name:
B3. Original Use: single-family residence
B4. Present Use: multiple family residence
***B5. Architectural Style:** Heavily altered vernacular Bungalow
***B6. Construction History:** (Construction date, alterations, and date of alterations)

According to Los Angeles County Assessor records, the residence was constructed in 1929, but no original building permit could be found in the City of Carson building permit file. One major change to the building occurred circa 1955, when a half unit was added to the rear of the house, likely to function as a rental property. There were a series of documented alterations to the house and property over the years, including plumbing for the establishment of a laundry connection in the half unit in 1955 (Permit No. 9621), electrical work in 1955 to the half unit (Permit No. 0207), connection of sewer for the half unit in 1958 (Permit No. 8527), installation of a new water heater for the half unit in 1978 (Permit No. 0625), demolition of existing building on the site (Permit No. 6770A), and the addition of a single detached carport (Permit No. 2473A). There are also multiple observed alterations to the house, including enclosure of the front porch, application of stucco to the main elevation, reconfiguration of windows and doors, addition of a half unit to the rear of the house (circa 1955), reroofing, replacement doors, replacement windows, the addition of exterior lighting on main elevation, reconfiguration of the front yard for large concrete parking area, installation of window AC units, and replacement of sections of asbestos siding.

***B7. Moved?** ■**No** □**Yes** □**Unknown** **Date:** **Original Location:**
***B8. Related Features:**
B9a. Architect:
b. Builder:
***B10. Significance: Theme** n/a **Area** n/a
Period of Significance n/a **Property Type** Residential **Applicable Criteria** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
See Continuation Sheet

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References: See Continuation Sheet**
B13. Remarks:

***B14. Evaluator:** Sarah Corder
***Date of Evaluation:** 11/9/2017

(Sketch Map with north arrow required.)

(This space reserved for official comments.)

***P3a. Description:** (continued)

Main House: The main house is a heavily altered vernacular Bungalow-style residence built in 1929 (Los Angeles County Assessor) facing onto South Figueroa Street (Figure 8). The one-story building is L shape in plan with sections of horizontal asbestos siding and stucco set under a multi-gabled roof covered with composition shingles. The house has been significantly altered from its original design including alteration of the east (main) elevation. While the original design has been altered beyond recognition, it is possible that the main elevation featured a small porch that has since been enclosed and reconfigured. Currently, the asymmetrical façade features irregular fenestration that includes a one-over-one wood window, an offset to the north replacement six-paneled entry door obscured by a metal security door, and the remnants of a six lite window to the north. The remaining elevations feature irregular fenestration with a mix of original wood-frame windows and replacement windows in a variety of sizes and configurations (See Figure 1). The north elevation also features reconfigured entry points providing access into the main unit and a half unit to the rear of the building. Observed alterations to the building include reconfiguration of entry points on east and north elevations, replacement windows, a rear addition creating an L shape in plan, replacement doors, and re-roofing.

Figure 1. Main elevation of main house, 21811 South Figueroa, view to west, Image No. IMG_4617

Outbuilding 1: There is a small, recently manufactured shed located within the fenced in area located between the central block of the house and the rear L-shape. It is one story and features a front gable (Figure 2).

Animal Enclosures: There are multiple animal enclosures located within the fenced-in area located between the central block of the house and the rear L-shape. The enclosures are constructed of scrap lumber and feature makeshift roofs with low pitches.

Figure 2. 21811 South Figueroa, Outbuilding 1 and animal enclosures, view to southwest, Image No. IMG_4615

***B10. Significance** (continued)**:**

The property known today as 21811 South Figueroa Street does not appear on deed records until 1942 when John and Teresa Hill deeded the property to Alexander and Lenora Hamilton. Due to a lack of deeds and building permits, it was not possible to determine if John and Teresa Hill were the original owners of the land, or who constructed the modest one-story single-family residence on the site in 1929. Deeds for the property show that Alexander and Lenora Hamilton owned the property from 1942 until 1953, when Lenora gave up her ownership of the property following the death of her husband on January 19, 1953 (Deed Book 19805, Page 43). After Lenora's ownership of the property, it was granted to Antonio and Janet Argento in 1953 (Deed Book 47364, Page 71).

The Argentos owned the property from 1953–1977. During their ownership of the property, the Argentos, like other families in Carson, gave up a portion of their lot for the construction of the 110 Freeway that was happening between 1952 and 1970 (Document No. 2388). Following the death of Antonio Argento, Janet sold the property to Ronaldo and Evangelina Salamat in 1977 (Document No. 826922). The Salamats continued to own the property until 2009 (Document No. 20080229893). During their ownership of the property the Salamats made many transfers of the property between the two of them and through companies with which they had a management interest. One such company was Carson Summit Co. (Document No. 05-1703808). Following the Salamats ownership in 2009, the property was owned by a variety of companies

including Richard S. Held Enterprises Retirement Trust in 2009 (Document No. 20091281518), Sunset Holding Partners LLC. in 2015 (Document No. 20150284043), and the current owner Real Quest Holding LLC. in 2016 (Document No. 20161635958). From the time of Salamat's transfer of ownership in 2009, the property merged with the adjacent parcel, 21809 South Figueroa Street (APN 7343-020-010).

According to Los Angeles County Assessor records, the residence was constructed in 1929, but no original building permit could be found in the City of Carson building permit file. One major change to the building occurred circa 1955, when a half unit was added to the rear of the house, likely to function as a rental property. There were a series of documented alterations to the house and property over the years, including plumbing for the establishment of a laundry connection in the half unit in 1955 (Permit No. 9621), electrical work in 1955 to the half unit (Permit No. 0207), connection of sewer for the half unit in 1958 (Permit No. 8527), installation of a new water heater for the half unit in 1978 (Permit No. 0625), demolition of existing building on the site (Permit No. 6770A), and the addition of a single detached carport (Permit No. 2473A). There are also multiple observed alterations to the house, including enclosure of the front porch, application of stucco to the main elevation, reconfiguration of windows and doors, addition of a half unit to the rear of the house (circa 1955), reroofing, replacement doors, replacement windows, the addition of exterior lighting on main elevation, reconfiguration of the front yard for large concrete parking area, installation of window AC units, and replacement of sections of asbestos siding.

Archival research suggests that the property has functioned as a rental property since the 1950s, when the half unit was added to the rear of the house. As discussed above, the property was transferred through multiple owners in recent years and currently functions as a two-unit rental property for the current owner (Egbert 2017).

Historic aerial photographs via NETR were reviewed from the years 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. The earliest historic photograph of 21811 South Figueroa Street from 1952 indicates there are two buildings located on the parcel. The larger of the two buildings appears to face South Figueroa Street and appears to be L shape in plan. The remaining aerial photographs do not show significant changes to the subject property over the years (NETR 2017).

NRHP/CRHR Designation Criteria

The subject property is one of many multifamily residential units in the area, and no significant historical associations or patterns of development were identified. Residential development in the 1920s in Carson was tied largely to a small population spike caused by the establishment of oil companies and industrial companies in the area, such as Kellogg Garden Products. These industrial entities created much needed jobs in the area, which in turn created the need for residential development in Cason. This pattern of development was seen across Southern California with the introduction of industrialization into areas that were primarily agricultural throughout the nineteenth century. Due to a lack of significant associations with events important to history, the subject property does not appear eligible under NRHP/CRHR Criteria A/1.

Archival research also failed to indicate any associations with significant persons. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria B/2.

The Craftsman architecture movement in the United States is one of the most prevalent and widespread movements that appealed to almost all social classes. One of the most notable architectural developments arising from the Craftsman movement is the bungalow. The Arts

and Crafts movement began in the mid-late part of the nineteenth century in England as a reactionary movement against the excessiveness and ostentatious designs of the Victorian era. One of the key contributors to bringing the Craftsman movement to the United States was Gustav Stickley. His work and efforts helped fuel the development of the Craftsman movement and spread it across the United States.

The subject property is a heavily altered example of a vernacular bungalow-style residence constructed in 1929. Carson, like other parts of Los Angeles County, had a residential boom in the 1920s. To support the population spike, builders in Carson often turned to one of the most popular styles of the time, the Craftsman style bungalow.

Upon its arrival in California, the Craftsman movement produced a truly unique California architectural form – the California Bungalow. Developed by the work of Greene and Greene in Pasadena, the California Bungalow became one of the most widespread architectural movements in California. The adaptation of the Greene and Greene bungalow model for the masses contributed to its appeal and application to meet the needs of the housing booms happening across California following World War I. Builders and contractors began to mass-produce bungalow designs in pattern books and made them more available to the public.

Although the Greene and Greene bungalows represent the highest artistic and pure forms of the movement, it is in the modest, vernacular application in places like rural parts of Southern California that the mass production of the key characteristics of the style can be seen. However, the subject property lacks some of the most distinctive characteristics of vernacular bungalows in California, including a full or partial front porch with columns, multi-pane windows, and exposed rafters (McAlester 2013:566-578, Gottfried 2009: 26, 190-194, SurveyLA Context 14-15).

Archival building permit research failed to provide information regarding the original builder or architect, but it is not likely to be the work of a master. Finally, the property does not appear eligible as a contributing property to an historic district. For these reasons, the subject property does not appear eligible under NRHP/CRHR Criteria C/3.

The subject property is unlikely to yield any information important in prehistory or history and therefore does not appear eligible under NRHP/CRHR Criteria D/4.

Integrity Considerations

The property’s location has remained unchanged since its initial construction, always located on a small, suburban parcel and functioning as a residential building. When the subject property was originally developed, it was one of the earlier residences in a very rural part of what would become the City of Carson. The area continued to develop as a suburban neighborhood over the next few decades, thus altering the rural nature of the location. The location, setting, and feeling of the building were further compromised by the construction of the 110 Freeway. Completed in 1970, the 110 Freeway located on the west side of the property significantly altered the suburban nature of the neighborhood and eventually led to the construction of a sound wall at the edge of the property, thus compromising the integrity of setting, location, and feeling. In addition to the freeway construction, the outbuilding located to the west of the main house was converted into a living unit associated with Building 1. Furthermore, alterations to the house for a half-unit rental in the rear of the building greatly compromised the feeling of the building as a single-family residence. Building 1 has also lost much of its requisite integrity of design, materials, and workmanship due to significant alterations, including replacement of original windows and doors, reconfiguration of entrances, enclosure of front porch, and the addition of a half-unit at the rear of the building.

***B12. References:**

City of Carson Directories, various Years.

Deed Records for 21811 South Figueroa Street, 1947-2017. Available at the Los Angeles County Clerk's Office.

Egbert, B. 2017. Emails and meeting between B. Egbert (Property Owner) and S. Corder (Dudek).

NETR (Nationwide Environmental Title Research). 2017. Historical aerial photographs from 1952, 1963, 1972, 1980, 1994, 2002, 2003, 2004, 2005, 2009, 2010, and 2012. Accessed November 13, 2017. Historicaerials.com.

NPS (National Park Service). 1990. "How to Apply the National Register Criteria for Evaluation." Accessed November 21, 2017. https://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf.

APPENDIX C

Geotechnical Engineering Investigation

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental, and Civil Engineering

June 5, 2017

Ms. Chih Wang
3129 S. Hacienda Boulevard # 649
Hacienda Heights, California 91745

Subject: Report of Geotechnical Engineering Investigation, Proposed Residential Development, 21809-21811 Figueroa Street, APN: 7343-020-009 & 010, Carson California. QCI Project No.: 17-010-015GE

Dear Ms. Wang:

In accordance with your request, Quartech Consultants (QCI) is pleased to submit this Geotechnical Engineering Report for the subject site. The purpose of this report was to evaluate the subsurface conditions and provide recommendations for foundation designs and other relevant parameters of the proposed construction.

Based on the findings and observations during our investigation, the proposed construction of the subject site for the intended use is considered feasible from the geotechnical engineering viewpoints, provided that specific recommendations set forth herein are followed.

This opportunity to be of service is sincerely appreciated. If you have any questions pertaining to this report, please call the undersigned.

Respectfully submitted,
Cal Land Engineering, Inc. (CLE)
dba Quartech Consultants (QCI)

Jack C. Lee, GE 2153
Principal

Keith Au
Project Engineer

Abe Kazemzadeh

Dist: (4) Addressee

REPORT OF GEOTECHNICAL ENGINEERING INVESTIGATION

Proposed Multi-Family Residential Development

At

21809-21811 Figueroa Street
APN: 7343-020-009 & 010
Carson, California

Prepared by
QUARTECH CONSULTANTS (QCI)
Project No.: 17-010-015GE
June 5, 2017

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This report presents a summary of our preliminary geotechnical engineering investigation for the proposed construction at the subject site. The purposes of this investigation were to evaluate the subsurface conditions at the area of proposed construction and to provide recommendations pertinent to grading, foundation design and other relevant parameters of the development.

1.2 Scope of Services

Our scope of services included:

- Review of available soil engineering data of the area.
- Subsurface exploration consisting of logging and sampling of two 8-inch diameter hollow stem auger borings to a maximum depth of 31.5 feet below the existing grade at the subject site. The exploration was logged by a QCI engineer. Boring logs are presented in Appendix A.
- Laboratory testing of representative samples to establish engineering characteristics of the on-site soil. The laboratory test results are presented in Appendices A and B.
- Engineering analyses of the geotechnical data obtained from our background studies, field investigation, and laboratory testing.
- Preparation of this report presenting our findings, conclusions, and recommendations for the proposed construction.

1.3 Proposed Construction

The subject site would be used for residential development and associated improvements. The proposed buildings are anticipated to be four-story wood frame structures with concrete slab-on-grade. Column loads are unknown at this time, but are expected to be light to medium. Minor cut and fill grading operation is anticipated to reach the desired grades.

1.4 Site Location

The project site is located at the west side of Figueroa Street, a relatively short distance south from West Carson Street, in the City of Carson, California. The approximate location of the site is presented in the attached Site Location Map (Figure 1). The lot size is approximately 33,830 square feet (0.777 acres). The site is relatively flat and no major surface erosions were observed during our subsurface investigation.

2.0 SUBSURFACE EXPLORATION AND LABORATORY TESTING

2.1 Subsurface Exploration

Our subsurface exploration consisted of drilling two 8-inch diameter hollow stem auger borings to a maximum depth of 31.5 feet at the locations shown on the attached Site Plan, Figure 2. The excavation of the boring was supervised and logged by a QCI engineer. Relatively undisturbed and bulk samples were collected for laboratory testing. Boring logs are presented in Appendix A.

2.2 Laboratory Testing

Representative samples were tested for the following parameters: in-situ moisture content and density, consolidation, direct shear strength, Atterberg limits, expansion potential, percent fines, and corrosion potential. Results of our laboratory testing along with a summary of the testing procedures are presented in Appendix B. In-situ moisture and density test results are presented on the boring logs in Appendix A.

3.0 SUMMARY OF GEOTECHNICAL CONDITIONS

3.1 Soil Conditions

The onsite near surface soils consist predominantly sandy silt (ML). In general, these soils exist in the very stiff and moist condition. Underlying the surface soils, sandy silt (ML), fine-grained silty sand (SM),), and sandy clay (CL) were disclosed in the borings to the depths explored (31.5 feet below the existing ground surface). These soils exist in the dense to very dense, very stiff to hard and slightly moist to very moist conditions. The soils become denser as depth increases.

3.2 Groundwater

No groundwater or seepage was encountered in the test borings to the depths explored. Groundwater is not expected during the proposed construction.

4.0 SEISMICITY

4.1 Faulting

Based on our study, there are no known active faults crossing the property. The nearest known active regional fault is Newport Inglewood Connected Fault zones located 3.1 miles from the site.

4.2 Seismicity

The subject site is located in Southern California, which is a tectonically active area. The type and magnitude of seismic hazards affecting the site depend on the distance to causative faults, the intensity, and the magnitude of the seismic event. Table 1 indicates the distance of the fault zones and the associated maximum magnitude earthquake that can be produced by nearby seismic events. As indicated in Table 1, the Newport Inglewood fault zones are considered to have the most significant effect to the site from a design standpoint.

TABLE 1

Characteristics and Estimated Earthquakes for Regional Faults

Fault Name	Approximate Distance to Site (mile)	Maximum Magnitude Earthquake (Mw)
Newport Inglewood Conn. Alt. 1	3.1	7.5
Newport Inglewood Conn. Alt. 2	3.6	7.5
Palos Verdes	3.9	7.7
Puente Hills (Santa Fe Springs)	10.0	6.7
Puente Hills (LA)	10.1	7.0
Puente Hills (Coyote Hills)	14.6	6.9
Elysian Park (Upper)	16.6	6.7
Santa Monica Conn alt 2	17.2	7.4
Santa Monica Conn alt 1	17.6	7.3
Elsinore	17.8	7.8
Hollywood	18.8	6.7

Reference: 2008 National Seismic Hazard Maps - Source Parameters

4.3 Estimated Earthquake Ground Motions

In order to estimate the seismic ground motions at the subject site, QCI has utilized the seismic hazard map published by California Geological Survey. According to this report, the peak ground Alluvium acceleration at the subject site for a 2% and 10% probability of exceedance in 50 years is about 0.984g and 0.506g respectively (NSHM 2014, 2008 Deaggregation of Seismic Hazards). Peak ground acceleration (PGA), corresponding to USGS Design Map Summary Report, 2015 NEHRP Provisions, site class D(default) is 0.911g.

5.0 CONCLUSIONS

Based on our subsurface investigation, it is our opinion that the proposed construction is feasible from a geotechnical standpoint, provided the recommendations contained herein are incorporated in the design and construction. The following is a summary of the geotechnical design and construction factors that may affect the development of the site:

5.1 Seismicity

Based on our studies on seismicity, there are no known active faults crossing the property. However, the site is located in a seismically active region and is subject to seismically induced ground shaking from nearby and distant faults, which is a characteristic of all Southern California.

5.2 Seismic Induced Hazards

Based on our review of the "Seismic Hazard Zones, Torrance Quadrangle" by California Department of Conservation, Division of Mines and Geology, it is concluded that the site is not located in the mapped potential liquefaction areas.

5.3 Excavatability

Based on our subsurface investigation, excavation of the subsurface materials should be accomplished with conventional earthwork equipment.

5.4 Surficial Soil Removal and Recompaction

Based on our investigation, it is concluded that the existing surficial soils may not be suitable for structure support as they presently exist and will require remedial grading as discussed herein.

5.5 Groundwater

Groundwater was not encountered during our field exploration. Groundwater is not anticipated to be encountered during the near surface construction.

6.0 RECOMMENDATIONS

Based on the subsurface conditions exposed during field investigation and laboratory testing program, it is recommended that the following recommendations be incorporated in the design and construction phases of the project.

6.1 Grading

6.1.1 Site Preparation

Prior to initiating grading operations, any existing vegetation, trash, debris, over-sized materials (greater than 8 inches), and other deleterious materials within construction areas should be removed from the subject site.

6.1.2 Surficial Soil Removals

Based on our field exploration and laboratory data obtained to date, it is recommended that the existing surficial soils be removed to a minimum depth of 5 feet below the existing grade or two feet below the bottom of the footing, whichever is deeper. The recommended removal should be extended at least 5 feet beyond building lines. The existing near surface soils should also be removed to a depth of about 12-inches within the proposed driveway and concrete flatwork areas. Locally deeper removals may be necessary to expose competent natural ground. The actual removal depths should be determined in the field as conditions are exposed. Visual inspection and/or testing may be used to define removal requirements.

6.1.3 Treatment of Removal Bottoms

Soils exposed within areas approved for fill placement should be scarified to a depth of 6 to 10 inches, conditioned to near optimum moisture content, then compacted in-place to minimum project standards.

6.1.4 Structural Backfill

The onsite soils may be used as compacted fill, provided they are free of organic materials and debris. Fills should be placed in relatively thin lifts (6 to 8 inches), brought to near optimum moisture content, then compacted to at least 90 percent relative compaction based on laboratory standard ASTM D-1557-12.

6.2 Shallow Foundation Design

6.2.1 Bearing Value

An allowable bearing value of 2000 pounds per square foot (psf) may be used for design of continuous and pad footings with a minimum of 12 and 24 inches in width, respectively. All footings should be a minimum of 24 inches deep. This value may be increased by one third (1/3) when considering short duration seismic or wind loads.

6.2.2 Settlement

Settlement of the footings placed as recommended, and subject to no more than allowable loads is not anticipated to exceed 3/4 inch. Differential settlement between adjacent columns is not anticipated to exceed 1/2 inch.

6.2.3 Lateral Pressures

The active earth pressure to be utilized for cantilever retaining wall designs may be computed as an equivalent fluid having a density of 40 pounds per cubic foot when the slope of the backfill behind the wall is level. Where the slope of the backfill is 2:1, an equivalent fluid pressure of 60 pcf may be used.

It is recommended that active earthquake earth pressure distribution on cantilever retaining walls retaining more than 6 feet of soils when the slope of the backfill behind the wall is level may be computed as an inverted right triangle with 29H psf at the base. Resultant seismic earth force may be applied at approximately 0.6xH from the top of the footing. H should be measured from top of footing to the top of wall. The earthquake-induced pressure should be added to the static active earth pressure. Design of walls less than 6 feet in height may neglect the additional seismic pressure.

Passive earth pressure may be computed as an equivalent fluid pressure of 300 pcf, with a maximum earth pressure of 2000 psf. An allowable coefficient of friction between soil and concrete of 0.30 may be used with the dead load forces. When combining passive pressure and frictional resistance, the passive pressure component should be reduced by one third (1/3).

6.3 Foundation Construction

It is anticipated that the entire structure will be underlain by onsite soils of very low expansion potential. All footings should be founded at a minimum depth of 24 inches below the lowest adjacent ground surface. All continuous footings should have at least two No. 4 reinforcing bar placed both at the top and two No. 4 reinforcing bar placed at the bottom of the footings.

6.5 Concrete Slab

Concrete slabs should be a minimum of 4 inches thick and reinforced with a minimum of No. 3 reinforcing bar spaced 18-inch each way or it's equivalent. All slab reinforcement should be supported to ensure proper positioning during placement of concrete.

In order to comply with the requirements of the 2016 CalGreen Section 4.505.2.1 within the moisture sensitive concrete slab areas, a minimum of 4-inch thick base of ½ inch or larger clean aggregate should be provided with a vapor barrier in direct contact with concrete. A 10-mil Polyethylene vapor retarder, with joints lapped not less than 6 inches, should be placed above the aggregate and in direct contact with the concrete slab.

6.6 Temporary Excavation and Backfill

All trench excavations should conform to CAL-OSHA and local safety codes. All utilities trench backfill should be brought to near optimum moisture content and then compacted to obtain a minimum relative compaction of 90 percent of ASTM D-1557-12. All temporary excavations should be observed by a field engineer of this office so as to evaluate the suitability of the excavation to the exposed soil conditions.

7.0 INSPECTION

As a necessary requisite to the use of this report, the following inspection is recommended:

- Temporary excavations.
- Removal of surficial and unsuitable soils.
- Backfill placement and compaction.
- Utility trench backfill.

The geotechnical engineer should be notified at least 1 day in advance of the start of construction. A joint meeting between the client, the contractor, and the geotechnical engineer is recommended prior to the start of construction to discuss specific procedures and scheduling.

8.0 SEISMIC DESIGN

Based on our studies on seismicity, there are no known active faults crossing the property. However, the subject site is located in southern California, which is a tectonically active area. Based on 2015 NEHRP Provisions, the following seismic related values may be used:

Seismic Parameters (Latitude: 33.8301, Longitude: -118.286402)	Site Class "D"
Mapped 0.2 Sec Period Spectral Acceleration, **S_S**	1.734 g
Mapped 1.0 Sec Period Spectral Acceleration, **S_1**	0.626g
Site Coefficient for Site Class "D", **F_a**	1.2
Site Coefficient for Site Class "D", **F_v**	1.7
Maximum Considered Earthquake Spectral Response Acceleration Parameter at 0.2 Second, **S_{MS}**	2.080g
Maximum Considered Earthquake Spectral Response Acceleration Parameter at 1.0 Second, **S_{M1}**	1.063g
Design Spectral Response Acceleration Parameters for 0.2 sec, **S_{DS}**	1.387g
Design Spectral Response Acceleration Parameters for 1.0 Sec, **S_{D1}**	0.709g

The Project Structural Engineer should be aware of the information provided above to determine if any additional structural strengthening is warranted.

9.0 CORROSION POTENTIAL

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during QCI's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. The testing results are presented in Appendix B.

According to 2016 CBC and ACI 318-11, a "negligible" exposure to sulfate can be expected for concrete placed in contact with the onsite soils. Therefore, Type II cement or its equivalent may be used for this project. Based on the resistivity test results, it is estimated that the subsurface soils are corrosive to buried metal pipe. It is recommended that any underground steel utilities be blasted and given protective coating. Should additional protective measures be warranted, a corrosion specialist should be consulted.

10.0 REMARKS

The conclusions and recommendations contained herein are based on the findings and observations at the exploratory locations. However, soil materials may vary in characteristics between locations of the exploratory locations. If conditions are encountered during construction, which appear to be different from those disclosed by the exploratory work, this office should be notified so as to recommend the need for modifications.

This report has been prepared in accordance with generally accepted professional engineering principles and practice. No warranty is expressed or implied. This report is subject to review by controlling public agencies having jurisdiction.

APPENDIX A
FIELD INVESTIGATION

Subsurface conditions were explored by drilling two 8-inch diameter hollow stem auger borings to a maximum depth of 31.5 feet below the existing grade at the subject site at approximate locations shown on the enclosed Site Plan, Figure 2.

The drilling of the test borings was supervised by a QCI engineer, who continuously logged the borings and visually classified the soils in accordance with the Unified Soil Classification System. Ring samples were taken at frequent intervals. These samples were obtained by driving a sampler with successive blows of 140-pound hammer dropping from a height of 30 inches.

Representative undisturbed samples of the subsurface soils were retained in a series of brass rings, each having an inside diameter of 2.42 inches and a height of 1.00 inch. All ring samples were transported to our laboratory. Bulk surface soil samples were also collected for additional classification and testing.

APPENDIX B
LABORATORY TESTING

During the subsurface exploration, QCI personnel collected relatively undisturbed ring samples and bulk samples. The following tests were performed on selected soil samples:

Moisture-Density

The moisture content and dry unit weight were determined for each relatively undisturbed soil sample obtained in the test borings in accordance with ASTM D2937 standard. The results of these tests are shown on the boring logs in Appendix A.

Shear Tests

Shear tests were performed in a direct shear machine of strain-control type in accordance with ASTM D3080 standard. The rate of deformation was 0.010 inch per minute. Selected samples were sheared under varying confining loads in order to determine the Coulomb shear strength parameters: internal friction angle and cohesion. The shear test results are presented in the attached plates.

Consolidation Tests

Consolidation tests were performed on selected undisturbed soil samples in accordance with ASTM D2435 standard. The consolidation apparatus is designed for a one-inch high soil filled brass ring. Loads are applied in several increments in a geometric progression and the resulting deformations are recorded at selected time intervals. Porous stones are placed in contact with the top and bottom of each specimen to permit addition and release of pore fluid. The samples were inundated with water at a load of two kilo-pounds (kips) per square foot, and the test results are shown on the attached Figures.

Expansion Index

Laboratory Expansion Index test was conducted on the existing onsite near surface materials sampled during QCI's field investigation to aid in evaluation of soil expansion potential. The test is performed in accordance with ASTM D-4829. The testing result is presented below:

Sample Location	Expansion Index	Expansion Potential
B-1 @ 0-5'	12	Very Low

Corrosion Potential

Chemical laboratory tests were conducted on the existing onsite near surface materials sampled during QCI's field investigation to aid in evaluation of soil corrosion potential and the attack on concrete by sulfate soils. These tests are performed in accordance with California Test Method 417, 422, 532, and 643. The testing results are presented below:

Sample Location	pH	Chloride (ppm)	Sulfate (% by weight)	Min. Resistivity (ohm-cm)
B-1 @ 0'-3'	7.71	54	0.0620	2,200

Percent Passing #200 Sieve

Percent of soil passing #200 sieve was determined for selected soil samples in accordance with ASTM D1140 standard. The test results are presented in the following table:

Sample Location	% Passing #200
B-1 @ 0-3'	65.5
B-1 @ 5'	71.3
B-1 @ 10'	68.1
B-1 @ 15'	44.1
B-1 @ 25'	61.3
B-1 @ 30'	88.6

Atterberg Limits

Laboratory Atterberg Limits tests were conducted on the existing onsite materials sampled during QCI's field investigation to aid in evaluation of soil liquefaction potential. These tests are performed in accordance with ASTM D4318. The testing results are presented below:

Sample Location	USCS Class. ASTM D2488	Liquid Limit %ASTM D4318	Plastic Limit %ASTM D4318	Plasticity Index ASTM D4318
B-1 @ 5'	CL	33	17	16
B-1 @ 30'	CL	46	26	20

APPENDIX D

Hydraulic and Hydrology Report

Hydraulic & Hydrology Report

For

Real Quest Holding Llc.

3129 S Hacienda Blvd., #649

Hacienda Heights, CA 91745

Project Location:

21809, 21811 Figueroa St.,

Carson, CA 90745

Date: 08-08-2017

Prepared By

Apple Engineering Group

9080 Telstar Ave., Suite 309

El Monte, CA 91731

Tel. (626) 552-8198

Web: appleengineering.net

Email: info@appleengineering.net

Apple Engineering Project Number: P17052

This calculation is prepared under the direction of

SHEET INDEX

PROJECT DESCRIPTION:

Project Location: 21809, 21811 Figueroa St., Carson, CA 90745

APN: 7343-020-009, 7343-020-010

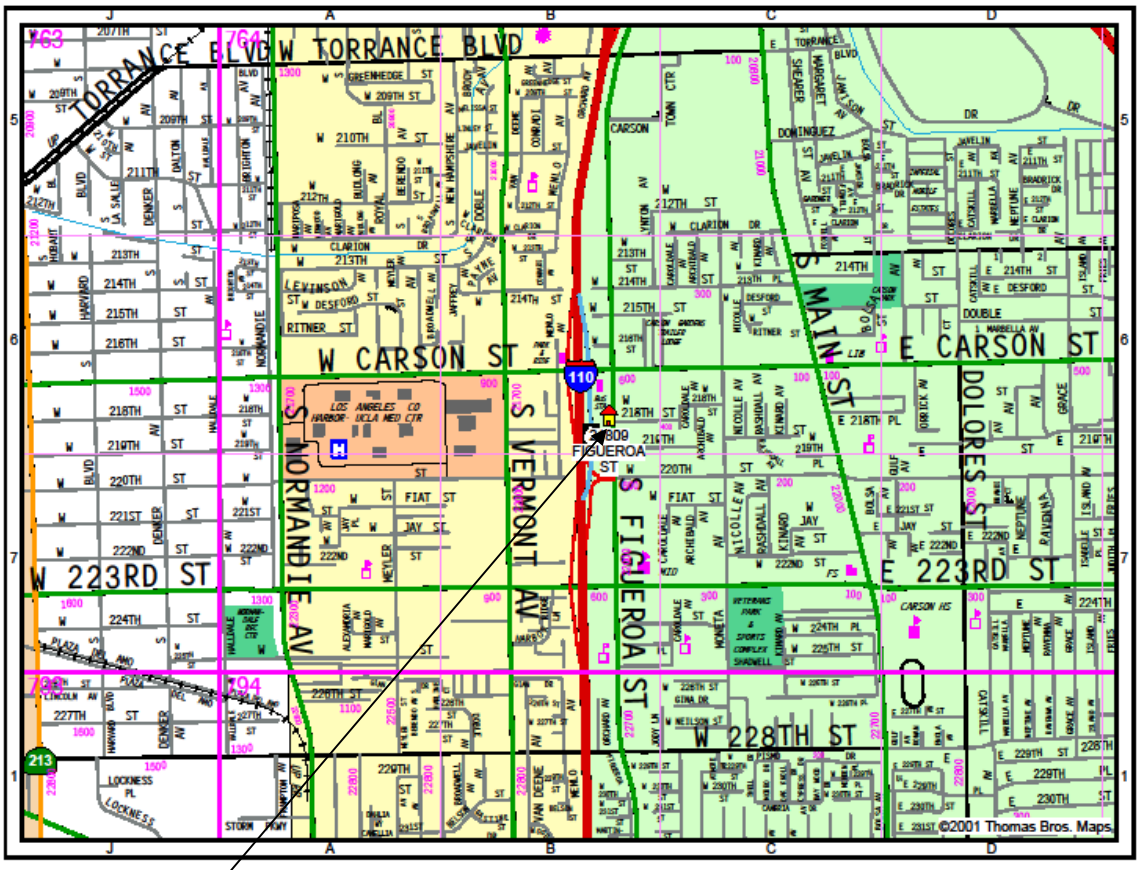
See vicinity map on next page.

The property's existing zoning is CARM18U&D. Proposed zoning will remain the same.

The existing storm water drainage pattern is from the northwest corner of the property to the southeast corner of the property. The proposed storm water drainage will incorporate catch basins and pvc drainage pipes to drain from the northwest corner of property to the southeast corner of property and onto the street through proposed parkway drain.

The hydrology area calculations are below:

	Area	Impervious Area		Pervious Area	
	SF	SF	%	SF	%
Pre Development	33,830	12,294	36%	21,536	64%
Post Development	33,830	30,949	91%	2,881	9%



PROJECT SITE

VICINITY MAP

TG-764-B6, NTS

N

Peak Flow Hydrologic Analysis

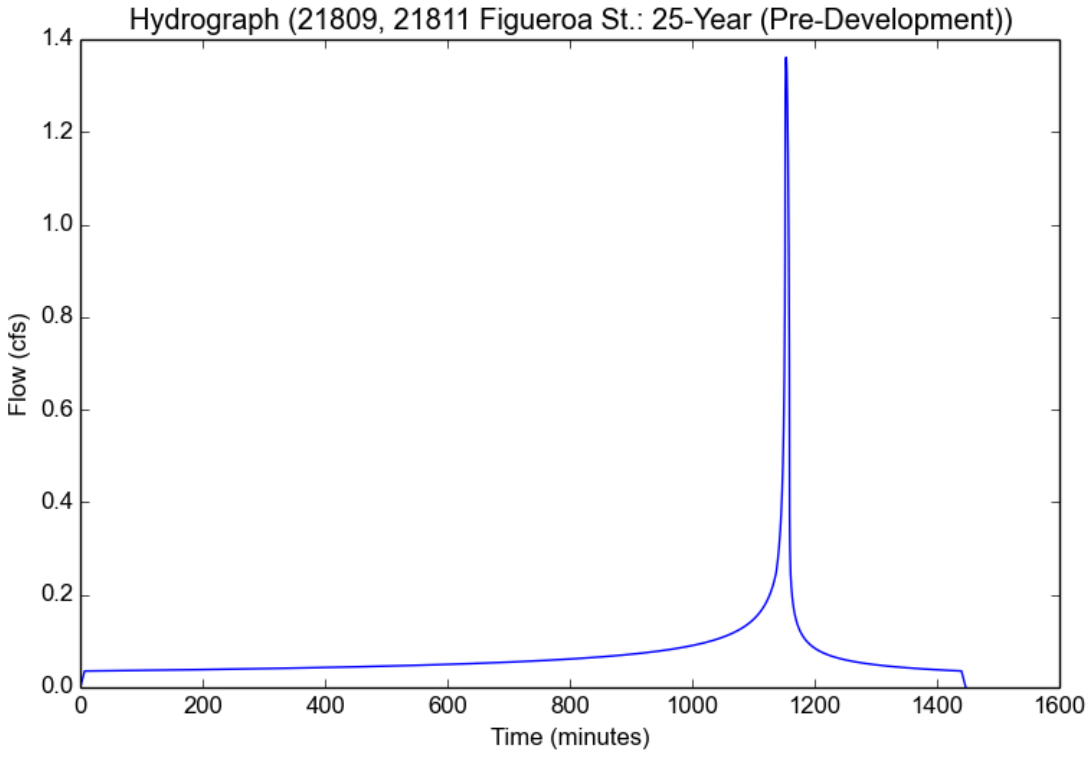
File location: //APPLESERVER/Company/Apple Engineering/P-Projects/2017/P17052- 21809-21811 Figueroa St., Carson/2. Design/500. Strom Water -
Version: HydroCalc 1.0.2

Input Parameters

Project Name	21809, 21811 Figueroa St.
Subarea ID	25-Year (Pre-Development)
Area (ac)	0.78
Flow Path Length (ft)	272.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.01
Percent Impervious	0.36
Soil Type	10
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2768
Peak Intensity (in/hr)	2.6878
Undeveloped Runoff Coefficient (Cu)	0.5082
Developed Runoff Coefficient (Cd)	0.6493
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.3611
Burned Peak Flow Rate (cfs)	1.3611
24-Hr Clear Runoff Volume (ac-ft)	0.1376
24-Hr Clear Runoff Volume (cu-ft)	5994.5321



Peak Flow Hydrologic Analysis

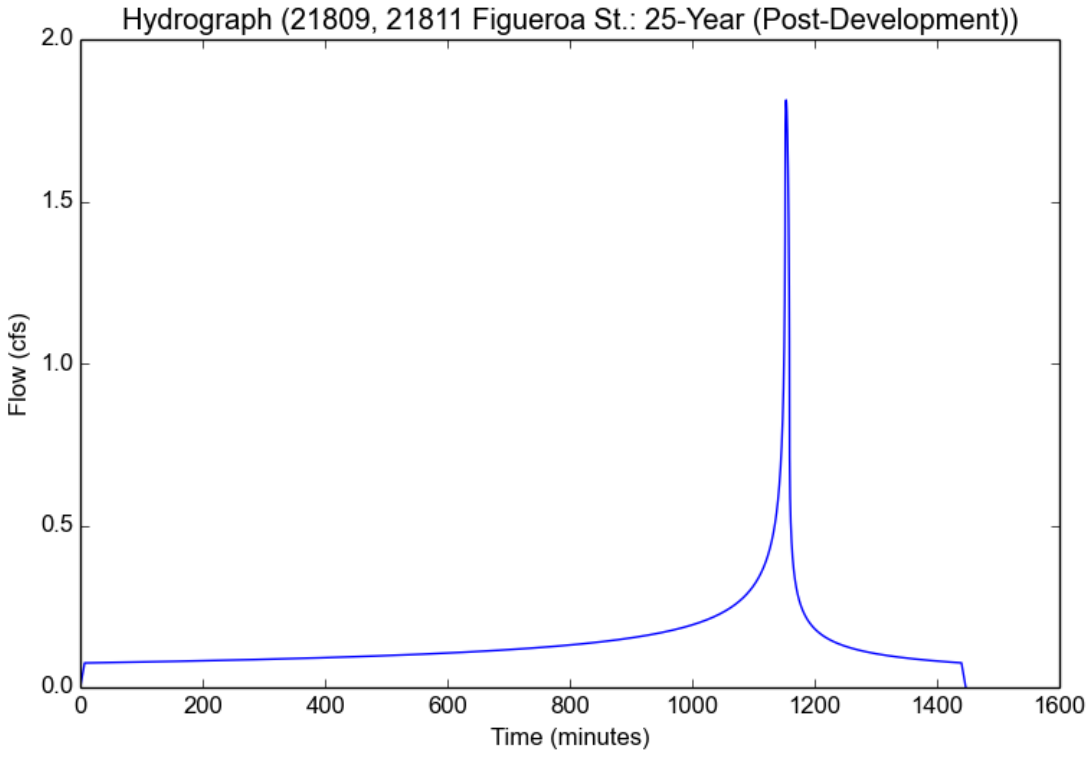
File location: //APPLESERVER/Company/Apple Engineering/P-Projects/2017/P17052- 21809-21811 Figueroa St., Carson/2. Design/500. Strom Water -
Version: HydroCalc 1.0.2

Input Parameters

Project Name	21809, 21811 Figueroa St.
Subarea ID	25-Year (Post-Development)
Area (ac)	0.78
Flow Path Length (ft)	354.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.01
Percent Impervious	0.91
Soil Type	10
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.2768
Peak Intensity (in/hr)	2.6878
Undeveloped Runoff Coefficient (Cu)	0.5082
Developed Runoff Coefficient (Cd)	0.8647
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	1.8129
Burned Peak Flow Rate (cfs)	1.8129
24-Hr Clear Runoff Volume (ac-ft)	0.2824
24-Hr Clear Runoff Volume (cu-ft)	12303.1649



Peak Flow Hydrologic Analysis

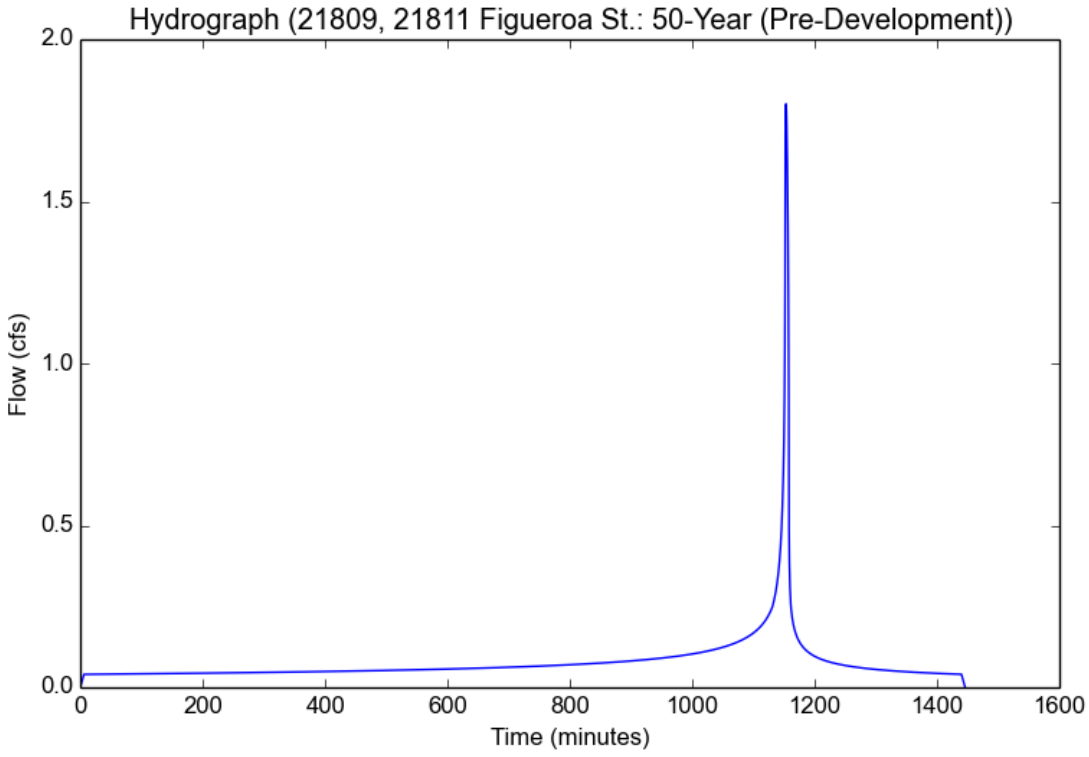
File location: //APPLESERVER/Company/Apple Engineering/P-Projects/2017/P17052- 21809-21811 Figueroa St., Carson/2. Design/500. Strom Water -
Version: HydroCalc 1.0.2

Input Parameters

Project Name	21809, 21811 Figueroa St.
Subarea ID	50-Year (Pre-Development)
Area (ac)	0.78
Flow Path Length (ft)	272.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.01
Percent Impervious	0.36
Soil Type	10
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.01
Peak Intensity (in/hr)	3.2913
Undeveloped Runoff Coefficient (Cu)	0.5898
Developed Runoff Coefficient (Cd)	0.7015
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.8008
Burned Peak Flow Rate (cfs)	1.8008
24-Hr Clear Runoff Volume (ac-ft)	0.1583
24-Hr Clear Runoff Volume (cu-ft)	6893.8235



Peak Flow Hydrologic Analysis

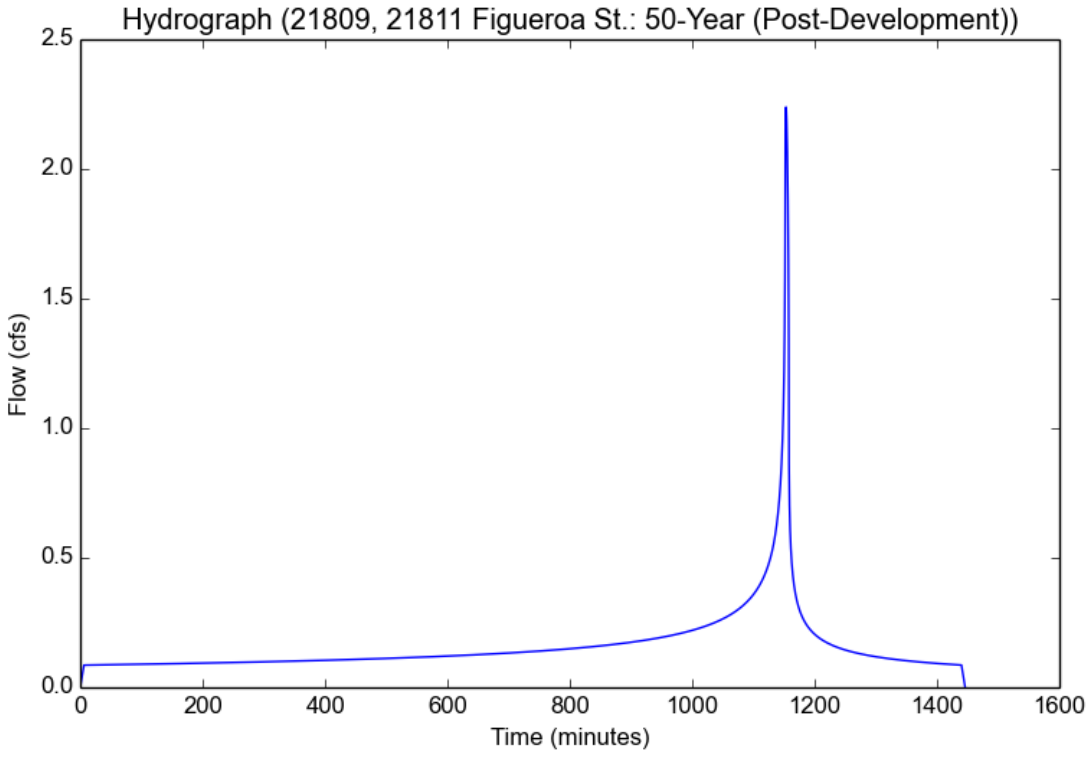
File location: //APPLESERVER/Company/Apple Engineering/P-Projects/2017/P17052- 21809-21811 Figueroa St., Carson/2. Design/500. Strom Water -
Version: HydroCalc 1.0.2

Input Parameters

Project Name	21809, 21811 Figueroa St.
Subarea ID	50-Year (Post-Development)
Area (ac)	0.78
Flow Path Length (ft)	354.0
Flow Path Slope (vft/hft)	0.005
50-yr Rainfall Depth (in)	6.01
Percent Impervious	0.91
Soil Type	10
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.01
Peak Intensity (in/hr)	3.2913
Undeveloped Runoff Coefficient (Cu)	0.5898
Developed Runoff Coefficient (Cd)	0.8721
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	2.2388
Burned Peak Flow Rate (cfs)	2.2388
24-Hr Clear Runoff Volume (ac-ft)	0.3219
24-Hr Clear Runoff Volume (cu-ft)	14022.043



Peak Flow Hydrologic Analysis

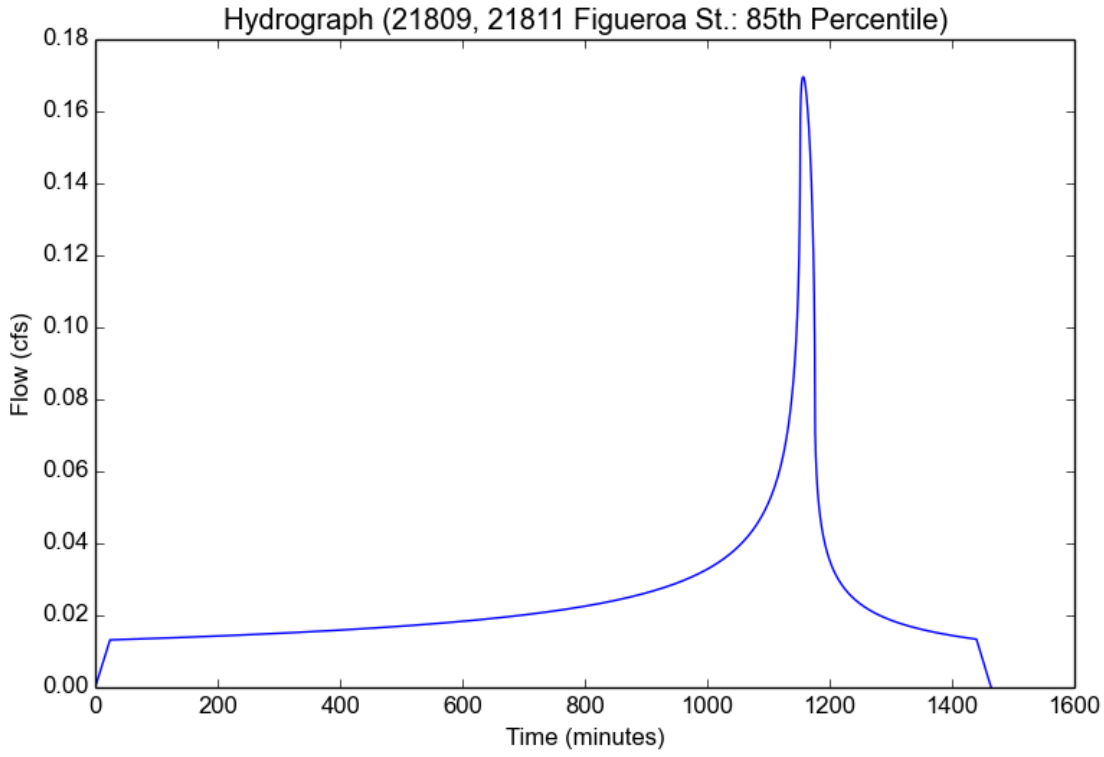
File location: //APPLESERVER/Company/Apple Engineering/P-Projects/2017/P17052- 21809-21811 Figueroa St., Carson/2. Design/500. Strom Water -
Version: HydroCalc 1.0.2

Input Parameters

Project Name	21809, 21811 Figueroa St.
Subarea ID	85th Percentile
Area (ac)	0.78
Flow Path Length (ft)	354.0
Flow Path Slope (vft/hft)	0.005
85th Percentile Rainfall Depth (in)	0.92
Percent Impervious	0.91
Soil Type	10
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

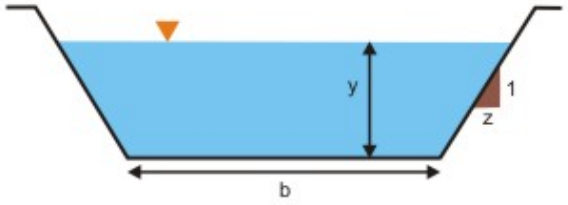
Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	0.92
Peak Intensity (in/hr)	0.2626
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.828
Time of Concentration (min)	24.0
Clear Peak Flow Rate (cfs)	0.1696
Burned Peak Flow Rate (cfs)	0.1696
24-Hr Clear Runoff Volume (ac-ft)	0.0491
24-Hr Clear Runoff Volume (cu-ft)	2139.0377



Calculations for Parkway Drain

onlinechannel15.php: Discharge in a prismatic channel using the Manning equation



Definition sketch for a prismatic channel

Formulas:

$$P = b + 2y(1 + z^2)^{1/2}$$

$$T = b + 2zy$$

$$A = y(b + zy)$$

$$R = A/P$$

$$D = A/T$$

$$Q = (C/n)\ AR^{2/3}S^{1/2}$$

$$V = Q/A$$

$$F = V/(gD)^{1/2}$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Bottom width b: 1.25 ft

Flow depth y: 0.33 ft

Side slope z: 0

Manning's n: 0.013

Bottom slope S: 0.02

INTERMEDIATE CALCS:

Units selected: U.S. Customary

Gravitational acceleration g: 32.17 ft s^{-2}

Constant C: 1.486

Wetted perimeter P: 1.91 ft

Top width T: 1.25 ft

Flow area A: 0.412 ft^2

Hydraulic radius R: 0.215 ft

Hydraulic depth D: 0.33 ft

OUTPUT:

Discharge Q: 2.400 cfs

Flow velocity V: 5.819 fps

Froude number F: 1.785

Q_{50} = 2.238 cfs

Q_{design} = 2.400 cfs

2.400 cfs > 2.238 cfs

Conclusion: a 15"x4" Parkway Drain is sufficient to handle the on-site stormwater discharge

Frequency	Multiplication Factor
2-yr	0.387
5-yr	0.584
10-yr	0.714
25-yr	0.878
50-yr	1.000
100-yr	1.122
500-yr	1.402

Table 5.3.1
Rainfall Frequency Multiplication Factors

Appendix B contains isohyetal maps for the 50-year, 24-hour rainfall depth. The isohyetal contour lines are spaced at intervals of two-tenths of an inch. The spatial rainfall distributions for the county design storms were converted to grid data for use with Geographic Information System (GIS) compatible hydrologic models.

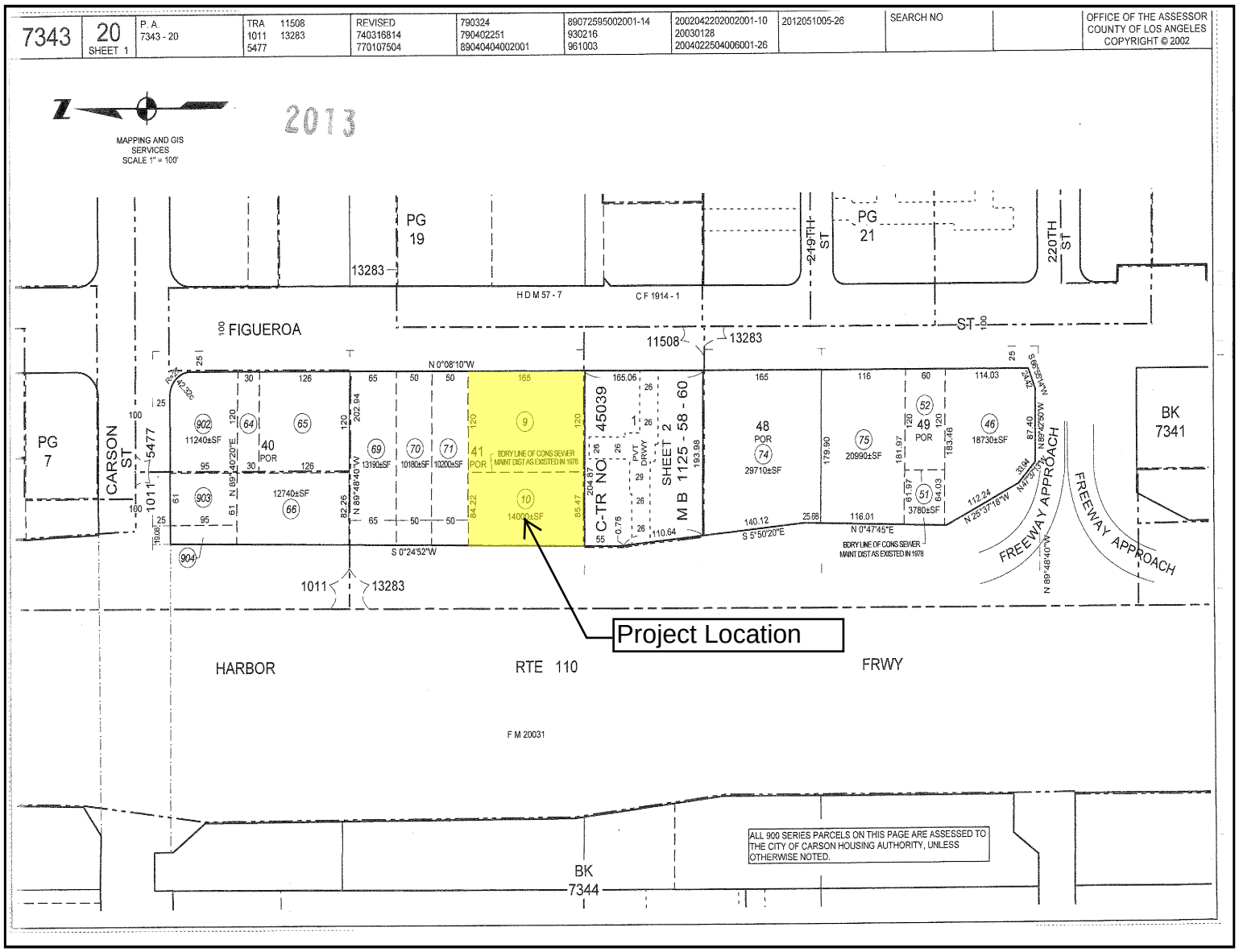
5.4 DESIGN STORM

The three components of the design storm include the IDF equation, the unit hyetograph curve, and the isohyets. These components are used to define the design storm for a particular location and frequency. As an example, consider the 25-year design storm for the Palmer Canyon watershed in Figure 5.4.1. Subarea 1A of this watershed, shown in Figure 5.4.2, will be used for the sample calculations.

1. Compute the area between successive isohyetal lines and multiply by the average of the isohyet values. Table 5.4.1 shows the areas between isohyets for Subarea 1A.

2. The sum of these precipitation-area values divided by the total subarea area provides the area weighted average rainfall depth. The average rainfall should be calculated to the nearest two-tenths of an inch. Table 5.4.1 contains the calculations for the isohyetal values in this subarea.

It may be noted that for small subareas, the isohyet nearest the centroid of the subarea usually equals the design depth. Selecting the isohyets nearest the subarea centroid is an acceptable method for determining the design rainfall for subareas of approximately 40 acres.



Department of Public Works
dpw.lacounty.gov

search our site..

Hydrology Map

A GIS viewer application to view the data for the hydrology manual.

LAYERS

- [x] 50yr Two Tenths (Rainfall)
- [ ] DPA Zones
- [x] Soils 2004
- [x] Final 85th Percentile, 24-hr Rainfall
- [ ] Final 95th Percentile, 24-hr Rainfall
- [ ] 1-year, 1-hour Rainfall Intensity

SEARCH

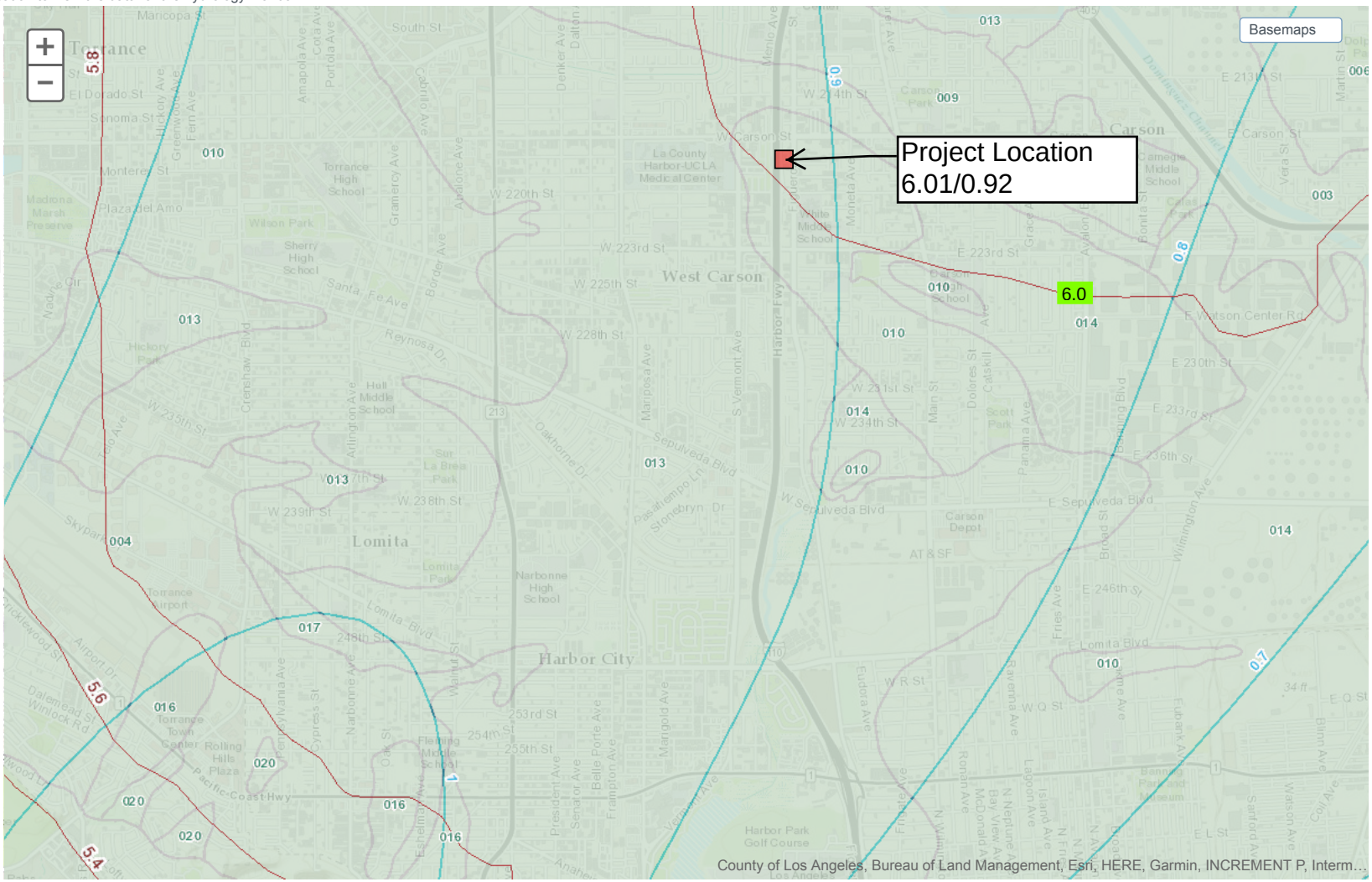
Enter Address, Cross Street, or Parcel No.:
(ex: 900 S. Fremont Ave., Fremont@Valley, 5342005904)

21809 figueroa st

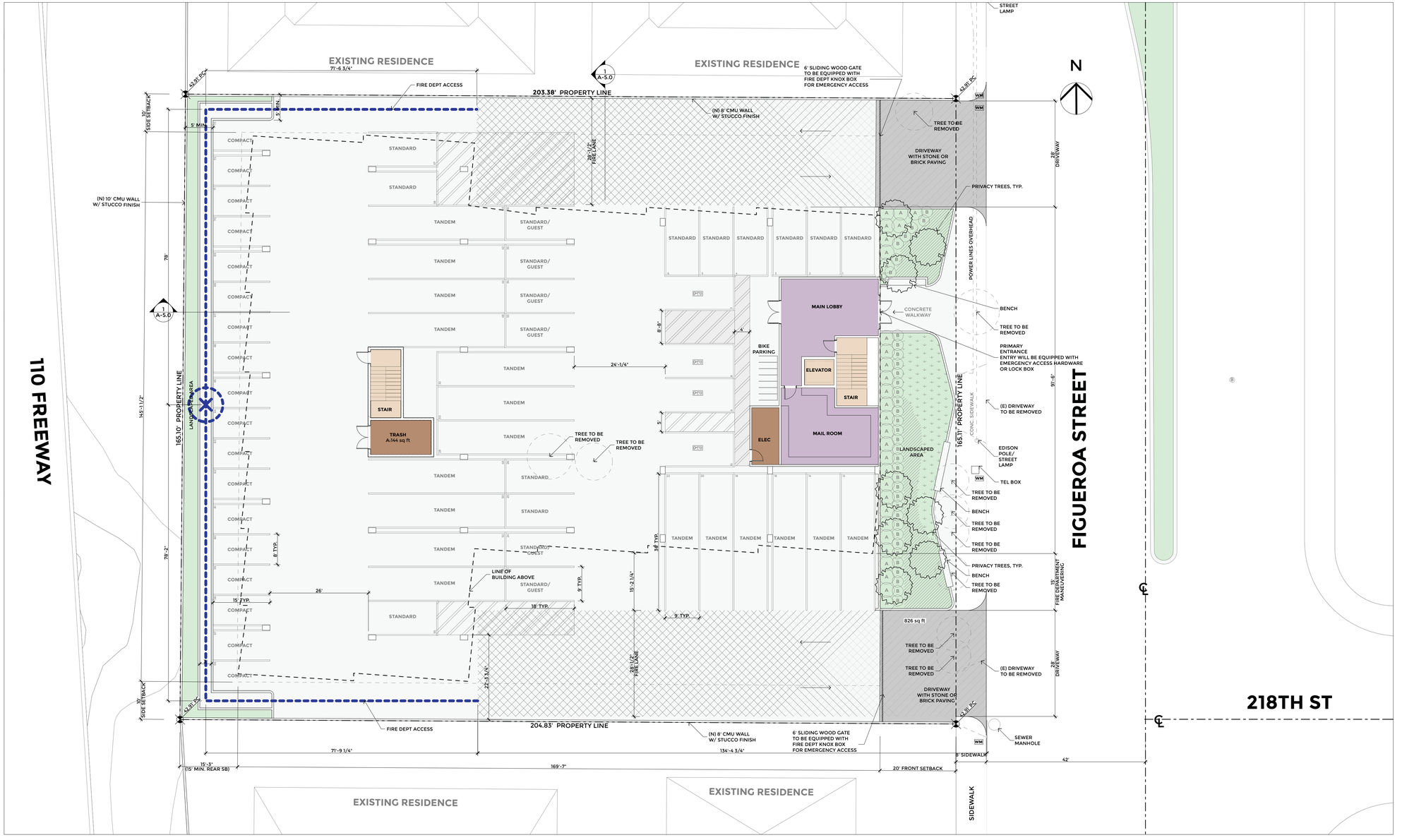
Search

Address Search Results:

21809 figueroa st



Map Tips



UNIT BREAKDOWN

UNIT #	PLAN TYPE	# OF BEDROOMS	AREA (SF)	OPEN SPACE (SF)
1	A	2	1,081	150
2	B	2	855	150
3	C	3	1,617	150
4	C	3	1,770	153
5	D	3	1,555	173
6	E	2	1,094	151
7	E	2	1,120	150
8	F	3	1,916	154
9	G	3	1,678	157
10	G	3	1,620	161
11	A	2	1,098	150
12	B	2	855	150
13	L	2	1,024	150
14	L	2	1,021	150
15	H	2	1,203	177
16	I	2	1,494	302
17	J	3	1,714	486
18	K	3	1,757	294
19	H	2	1,152	187
20	L	2	1,018	150
21	L	2	1,017	150
22	A	2	1,098	150
23	B	2	855	150
24	L	2	1,024	150
25	L	2	1,021	150
26	H	2	1,203	177
27	M	2	1,340	155
28	N	3	1,559	155
29	O	3	1,593	150
30	H	2	1,152	187
31	L	2	1,018	150
32	L	2	1,017	150
TOTAL AREA:			40,539 SF	5,619 SF

AREA BREAKDOWNS

NET SIZE OF LOT:	33,703 SF
GROSS FLOOR AREA:	44,210 SF
NET FLOOR AREA:	51,120 SF
PROPOSED DENSITY:	42 UNITS PER ACRE
LOT COVERAGE RATIO:	56.50%
FLOOR AREA RATIO:	151.67%
LANDSCAPE COVERAGE RATIO:	19.12%

PARKING BREAKDOWN

NUMBER OF UNITS WITH 2 BEDROOMS:	22
NUMBER OF UNITS WITH 3 BEDROOMS:	10
TOTAL UNITS:	32
PARKING REQUIREMENT	
NUMBER OF SPACES PER UNIT:	2 PER UNIT
NUMBER OF GUEST SPACES (1/EVERY 4 UNITS):	8
RESIDENCE PARKING:	
NUMBER OF UNITS:	32
PARKING REQUIRED	64
GUEST PARKING:	
NUMBER OF GUEST SPACES (1/EVERY 4 UNITS):	8
PARKING REQUIRED:	8
TOTAL PARKING REQUIRED:	72
TOTAL PARKING PROVIDED:	73

SITE PLAN SHALL MEET ALL ENGINEERING AND NPDES REQUIREMENTS

SITE PLAN +0.0' 1
SCALE: 3/32" = 1'-0"

LANEY LA
LIFESTYLE + ARCHITECTURE

PROJECT NAME
BIRCH

PROJECT NUMBER
17065

CLIENT
REAL QUEST HOLDING, LLC
MR. MICHAEL WANG C/O CHIH WANG
3129 S HACIENDA BLVD. #649
HACIENDA HEIGHTS, CA 91745
(626) 271-5322

PROJECT ADDRESS
21809-21811 FIGUEROA STREET
CARSON, CA 90745

ARCHITECT
ANTHONY LANEY AIA
LANEY LA, INC.
13110 HAWTHORNE BLVD. UNIT A
HAWTHORNE CA 90250
(310) 498-2455
ANTHONY@LANEY.LA

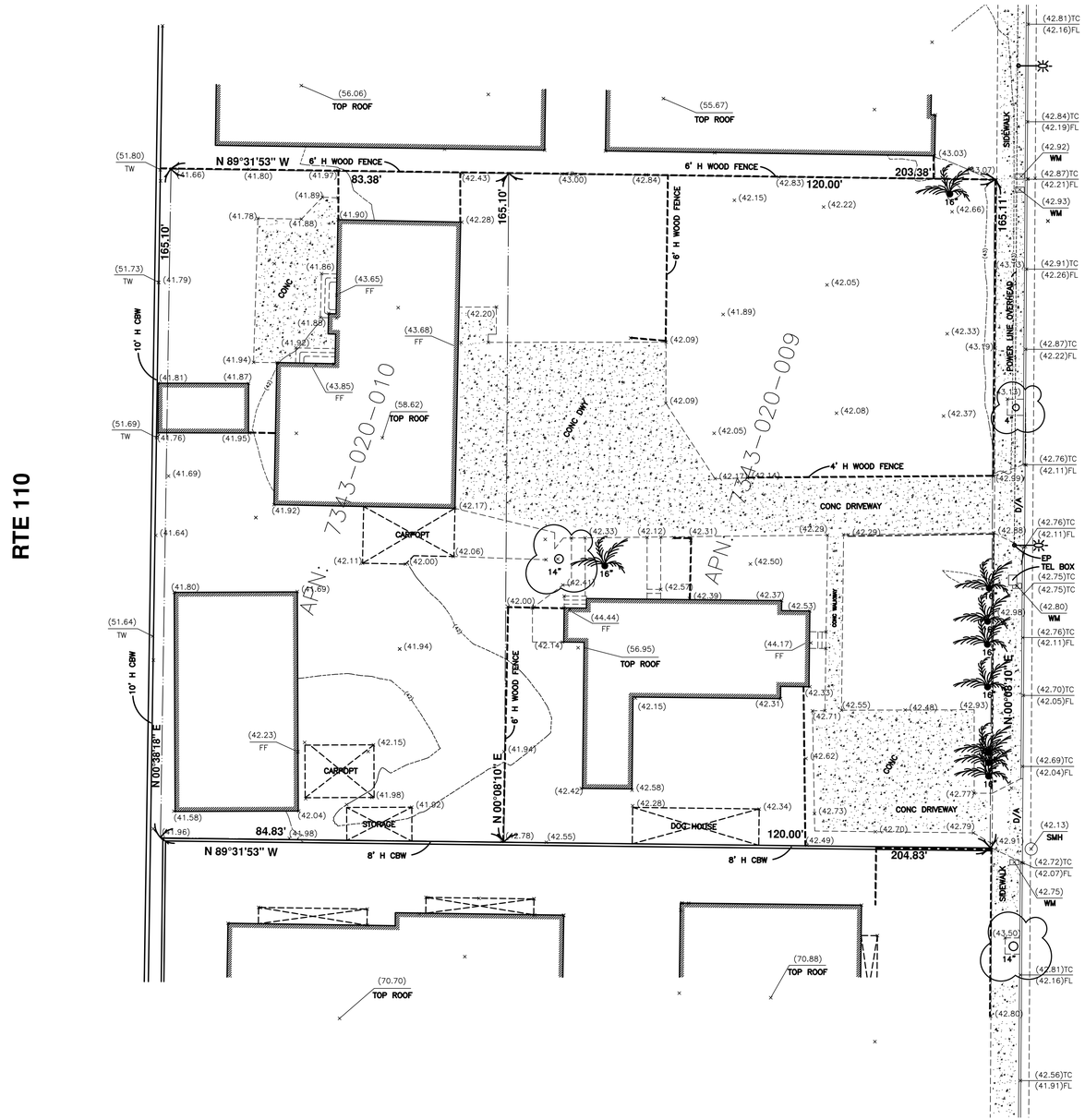
MARK	DATE	DESCRIPTION
1	06/05/17	DEVELOPMENT APPLICATION SUBMISSION

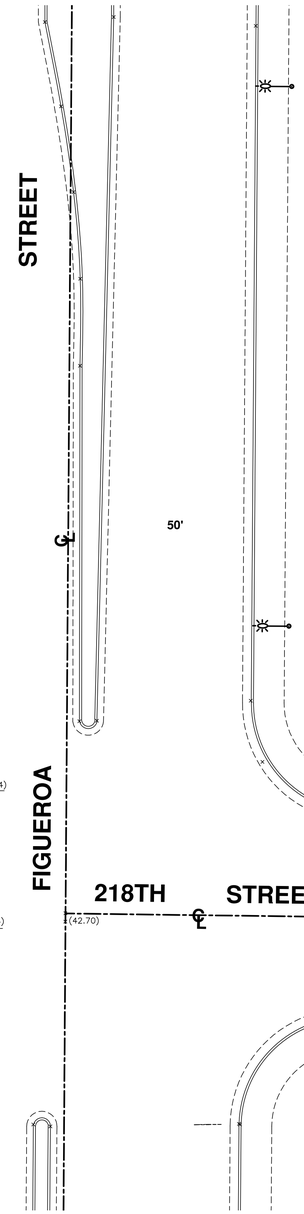
PROJECT NO: 17065
MODEL FILE:
DRAWN BY: DD
CHK'D BY: PC

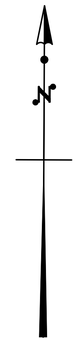
SHEET TITLE
SITE PLAN

A-3.0

TOPOGRAPHIC MAP







SCALE: 1"=16'

ABBREVIATIONS:

CBW ..... Conc. Block Wall
CLF ..... Chain Linked Fence
CONC. ..... Concrete
D/A ..... Driveway Appron
EP ..... Edison Pole
EX. ..... Existing
FF ..... Finish Floor Elevation
FL ..... Flow Line Elevation
GM ..... Gas Meter
SMH ..... Sewer Manhole
TC ..... Top of Curb Elevation
TEL ..... Telephone Box
TW ..... Top of Wall Elevation
WM ..... Water Meter
WV ..... Water Valve

LEGEND:

100.36 ..... Design Elevation
(100.10) ..... Existing Elevation
—— (99) ——..... Ex. Ground Contour Line
—— —— 99 ——..... Prop. Ground Contour Line
--X--X--..... Chain Link Fence
——o——o——..... Wrought Iron Fence
..... Fire Hydrant
..... Street Light
..... Ex. Tree, Diameter
..... Palm Tree

LEGAL DESCRIPTION:

A PORTION OF LOT 41 OF TRACT NO. 3612, IN THE CITY CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 40 PAGES 5 AND 6 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

BENCH MARK:

B.M. NUMBER: 7Y10536
ELEV. 47.686
QUAD (YEAR) 2005
DESCRIPTION: L & SPK IN CB 10.7M(35') N/O BCR @ NW COR NORMANDIE AVE & CARSON ST

LICENSED LAND SURVEYOR
QUGUANG ZHANG
LS 8968
EXP. 9/30/2018
STATE OF CALIFORNIA

PLANS PREPARED BY:

_____ Date

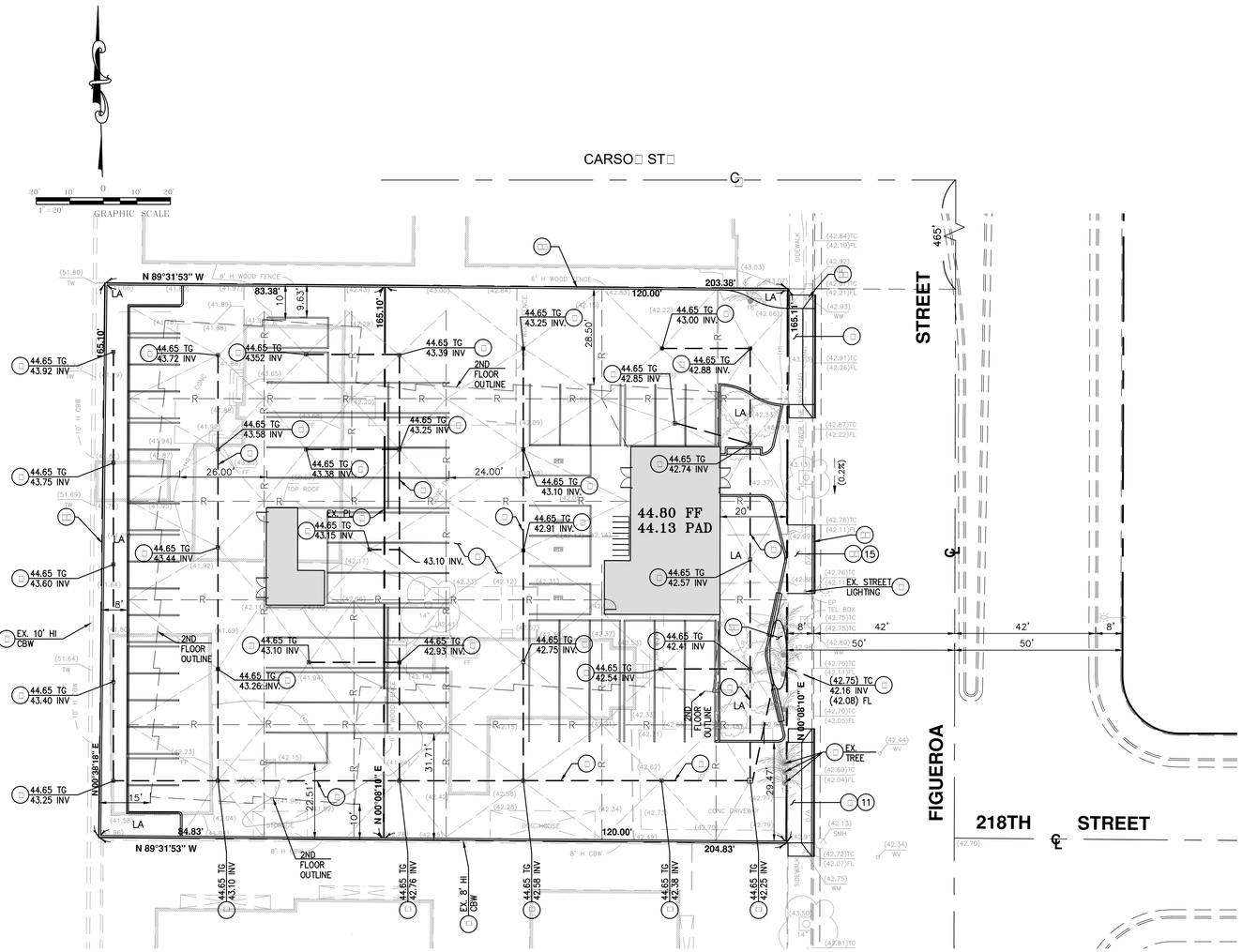
App□e Engineering Group
Subdivision Engineering Design Survey
□□□□ Te st□r A□e□□Suite □□□
E□Monte□C□liforni□ □□□□□
Tel: (626) 552-9818 Fax: (626) 529-0848
Email: Applcivil@gmail.com

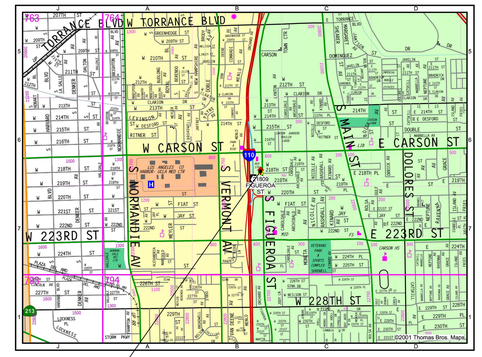
TOPOGRAPHIC MAP		
SCALE: 1"=16'	APN: 7343-020-009/010	DATE: 5-5-2017

21809, 21811 FIGUEROA ST, CARSON, CA 90745

HYDROLOGY ANALYSIS EXHIBIT MAP

REVIEWED BY:	RECOMMENDED BY:	APPROVED BY:
RICK BOUTROS, PE – ASSOCIATE CIVIL ENGINEER DATE	RAYMOND VELASCO, PE – SENIOR CIVIL ENGINEER DATE	GILBERT MARQUEZ, PE – CITY ENGINEER DATE





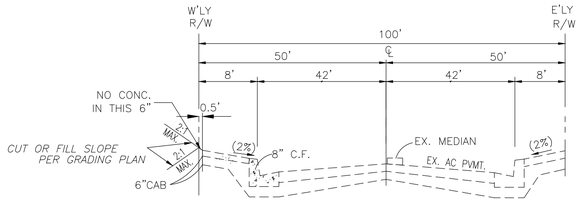
VICINITY MAP
T.G. # 764–B7 N.T.S.

ABBREVIATIONS:

APN	ASSESSOR'S PARCEL NUMBER	PM	PARCEL MAP
CA	CALIFORNIA	PVC	POLYVINYL CHLORIDE
C.B.	CATCH BASIN	PL	PROPERTY LINE
CBW	CONC. BLOCK WALL	S	SOUTH
C/L, CL	CENTERLINE	SMH	SEWER MANHOLE
CF	CURB FACE	STD	STANDARD
CLF	CHAIN LINK FENCE	ST	STREET
CMU	CONCRETE MASONRY UNIT	SL	STREET LIGHT
CONC.	CONCRETE	TC	TOP OF CURB ELEVATION
CONST.	CONSTRUCT	TC	TOP OF CURB ELEVATION
DWH	DRAINAGE MANHOLE	TYP	TYPICAL
D/A	DRIVEWAY APROACH	WF	WOODEN FENCE
E	EAST	W	WEST
EP	EDISON POLE	WM	WATER METER
EL. ELEV	ELEVATION		
EXIST.EX	EXISTING		
FF	FINISH FLOOR ELEVATION		
FH	FIRE HYDRANT		
FL	FLOW LINE ELEVATION		
FG	FINISH GRADE ELEVATION		
FS	FINISH SURFACE ELEVATION		
FT	FOOT, FEET		
HI	HIGH		
INV.	INVERT		
LA	LANDSCAPING		
M.B.	MAP BOOK		
MH	MAIN HOLE		
N	NORTH		
NTS	NOT TO SCALE		
NO	NUMBER		

LEGEND:

PROPERTY LINE
CENTERLINE
EX. TREE
POWER POLE PP
EX. FIRE HYDRANT
EXISTING ELEVATION (100.00)X
PROP. ELEVATION 99.00
RAMP/DRIVEWAY
EX. STRUCTURE
EX. CONCRETE BLOCK WALL
PROP. CMU WALL
FLOW LINE/SHEET FLOW
PROP. BUILDING
EX. STREET LIGHT



TYPICAL SECTION
FIGUEROA ST. N.T.S.

CONSTRUCTION NOTES:

1. SAW CUT EXIST. CONC. GUTTER 4" AWAY FROM CURB FACE. REMOVE CURB & GUTTER AND REPLACE WITH NEW DRIVEWAY APPROACH PER CITY STD. PLAN NO. 109.
2. CONST. 5" PCC PAVEMENT OVER 90% COMPACTED SOIL.
3. PROTECT IN PLACE.
4. CONST. 12"X12" CATCH BASIN WITH TRAFFIC GRATE, PER BROOKS PRODUCTS.
5. TO BE REMOVED.
6. CONST. 15"X4" PARKWAY DRAIN, DETAIL PER CITY STD. PLAN NO. 300, INLET TYPE I, S=15".
7. CONST. 4" PVC DRAINAGE PIPE, SCHEDULE 80, 0.5% (MIN.) SLOPE.
8. CONST. 6" PVC DRAINAGE PIPE, SCHEDULE 80, 0.5% (MIN.) SLOPE.
9. CONST. 18"X18" CATCH BASIN WITH TRAFFIC GRATE, DETAIL PER BROOKS PRODUCTS.
10. CONST. 8' HI CMU WALL, PER SEPARATE PERMIT.
11. SAW CUT EXIST. CONC. GUTTER 4" AWAY FROM CURB FACE & REMOVE EXIST. DRIVEWAY APPROACH.
12. CONST. 10' HI CMU WALL, PER SEPARATE PERMIT.
13. RELOCATE EX. WATER METER, PER SEPARATE PERMIT.
14. CONST. FULL HIGH CURB & GUTTER TO MATCH EXIST.
15. CONST. 4" PCC SIDEWALK TO MATCH EXIST.
16. CONST. DRY WELL, DETAIL PER LA COUNTY LID MANUAL PAGE E–32 TO E–40.

GENERAL NOTES:

SEE ARCHITECTURAL PLAN FOR BUILDING DETAIL INFORMATION.

HYDROLOGY AREA CALCULATIONS:

TOTAL LOT AREA : 33,830 SF	PERCENTAGE OF TOTAL AREA
EXIST. IMPERVIOUS AREA : 12,294 SF	36%
EXIST. PERVIOUS AREA : 21,536 SF	64%
PROP. IMPERVIOUS AREA : 30,949 SF	91%
PROP. PERVIOUS AREA : 2,881 SF	9%

REGISTERED PROFESSIONAL ENGINEER
GUOXIN MIAO
No. C73059
Exp. 12/31/18
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED BY:
GUOXIN MIAO 08/05/17
Date
Apple Engineering Group
Subdivision, Engineering Design & Survey
9080 TELSTAR AVENUE, SUITE 309
EL MONTE, CA 91731
Tel: (626) 552–9818 EMAIL: info@appleengineering.net

BENCHMARK:
B.M. NUMBER: 7Y10536
ELEV. 47.686
QUAD (YEAR) 2005
DESCRIPTION: L & SPK IN CB 10.7M(35') N/O BCR @ NW COR NORMANDIE AVE & CARSON ST

REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

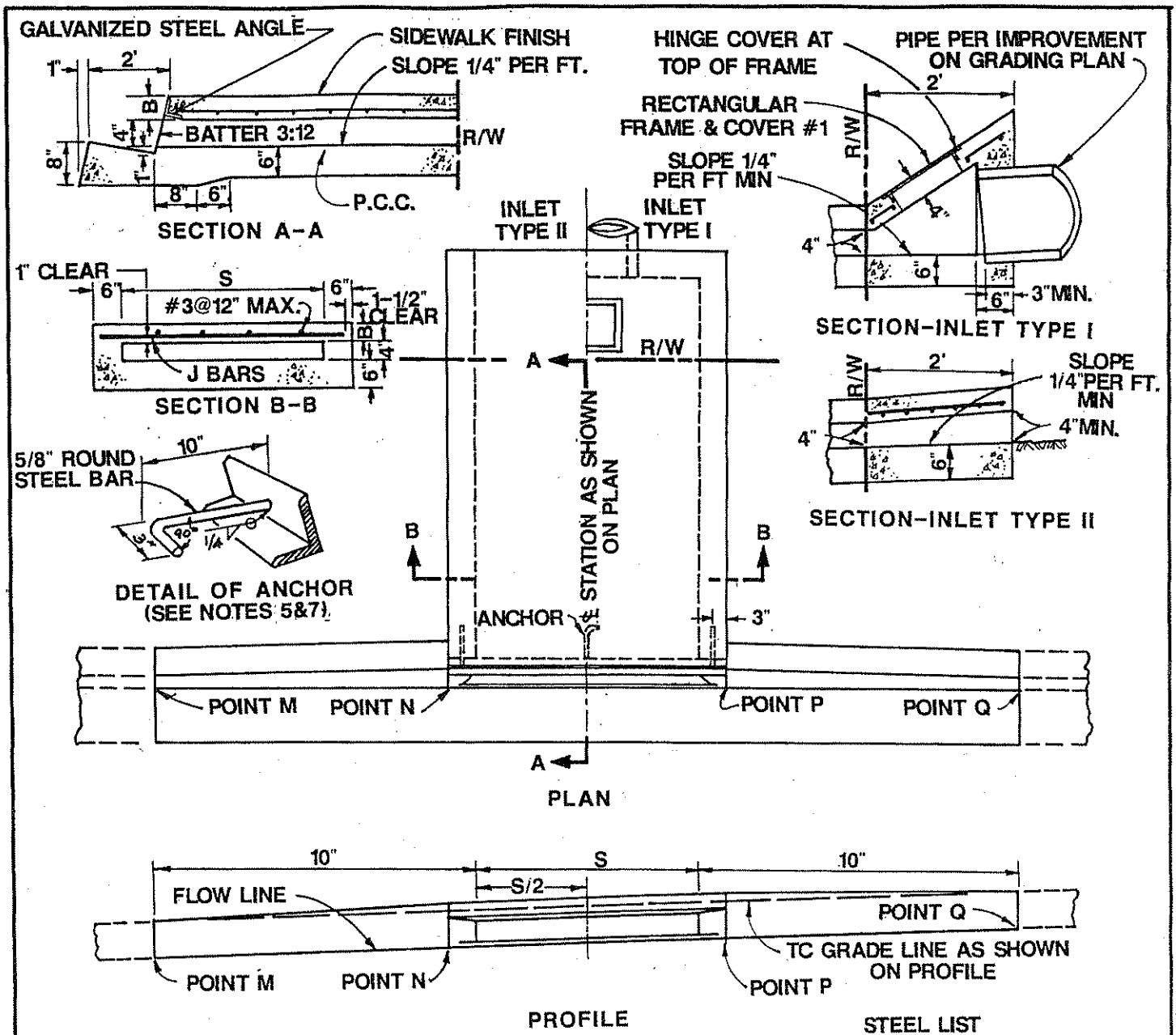
CITY OF CARSON

ENGINEERING SERVICES DIVISION

HYDROLOGY ANALYSIS EXHIBIT MAP 21809-21811 FIGUEROA ST. CARSON, CA 90745

PROJECT NO.	SHEET 1 OF 1	PLAN NO.
P17052		

\\APPLESERVER\Company\Apple Engineering\P-Projects\2017\P17052- 21809-21811 Figueroa St., Carson\2. Design\500. Strom Water - Hydrology\Gen_01\Ref\Exhibit map\21809-21811 exhibit



NOTES:

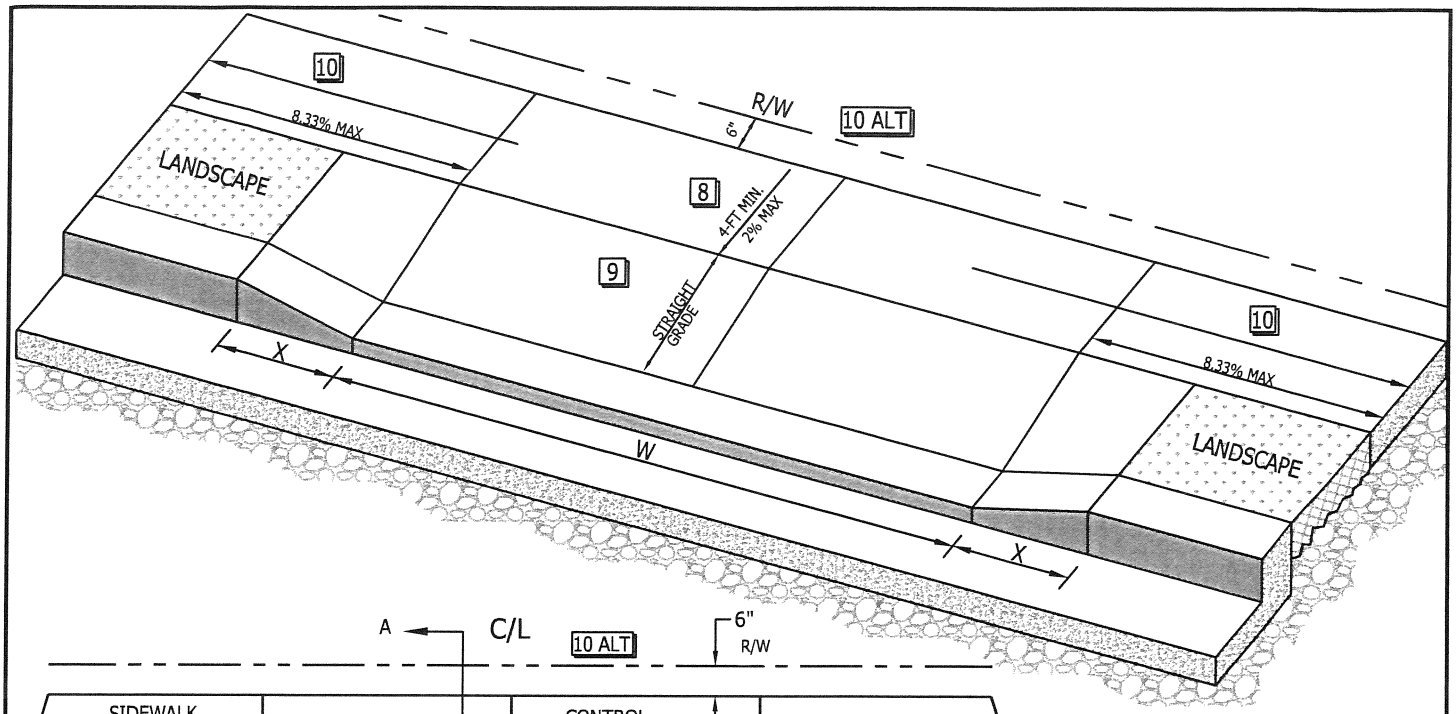
1. FLOOR OF BOX TO BE TROWELED SMOOTH.
2. WHEN THE TOE OF SLOPE IS WITHIN THE R/W, INLET TYPE I BEGINS AT THE TOE RATHER THAN R/W LINE.
3. FOR OPEN DITCH APPROACH (TYPE II) THE 2' EXTENSION IS NOT REQUIRED WHEN THE BACK OF WALK IS 2' OR MORE FROM THE R/W LINE.
4. TOP OF INLET STRUCTURE (TYPE I&II) TO BE FLUSH WITH ADJACENT SURFACE WHERE PRACTICABLE.
5. A HEADED STEEEL STUD 5/8"X6-3/8" WITH HEAD D-1" ATTACHED BY A FULL PENETRATION BUTT WELD MAY BE USED AS AN ALTERNATE ANCHOR.
6. NORMAL CURB FACE AT POINT M AND Q,B+5"AT POINT N AND P.
7. THE 3" LEG OF THE INTERIOR ANCHORS SHALL BE PARALLEL TO THE TOP OF SIDEWALK.

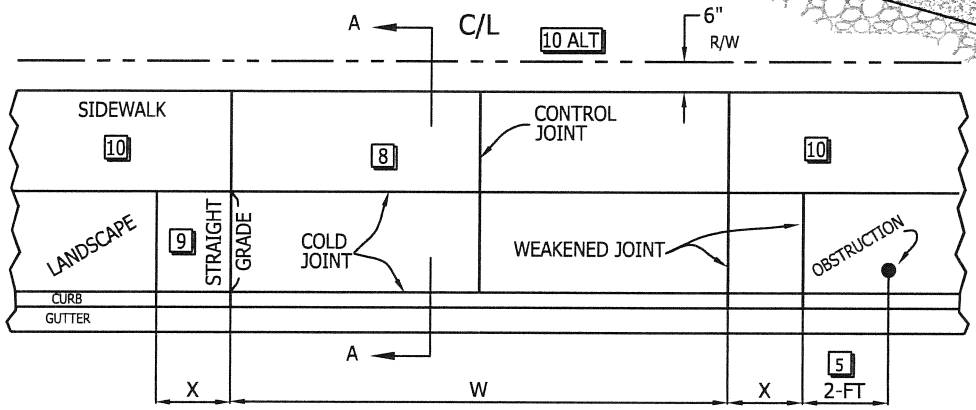
STEEL LIST

S	B	GALVANIZED STEEL ANGLE	ANCHOR	J BAR		
				SIZE	SPACING	LENGTH
1'-0"	3"	2-1/2"X2"X3/8"	2	# 3	7"	1'-9"
1'-6"	"	"	"	"	"	2'-3"
2'-0"	"	"	"	"	"	2'-9"
2'-6"	"	"	"	"	"	3'-3"
3'-0"	"	"	3	"	"	3'-9"
3'-6"	"	"	"	"	6"	4'-3"
4'-0"	"	"	"	"	5"	4'-9"
4'-6"	4"	3-1/2"X3"X1/2"	"	"	6-1/2"	5'-3"
5'-0"	"	"	"	"	5"	5'-9"
5'-6"	"	"	"	"	4"	6'-3"
6'-0"	"	"	"	"	3-1/2"	6'-9"

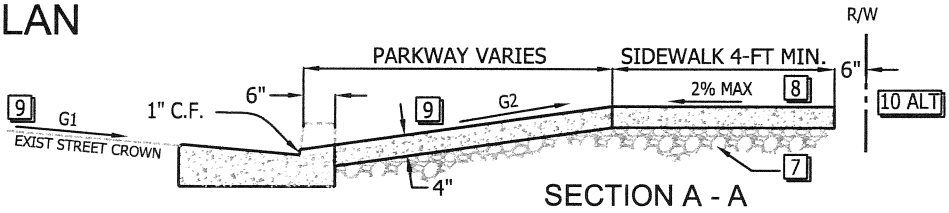
CITY OF CARSON

RIVISIONS	PARKWAY DRAIN NO. 1	DRAWN BY
		DATE APPROVED 2/2/87
	RECOMMENDED: W Huber DIVISION ENGINNEER APPROVED: Harold C. Williams DIRECTOR OF PUBLIC WORKS	NO. 300





PLAN



SECTION A - A

NOTES:

1. W=20-FT MAXIMUM WIDTH UNLESS OTHERWISE APPROVED BY DIRECTOR OF PUBLIC WORKS.
2. CASE 1 MAY BE USED FOR SIDEWALKS WITH LANDSCAPED PARKWAY BEHIND CURB
3. X=4-FT WHEN CURB FACE IS 8-INCHES
4. X=3-FT WHEN CURB FACE IS 6-INCHES
5. NO OBSTRUCTIONS WITHIN 2-FT OF TOP OF "X"
6. SEE CARSON MUNICIPAL CODE, ARTICLE VII, CHAPTER 1 HIGHWAY PERMIT ORDINANCE FOR OTHER RESTRICTIONS.
7. 4-INCH MINIMUM C.A.B. AT 95% COMPACTION OVER SUBGRADE AT 90% COMPACTION
8. SHALL BE A MINIMUM OF 4-FT AND SHALL NOT EXCEED 2% CROSS SLOPE FOR ADA COMPLIANCE
9. STRAIGHT GRADE FROM BACK OF CURB TO FRONT OF SIDEWALK. G2 MINUS G1 SHALL NOT EXCEED 12%. G1 MIN = -1%
10. RAMP ADJACENT SIDEWALK (8.33% MAX) TO ACCOMODATE NOTE #9. NO ADDITIONAL EASEMENT REQUIRED

10 ALT EASEMENT BEYOND THE RIGHT-OF-WAY MAY BE REQUIRED TO ACCOMODATE ADA REQUIREMENTS

CITY OF CARSON

REVISIONS	DATE
INCLUDED C.A.B	1/14/93
REVISED 2, INCLUDED 8-10ALT	12/21/16

DATE APPROVED:

SHEET 1 OF 1

RESIDENTIAL DRIVEWAY-CASE 1

RECOMMENDED:

CITY ENGINEER

APPROVED:

1/26/17

DIRECTOR OF PUBLIC WORKS

DRAWN BY:

RAYMOND H. VELASCO, P.E.

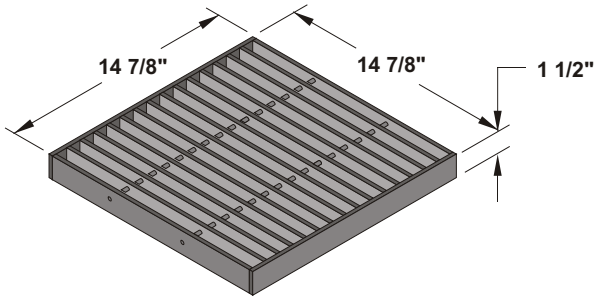
NO. 109

1212 CAST IRON GRATE

PARKWAY ONLY 28 lbs.

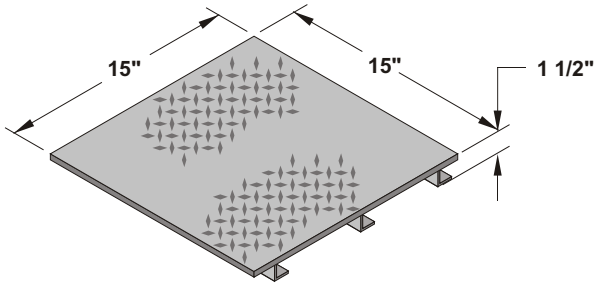
1212 STEEL GRATES

PARKWAY 16 lbs.
TRAFFIC 18 lbs.



1212 STEEL COVER

PARKWAY 22 lbs.
TRAFFIC 25 lbs.



NOTES:

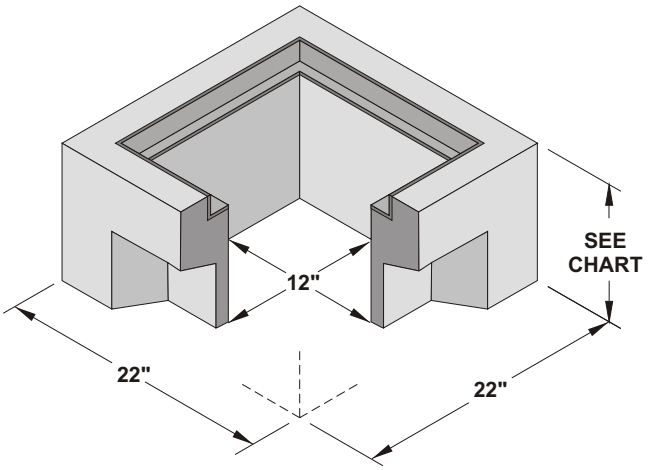
1. GRATES AND COVERS AVAILABLE PAINTED BLACK OR GALVANIZED
2. "ADA" GRATES AVAILABLE IN PARKWAY & TRAFFIC
3. "HEEL PROOF" GRATES AVAILABLE IN PARKWAY & TRAFFIC
4. A TOP SECTION WITH FRAME MUST BE USED IF BOLT DOWN REQUIRED

TOP SECTION	HT.	LBS	KNOCK-OUT
1212 T6	6"	170	NONE
1212 T12	12"	275	(4) 5" x 10"
1212 T18	18"	270	(4) 8" x 12"
1212 T24	24"	430	(4) 8" x 15"
1212 T28	28"	380	(4) 8" x 22"

EXTENSION SECTION	HT.	LBS	KNOCK-OUT
1212 E6	6"	170	NONE

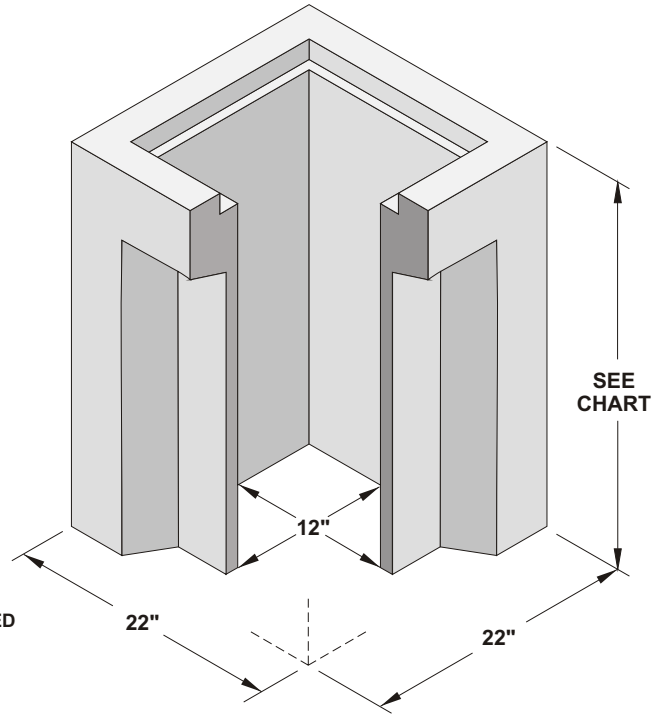
LOWER SECTION	HT.	LBS	KNOCK-OUT
1212 L12	12"	275	(4) 5" x 10"
1212 L18	18"	270	(4) 8" x 12"
1212 L24	24"	430	(4) 8" x 15"
1212 L28	28"	380	(4) 8" x 22"

1212 TOP SECTION (*WITH GALVANIZED FRAME*)



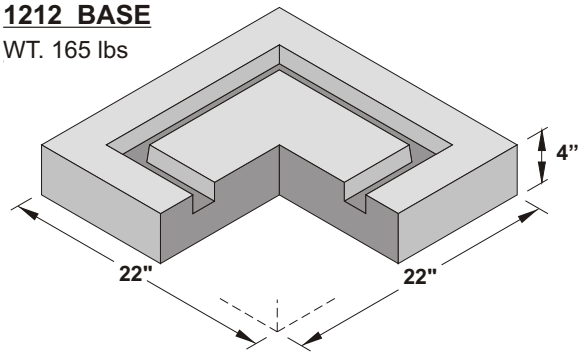
1212 LOWER SECTION (*NO FRAME*)

NOTE: USE 12", 18", 24", 28" LOWERS TO INCREASE DEPTH UP TO A MAXIMUM OF 72"



1212 BASE

WT. 165 lbs



7-01

12" x 12" CATCH BASIN

BROOKS PRODUCTS

1212 CB

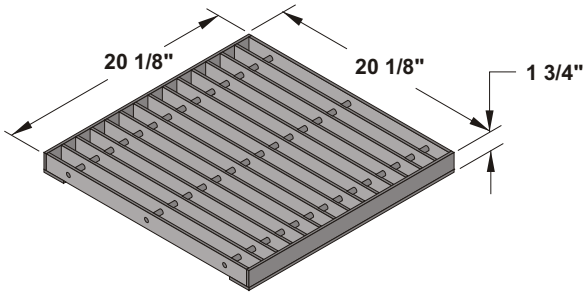
ORG. DWG. DATE	REV. DWG. DATE
04-20-95	05-18-00

1818 CAST IRON GRATE

PARKWAY ONLY 58 lbs.

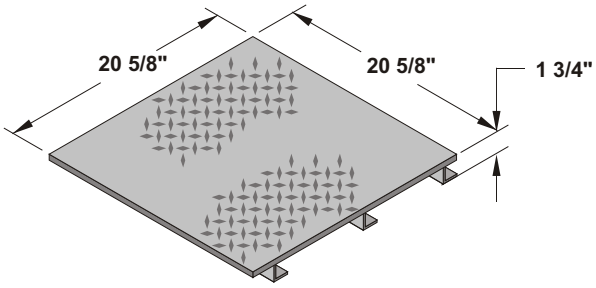
1818 STEEL GRATES

PARKWAY 27 lbs.
TRAFFIC. 49 lbs.

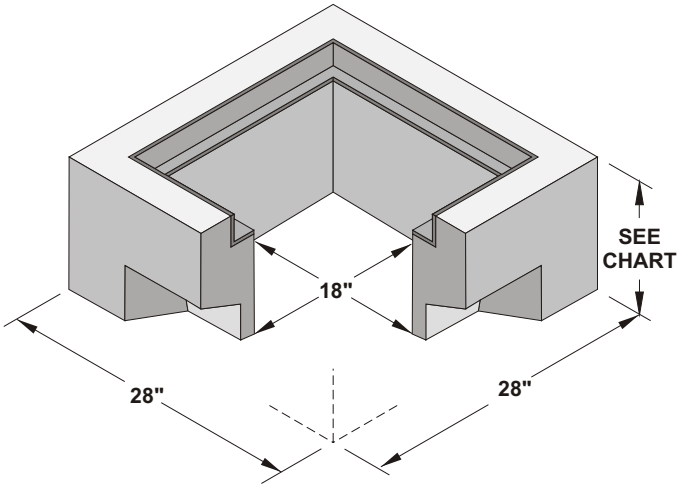


1818 STEEL COVER

PARKWAY 44 lbs.
TRAFFIC 65 lbs.

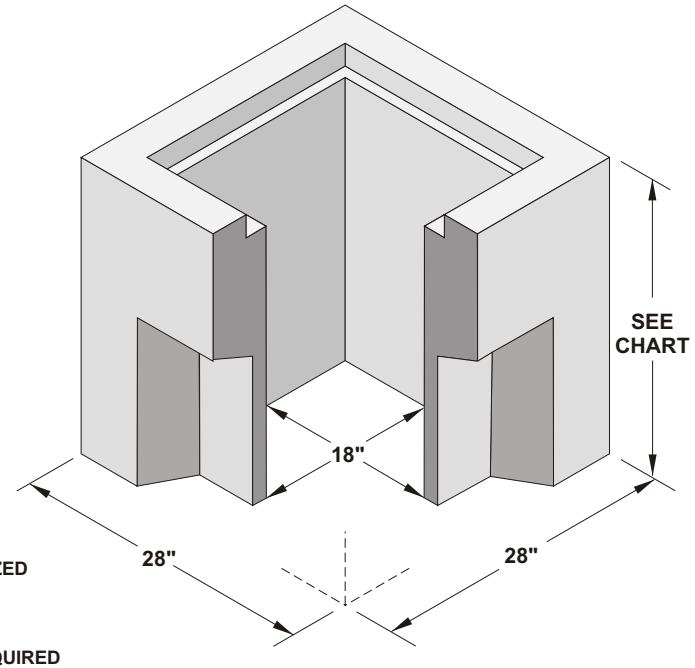


1818 TOP SECTION (*WITH GALVANIZED FRAME*)



1818 LOWER SECTION (*NO FRAME*)

NOTE: USE 12", 18", 24" LOWERS TO INCREASE DEPTH UP TO A MAXIMUM OF 72"



NOTES:

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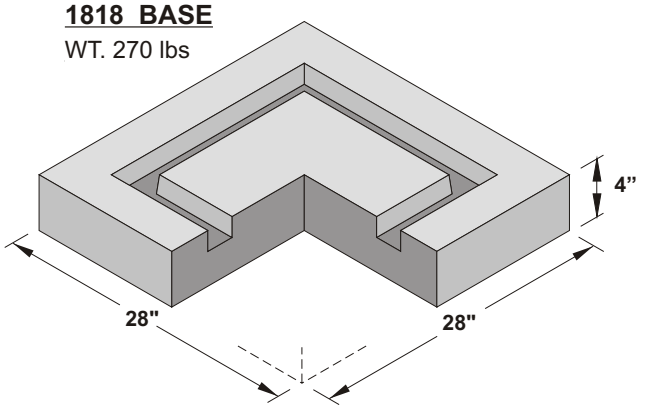
2. "ADA" GRATES AVAILABLE IN PARKWAY & TRAFFIC
3. "HEEL PROOF" GRATES AVAILABLE IN PARKWAY & TRAFFIC
4. A TOP SECTION WITH FRAME MUST BE USED IF BOLT DOWN REQUIRED

1818 BASE

WT. 270 lbs



TOP SECTION	HT.	LBS	KNOCK-OUT
1818 T6	6"	215	NONE
1818 T12	12"	370	(*4*) 5" x 10"
1818 T18	18"	555	(*4*) 9" x 11"
1818 T24	24"	785	(*4*) 9" x 11"

EXTENSION SECTION	HT.	LBS	KNOCK-OUT
1818 E6	6"	215	NONE

LOWER SECTION	HT.	LBS	KNOCK-OUT
1818 L12	12"	370	(*4*) 5" x 10"
1818 L18	18"	555	(*4*) 9" x 11"
1818 L24	24"	785	(*4*) 9" x 11"

18" x 18" CATCH BASIN

BROOKS PRODUCTS

1818 CB

ORG. DWG. DATE	REV. DWG. DATE
04-20-95	02-28-00

RET-4: Dry Well

Description

A dry well is a bored, drilled, or driven shaft or hole whose depth is greater than its width. A dry well may either be a small excavated pit filled with aggregate or a prefabricated storage chamber or pipe segment. Dry well design and function are similar to infiltration trenches in that they are designed to temporarily store and subsequently infiltrate stormwater runoff. In particular, dry wells can be used to reduce the volume of stormwater runoff from building roofs. While generally not a significant source of stormwater runoff pollution, roofs are one of the most important sources of new or increased stormwater runoff volume from land development sites. Dry wells can be used to indirectly enhance water quality by reducing the volume of stormwater runoff to be treated by other downstream stormwater quality control measures.

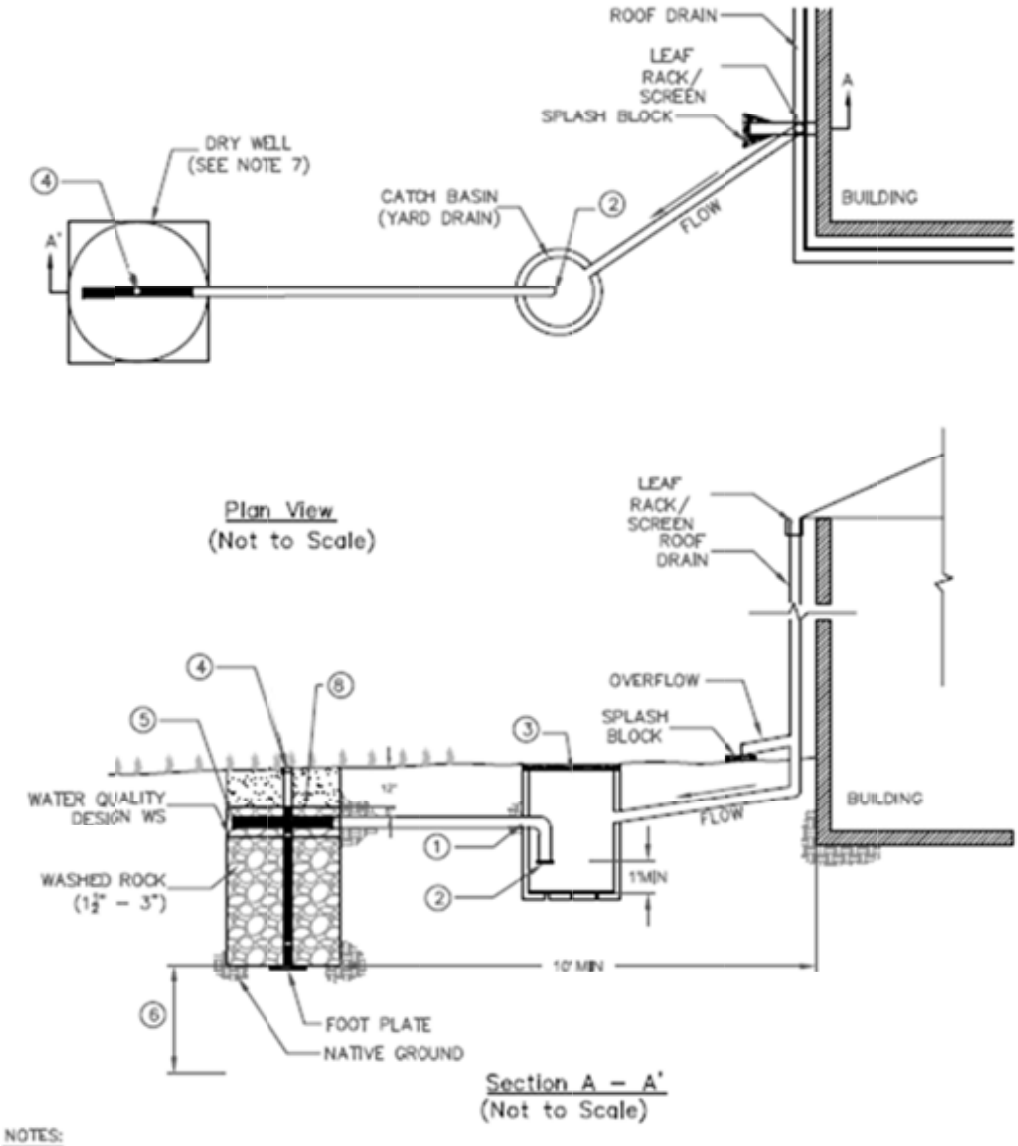
A schematic of a typical dry well is presented in Figure E-4.

LID Ordinance Requirements

Dry wells can be used to meet the on-site retention requirements of the LID Ordinance. Dry wells will prevent pollutants in the SWQDv from being discharged off-site.

Advantages

- Requires minimal space to install
- Low installation costs
- Provide groundwater recharge
- Reduces peak stormwater runoff flows during small storm events



NOTES:

① MINIMUM 4" – 6" DIAMETER PVC PIPE. INSTALL AT FLAT SLOPE.

② INSTALL FINE MESH SCREEN AT INLET TO DRY WELL. SET INLET ELEVATION AT 1' MINIMUM ABOVE CATCH BASIN BOTTOM.

③ CATCH BASIN (YARD DRAIN) INSTALLED WITH A SOLID LID FLUSH WITH GROUND SURFACE.

④ 4–6" VERTICAL PERFORATED PVC INSPECTION WELL WITH SCREW LID (NUT DOWN) FLUSH WITH GROUND SURFACE.

⑤ CAP END OF 4–6" HORZONTAL PERFORATED PVC DISPERSION PIPE.

⑥ MINIMUM 10' ABOVE SEASONAL HIGH GROUNDWATER TABLE AND 3' ABOVE BEDROCK.

⑦ DRY WELL CONFIGURATION MAY VARY (E.G. PRE-FAB MAY BE CIRCULAR).

⑧ CHOKING STONE LAYER SHALL BE PLACED ON TOP OF THE DRY WELL TO SEPARATE IT FROM THE TOPSOIL AND PREVENT CLOGGING.

Figure E-4. Dry Well Schematic

Disadvantages

- Is not appropriate for areas with low permeability soils or high groundwater levels
- May not be appropriate for industrial sites or locations with contaminated soils or where spills may occur because of the potential threat to groundwater contamination
- Cannot receive untreated stormwater runoff except from rooftops
- Requires complete reconstruction for failed dry wells
- Is not suitable for fill sites or on steep slopes

General Constraints and Implementation Considerations

- Dry wells can be integrated into open space buffers and other landscape areas.
- The potential for groundwater contamination must be carefully considered,. Dry wells are not suitable for sites that:
    - Use or store chemicals or hazardous materials, unless they are prevented from entering the well; or
    - Un-remediated “brownfield sites” where there is known groundwater or soil contamination
- Dry wells should be sited away from tree drip lines and kept free of vegetation.
- If the corrected in-situ infiltration rate exceed 2.4 in/hr, then stormwater runoff may need to be fully-treated with an upstream stormwater quality control measure prior to infiltration to protect groundwater quality.
- Dry wells cannot be located on sites with a slope greater than 20 percent (5:1).
- Pretreatment to remove sediment is required to protect dry wells from high sediment loads.
- If a yard drain is proposed as part of the design, it must be designed so that any standing water in the catch basin will infiltrate within 96 hours.
- If possible, the entire tributary area of the dry well should be stabilized before construction begins. If this is not possible, all flows should be diverted around the dry well to protect it from sediment loads during construction or the top two inches of soil from the dry well bottom should be removed after the site has been stabilized. Excavated material should be stored such that it cannot be washed back into the dry well if a storm occurs during construction.
- The equipment used to construct the dry well should have extra wide low-pressure tires. Construction traffic should not enter the dry well because it can compact soil, which reduces infiltration capacity. If heavy equipment is used on the base of the dry well, the infiltrative capacity may be restored by tilling or aerating prior to placing the infiltrative bed.

- Clean, washed gravel should be placed in the excavated dry well in lifts and lightly compacted with a plate compactor. Use of unwashed gravel can result in clogging.
- A geomembrane liner should be installed generously with overlapping seams on sides, bottom, and one foot below the surface of the dry well.
- Once construction is complete, stabilize the entire tributary area to the dry well before allowing stormwater runoff to enter it.
- An observation well must be installed to check water levels, retention time, and evidence of clogging.
- Accessibility for maintenance during dry and wet weather conditions must be provided.

Design Specifications

The following sections provide design specifications for dry wells.

Geotechnical

Due to the potential to contaminate groundwater, cause slope instability, impact surrounding structures, and potential for insufficient infiltration capacity, an extensive geotechnical site investigation must be conducted during the site planning process to verify site suitability for a dry well. All geotechnical investigations must be performed according to the most recent GMED Policy GS 200.1. Soil infiltration rates and the groundwater table depth must be evaluated to ensure that conditions are satisfactory for proper operation of a dry well. The project applicant must demonstrate through infiltration testing, soil logs, and the written opinion of a licensed civil engineer that sufficiently permeable soils exist on-site to allow the construction of a properly functioning dry well.

Dry wells are appropriate for soils with a minimum corrected in-situ infiltration rate of 0.3 in/hr. The geotechnical report must determine if the proposed project site is suitable for a dry well and must recommend a design infiltration rate (see “Design Infiltration Rate” under the “Sizing” section). The geotechnical investigation should be such that a good understanding is gained as to how the stormwater runoff will move through the soil (horizontally or vertically) and if there are any geological conditions that could inhibit the movement of water.

Pretreatment

Pretreatment is important for all structural stormwater quality control measures, but it is particularly important for retention facilities. Pretreatment refers to design features that provide settling of large particles before stormwater runoff enters a stormwater quality control measure in order to reduce the long-term maintenance burden. Pretreatment should be provided to reduce the sediment load entering a dry well in order to maintain the infiltration rate of the dry well. To ensure that dry wells are effective, the project applicant must incorporate pretreatment devices that provide sediment reduction (e.g.,

vegetated swales, vegetated filter strips, sedimentation manholes, and proprietary devices).

Setbacks

Dry wells must be sited following the setbacks from the most recent GMED Policy GS 200.1.

Geometry

- Dry well configurations vary, but generally have length and width top dimensions close to a square. Prefabricated dry wells are often circular.
- The filter bed media layers must have the following composition and thickness, unless they are prefabricated dry wells:
    - Top layer: 2 inches of pea gravel
    - Middle layer: 3 to 5 feet of washed 2- to 6-inch gravel; void spaces should be approximately 30 to 40 percent
    - Bottom layer: 6 inches of sand or geomembrane liner equivalent.
- Gravel media and prefabricated dry wells have porosities of 30 to 40 percent and 80 to 95 percent, respectively.
- If a dry well receives stormwater runoff from an underground pipe (i.e., stormwater runoff does not enter the top of the dry well from the ground surface), a fine mesh screen should be installed at the inlet. The inlet elevation should be 18 inches below the ground surface (i.e., below 12 inches of surface soil and 6 inches of dry well media).

Sizing

Dry wells are sized using a simple sizing method where the SWQDv must be completely infiltrated within 96 hours. Dry wells provide stormwater runoff storage in the voids of the rock fill.

Step 1: Determine the SWQDv

Dry wells must be designed to capture and retain the SWQDv (see Section 6 for SWQDv calculation procedures).

Step 2: Determine the design infiltration rate

Determine the corrected in-situ infiltration rate (f_{design}) of the native soil using the procedures described in the most recent GMED Policy GS 200.1.

Step 3: Calculate the surface area

Determine the required size of the infiltration surface by assuming the SWQDv will fill the available void spaces of the gravel storage layer. The maximum depth of stormwater runoff that can be infiltrated within the maximum retention time (96 hrs) is calculated using the following equation:

$$d_{max} = \frac{f_{design}}{12} \times t$$

Where:

d_{max} = Maximum depth of water that can be infiltrated within the required drawdown time [ft];
f_{design} = Design infiltration rate [in/hr]; and
t = Maximum retention time (max 96 hrs) [hr].

Select the dry well depth (d_t) such that:

$$d_t \leq \frac{d_{max}}{n_t}$$

Where:

d_t = Depth of dry well fill [ft];
d_{max} = Maximum depth of water that can be infiltrated within the maximum retention time [ft]; and
n_t = Dry well fill porosity.

Calculate the infiltrating surface area (bottom of the dry well) required:

$$A = \frac{SWQDv}{d_t \times n_t}$$

Where:

A = Surface area of the bottom of the dry well [ft^2];
SWQDv = Stormwater quality design volume [ft^3]; and
d_t = Depth of dry well fill [ft]; and
n_t = Dry well fill porosity.

Flow Entrance and Energy Dissipation

Energy dissipation controls, constructed of sound materials such as stones, concrete, or proprietary devices that are rated to withstand the energy of the influent flow, must be installed at the inlet to the dry well. Consult with LACDPW for the type and design of energy dissipation structure.

Drainage

The specifications for designing drainage systems for dry wells are presented below:

- The bottom of dry well must be native soil that is over-excavated at least one foot in depth with the soil replaced uniformly without compaction. Amending the excavated soil with two to four inches (~15 to 30 percent) of coarse sand is recommended.
- The use of vertical piping, either for distribution or infiltration enhancement, is prohibited. This application may be classified as a Class V Injection Well per 40 CFR Part 146.5(e)(4).
- The infiltration capacity of the subsurface layers should be sufficient to ensure a maximum retention time of 96 hours. An observation well must be installed to allow observation of retention time.

Hydraulic Restriction Layer

The entire infiltrative area, including the side walls must lined with a geomembrane liner to prevent soil from migrating into the top layer and reducing storage capacity. The specifications of the geomembrane liner are presented in Table E-7. The entire well area, including the sides, must be lined with a geomembrane liner prior to placing the media bed. Provide generous overlap at the seams.

Table E-7. Geomembrane Liner Specifications for Dry Wells

Parameter	Test Method	Specifications
Material		Nonwoven geomembrane liner
Unit weight		8 oz/yd^3 (minimum)
Filtration rate		0.08 in/sec (minimum)
Puncture strength	ASTM D-751 (Modified)	125 lbs (minimum)
Mullen burst strength	ASTM D-751	400 lb/in^2 (minimum)
Tensile strength	AST D-1682	300 lbs (minimum)
Equiv. opening size	US Standard Sieve	No. 80 (minimum)

Observation Well

The observation well is a vertical section of perforated PVC pipe, four- to six-inch diameter, installed flush with the top of the dry well on a footplate and with a locking, removable cap. The observation well is needed to monitor the infiltration rate in dry well and is useful for marking the location of the dry well.

Vegetation

- Dry wells must be kept free of vegetation.

- Trees and other large vegetation should be planted away from dry well such that drip lines do not overhang the infiltration area.

Restricted Construction Materials

Use of pressure-treated wood or galvanized metal at or around a dry well is prohibited.

Maintenance Access

The dry well must be safely accessible during wet and dry weather conditions if it is publicly-maintained. If the dry well becomes plugged and fails, access is needed to excavate the dry well and replace the filter bed media. To prevent damage and compaction, access must able to accommodate a backhoe working at "arm's length" from the dry well.

Maintenance Requirements

Maintenance and regular inspections are important for proper function of dry wells. The following are general maintenance requirements:

- Conduct regular inspection and routine maintenance for pretreatment devices.
- Inspect dry well and its observation well frequently to ensure that water infiltrates into the subsurface completely within maximum retention time of 96 hours. If water is present in the observation well more than 96 hours after a major storm, the dry well may be clogged. Maintenance activities triggered by a potentially clogged facility include:
    - Check for debris/sediment accumulation and remove sediment (if any) and evaluate potential sources of sediment and vegetative or other debris (e.g., embankment erosion, channel scour, overhanging trees, etc). If suspected upstream sources are outside of the County's jurisdiction, additional pretreatment operations (e.g., trash racks, vegetated swales, etc.) may be necessary.
    - Assess the condition of the top aggregate layer for sediment buildup and crusting. Remove the top layer of pea gravel and replace. If slow draining conditions persist, the entire dry well may need to be excavated and replaced.
- Eliminate standing water to prevent vector breeding.
- Remove and dispose of trash and debris as needed, but at least prior to the beginning of the wet season.

A summary of potential problems that may need to be addressed by maintenance activities is presented in Table E-8.

The County requires execution of a maintenance agreement to be recorded by the property owner for the on-going maintenance of any privately-maintained stormwater

quality control measures. The property owner is responsible for compliance with the maintenance agreement. A sample maintenance agreement is presented in Appendix H.

Table E-8. Dry Well Troubleshooting Summary

Problem	Conditions When Maintenance Is Needed	Maintenance Required
Trash and Debris	Trash and debris > 5 ft^3/1,000 ft^2	Remove and dispose of trash and debris.
Contaminants and Pollution	Any evidence of oil, gasoline, contaminants, or other pollutants	Remove any evidence of visual contamination.
Erosion/Sediment Accumulation	Undercut or eroded areas at inlet structures	Repair eroded areas and re-grade if necessary.
	Accumulation of sediment, debris, and oil/grease in pretreatment devices	Remove sediment, debris, and/or oil/grease.
	Accumulation of sediment, debris, and oil/grease on surface or inlet	Remove sediment, debris, and/or oil/grease.
Water Drainage Rate	Standing water, or by inspection of observation wells	Remove the top layer of the dry well bottom and replace if necessary.

APPENDIX E

Noise Modeling

Traffic Noise

TNM 2.5

Inputs & Results

Dudek
JVL

25 November 2017
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Birch SP
RUN: Existing
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
ST4	2	1	0.0	65.8	66	65.8	10	----	65.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min dB	Avg dB	Max dB
All Selected	2	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Birch SP
RUN: Existing

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 110 SB	48.0	North End	1	215.0	900.0	-13.00				Average	
		point2	2	215.0	800.0	-13.00				Average	
		point3	3	215.0	700.0	-13.00				Average	
		point4	4	215.0	600.0	-13.00				Average	
		point5	5	215.0	500.0	-13.00				Average	
		point6	6	215.0	400.0	-13.00				Average	
		point7	7	215.0	300.0	-13.00				Average	
		point8	8	215.0	200.0	-13.00				Average	
		point9	9	215.0	100.0	-13.00				Average	
		point10	10	215.0	0.0	-13.00					
US 110 NB	48.0	South End	11	265.0	0.0	-13.00				Average	
		point12	12	265.0	100.0	-13.00				Average	
		point13	13	265.0	200.0	-13.00				Average	
		point14	14	265.0	300.0	-13.00				Average	
		point15	15	265.0	400.0	-13.00				Average	
		point16	16	265.0	500.0	-13.00				Average	
		point17	17	265.0	600.0	-13.00				Average	
		point18	18	265.0	700.0	-13.00				Average	
		point19	19	265.0	800.0	-13.00				Average	
		point20	20	265.0	900.0	-13.00					
Figueroa Street SB	12.0	North End	21	630.0	900.0	0.00				Average	
		point22	22	630.0	800.0	0.00				Average	
		point23	23	630.0	700.0	0.00				Average	
		point24	24	630.0	600.0	0.00				Average	
		point25	25	630.0	500.0	0.00				Average	

		point26	26	630.0	400.0	0.00		Average
		point27	27	630.0	300.0	0.00		Average
		point28	28	630.0	200.0	0.00		Average
		point29	29	630.0	100.0	0.00		Average
		point30	30	630.0	0.0	0.00		
Figueroa Street NB	12.0	South End	31	670.0	0.0	0.00		Average
		point32	32	670.0	100.0	0.00		Average
		point33	33	670.0	200.0	0.00		Average
		point34	34	670.0	300.0	0.00		Average
		point35	35	670.0	400.0	0.00		Average
		point36	36	670.0	500.0	0.00		Average
		point37	37	670.0	600.0	0.00		Average
		point38	38	670.0	700.0	0.00		Average
		point39	39	670.0	800.0	0.00		Average
		point40	40	670.0	900.0	0.00		

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Birch SP
RUN: Existing

Roadway Name	Points Name	No.	Segment Autos V veh/hr	Autos S mph	MTrucks V veh/hr	MTrucks S mph	HTrucks V veh/hr	HTrucks S mph	Buses V veh/hr	Buses S mph	Motorcycles V veh/hr	Motorcycles S mph
US 110 SB	North End	1	10088	65	87	65	234	65	0	0	0	0
	point2	2	10088	65	87	65	234	65	0	0	0	0
	point3	3	10088	65	87	65	234	65	0	0	0	0
	point4	4	10088	65	87	65	234	65	0	0	0	0
	point5	5	10088	65	87	65	234	65	0	0	0	0
	point6	6	10088	65	87	65	234	65	0	0	0	0
	point7	7	10088	65	87	65	234	65	0	0	0	0
	point8	8	10088	65	87	65	234	65	0	0	0	0
	point9	9	10088	65	87	65	234	65	0	0	0	0
	point10	10										
US 110 NB	South End	11	10088	65	78	65	234	65	0	0	0	0
	point12	12	10088	65	78	65	234	65	0	0	0	0
	point13	13	10088	65	78	65	234	65	0	0	0	0
	point14	14	10088	65	78	65	234	65	0	0	0	0
	point15	15	10088	65	78	65	234	65	0	0	0	0
	point16	16	10088	65	78	65	234	65	0	0	0	0
	point17	17	10088	65	78	65	234	65	0	0	0	0
	point18	18	10088	65	78	65	234	65	0	0	0	0
	point19	19	10088	65	78	65	234	65	0	0	0	0
	point20	20										
Figueroa Street SB	North End	21	1182	40	24	40	12	40	0	0	0	0

	point22	22	1182	40	24	40	12	40	0	0	0	0
	point23	23	1182	40	24	40	12	40	0	0	0	0
	point24	24	1182	40	24	40	12	40	0	0	0	0
	point25	25	1182	40	24	40	12	40	0	0	0	0
	point26	26	1182	40	24	40	12	40	0	0	0	0
	point27	27	1182	40	24	40	12	40	0	0	0	0
	point28	28	1182	40	24	40	12	40	0	0	0	0
	point29	29	1182	40	24	40	12	40	0	0	0	0
	point30	30										
Figueroa Street NB	South End	31	885	40	18	40	9	40	0	0	0	0
	point32	32	885	40	18	40	9	40	0	0	0	0
	point33	33	885	40	18	40	9	40	0	0	0	0
	point34	34	885	40	18	40	9	40	0	0	0	0
	point35	35	885	40	18	40	9	40	0	0	0	0
	point36	36	885	40	18	40	9	40	0	0	0	0
	point37	37	885	40	18	40	9	40	0	0	0	0
	point38	38	885	40	18	40	9	40	0	0	0	0
	point39	39	885	40	18	40	9	40	0	0	0	0
	point40	40										

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Birch SP
RUN: Existing

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	575.0	480.0	0.00	4.92	0.00	66	10.0	8.0	Y
ST4	2	1	388.0	625.0	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Birch SP
RUN: Existing

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	If Berm Top Width	If Berm Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
FW Barrier	W	0.00	99.99	0.00				0.00	South End	1	380.0	0.0	-13.00	23.00	0.00	0	0		
									point2	2	380.0	100.0	-13.00	23.00	0.00	0	0		
									point3	3	380.0	200.0	-13.00	23.00	0.00	0	0		
									point4	4	380.0	300.0	-13.00	23.00	0.00	0	0		
									point5	5	380.0	400.0	-13.00	23.00	0.00	0	0		
									point6	6	380.0	500.0	-13.00	23.00	0.00	0	0		
									point7	7	380.0	600.0	-13.00	23.00	0.00	0	0		
									point8	8	380.0	700.0	-13.00	23.00	0.00	0	0		
									point9	9	380.0	800.0	-13.00	23.00	0.00	0	0		
									point10	10	380.0	900.0	-13.00	23.00					

Dudek
JVL

25 November 2017
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Birch SP
RUN: Future
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	68.1	66	68.1	10	Snd Lvl	68.1	0.0	8	-8.0
ST4	2	1	0.0	66.0	66	66.0	10	Snd Lvl	66.0	0.0	8	-8.0
2nd Floor Balcony West	3	1	0.0	80.6	66	80.6	10	Snd Lvl	80.6	0.0	8	-8.0
Roof Deck	4	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
Front Garden	5	1	0.0	70.5	66	70.5	10	Snd Lvl	70.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	4	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Birch SP
RUN: Future

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 110 SB	48.0	North End	1	215.0	900.0	-13.00				Average	
		point2	2	215.0	800.0	-13.00				Average	
		point3	3	215.0	700.0	-13.00				Average	
		point4	4	215.0	600.0	-13.00				Average	
		point5	5	215.0	500.0	-13.00				Average	
		point6	6	215.0	400.0	-13.00				Average	
		point7	7	215.0	300.0	-13.00				Average	
		point8	8	215.0	200.0	-13.00				Average	
		point9	9	215.0	100.0	-13.00				Average	
		point10	10	215.0	0.0	-13.00					
US 110 NB	48.0	South End	11	265.0	0.0	-13.00				Average	
		point12	12	265.0	100.0	-13.00				Average	
		point13	13	265.0	200.0	-13.00				Average	
		point14	14	265.0	300.0	-13.00				Average	
		point15	15	265.0	400.0	-13.00				Average	
		point16	16	265.0	500.0	-13.00				Average	
		point17	17	265.0	600.0	-13.00				Average	
		point18	18	265.0	700.0	-13.00				Average	
		point19	19	265.0	800.0	-13.00				Average	
		point20	20	265.0	900.0	-13.00					
Figueroa Street SB	12.0	North End	21	630.0	900.0	0.00				Average	
		point22	22	630.0	800.0	0.00				Average	
		point23	23	630.0	700.0	0.00				Average	
		point24	24	630.0	600.0	0.00				Average	
		point25	25	630.0	500.0	0.00				Average	

		point26	26	630.0	400.0	0.00	Average
		point27	27	630.0	300.0	0.00	Average
		point28	28	630.0	200.0	0.00	Average
		point29	29	630.0	100.0	0.00	Average
		point30	30	630.0	0.0	0.00	
Figueroa Street NB	12.0	South End	31	670.0	0.0	0.00	Average
		point32	32	670.0	100.0	0.00	Average
		point33	33	670.0	200.0	0.00	Average
		point34	34	670.0	300.0	0.00	Average
		point35	35	670.0	400.0	0.00	Average
		point36	36	670.0	500.0	0.00	Average
		point37	37	670.0	600.0	0.00	Average
		point38	38	670.0	700.0	0.00	Average
		point39	39	670.0	800.0	0.00	Average
		point40	40	670.0	900.0	0.00	

Dudek
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25 November 2017
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Birch SP
RUN: Future

Roadway Name	Points Name	No.	Segment Autos V veh/hr	Autos S mph	MTrucks V veh/hr	MTrucks S mph	HTrucks V veh/hr	HTrucks S mph	Buses V veh/hr	Buses S mph	Motorcycles V veh/hr	Motorcycles S mph
US 110 SB	North End	1	11301	65	87	65	262	65	0	0	0	0
	point2	2	11301	65	87	65	262	65	0	0	0	0
	point3	3	11301	65	87	65	262	65	0	0	0	0
	point4	4	11301	65	87	65	262	65	0	0	0	0
	point5	5	11301	65	87	65	262	65	0	0	0	0
	point6	6	11301	65	87	65	262	65	0	0	0	0
	point7	7	11301	65	87	65	262	65	0	0	0	0
	point8	8	11301	65	87	65	262	65	0	0	0	0
	point9	9	11301	65	87	65	262	65	0	0	0	0
	point10	10										
US 110 NB	South End	11	11301	65	87	65	262	65	0	0	0	0
	point12	12	11301	65	87	65	262	65	0	0	0	0
	point13	13	11301	65	87	65	262	65	0	0	0	0
	point14	14	11301	65	87	65	262	65	0	0	0	0
	point15	15	11301	65	87	65	262	65	0	0	0	0
	point16	16	11301	65	87	65	262	65	0	0	0	0
	point17	17	11301	65	87	65	262	65	0	0	0	0
	point18	18	11301	65	87	65	262	65	0	0	0	0
	point19	19	11301	65	87	65	262	65	0	0	0	0
	point20	20										
Figueroa Street SB	North End	21	1217	40	25	40	12	40	0	0	0	0

	point22	22	1217	40	25	40	12	40	0	0	0	0
	point23	23	1217	40	25	40	12	40	0	0	0	0
	point24	24	1217	40	25	40	12	40	0	0	0	0
	point25	25	1217	40	25	40	12	40	0	0	0	0
	point26	26	1217	40	25	40	12	40	0	0	0	0
	point27	27	1217	40	25	40	12	40	0	0	0	0
	point28	28	1217	40	25	40	12	40	0	0	0	0
	point29	29	1217	40	25	40	12	40	0	0	0	0
	point30	30										
Figueroa Street NB	South End	31	918	40	19	40	9	40	0	0	0	0
	point32	32	918	40	19	40	9	40	0	0	0	0
	point33	33	918	40	19	40	9	40	0	0	0	0
	point34	34	918	40	19	40	9	40	0	0	0	0
	point35	35	918	40	19	40	9	40	0	0	0	0
	point36	36	918	40	19	40	9	40	0	0	0	0
	point37	37	918	40	19	40	9	40	0	0	0	0
	point38	38	918	40	19	40	9	40	0	0	0	0
	point39	39	918	40	19	40	9	40	0	0	0	0
	point40	40										

Dudek
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25 November 2017
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Birch SP
RUN: Future

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	576.0	480.0	0.00	4.92	0.00	66	10.0	8.0	Y
ST4	2	1	388.0	625.0	0.00	4.92	0.00	66	10.0	8.0	Y
2nd Floor Balcony West	3	1	400.0	500.0	20.00	4.92	0.00	66	10.0	8.0	Y
Roof Deck	4	1	565.0	510.0	40.00	4.92	0.00	66	10.0	8.0	Y
Front Garden	5	1	600.0	510.0	0.00	4.92	0.00	66	10.0	8.0	Y

Dudek
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TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Birch SP
RUN: Future

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	If Berm Top Width	If Berm Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
FW Barrier	W	0.00	99.99	0.00				0.00	South End	1	380.0	0.0	-13.00	23.00	0.00	0	0		
									point2	2	380.0	100.0	-13.00	23.00	0.00	0	0		
									point3	3	380.0	200.0	-13.00	23.00	0.00	0	0		
									point4	4	380.0	300.0	-13.00	23.00	0.00	0	0		
									point5	5	380.0	400.0	-13.00	23.00	0.00	0	0		
									point6	6	380.0	500.0	-13.00	23.00	0.00	0	0		
									point7	7	380.0	600.0	-13.00	23.00	0.00	0	0		
									point8	8	380.0	700.0	-13.00	23.00	0.00	0	0		
									point9	9	380.0	800.0	-13.00	23.00	0.00	0	0		
									point10	10	380.0	900.0	-13.00	23.00					
Building West Wall Lower Level	W	0.00	99.99	0.00				0.00	South End	11	395.0	425.0	0.00	23.50	0.00	0	0		
									point12	12	395.0	550.0	0.00	23.50					
Building Walls	W	0.00	99.99	0.00				0.00	South End	13	405.0	425.0	0.00	51.00	0.00	0	0		
									point14	14	405.0	550.0	0.00	51.00	0.00	0	0		
									point17	17	575.0	535.0	0.00	51.00	0.00	0	0		
									point18	18	575.0	440.0	0.00	51.00	0.00	0	0		
									point19	19	405.0	425.0	0.00	51.00					

Dudek
JVL

25 November 2017
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Birch SP
RUN: Mitigated
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
ST1	1	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
ST4	2	1	0.0	65.9	66	65.9	10	----	65.9	0.0	8	-8.0
2nd Floor Balcony West	3	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
Roof Deck	4	1	0.0	58.1	66	58.1	10	----	58.1	0.0	8	-8.0
Front Garden	5	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min dB	Avg dB	Max dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Dudek
JVL

25 November 2017
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: Birch SP
RUN: Mitigated

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
US 110 SB	48.0	North End	1	215.0	900.0	-13.00				Average	
		point2	2	215.0	800.0	-13.00				Average	
		point3	3	215.0	700.0	-13.00				Average	
		point4	4	215.0	600.0	-13.00				Average	
		point5	5	215.0	500.0	-13.00				Average	
		point6	6	215.0	400.0	-13.00				Average	
		point7	7	215.0	300.0	-13.00				Average	
		point8	8	215.0	200.0	-13.00				Average	
		point9	9	215.0	100.0	-13.00				Average	
		point10	10	215.0	0.0	-13.00					
US 110 NB	48.0	South End	11	265.0	0.0	-13.00				Average	
		point12	12	265.0	100.0	-13.00				Average	
		point13	13	265.0	200.0	-13.00				Average	
		point14	14	265.0	300.0	-13.00				Average	
		point15	15	265.0	400.0	-13.00				Average	
		point16	16	265.0	500.0	-13.00				Average	
		point17	17	265.0	600.0	-13.00				Average	
		point18	18	265.0	700.0	-13.00				Average	
		point19	19	265.0	800.0	-13.00				Average	
		point20	20	265.0	900.0	-13.00					
Figueroa Street SB	12.0	North End	21	630.0	900.0	0.00				Average	
		point22	22	630.0	800.0	0.00				Average	
		point23	23	630.0	700.0	0.00				Average	
		point24	24	630.0	600.0	0.00				Average	
		point25	25	630.0	500.0	0.00				Average	

		point26	26	630.0	400.0	0.00		Average
		point27	27	630.0	300.0	0.00		Average
		point28	28	630.0	200.0	0.00		Average
		point29	29	630.0	100.0	0.00		Average
		point30	30	630.0	0.0	0.00		
Figueroa Street NB	12.0	South End	31	670.0	0.0	0.00		Average
		point32	32	670.0	100.0	0.00		Average
		point33	33	670.0	200.0	0.00		Average
		point34	34	670.0	300.0	0.00		Average
		point35	35	670.0	400.0	0.00		Average
		point36	36	670.0	500.0	0.00		Average
		point37	37	670.0	600.0	0.00		Average
		point38	38	670.0	700.0	0.00		Average
		point39	39	670.0	800.0	0.00		Average
		point40	40	670.0	900.0	0.00		

Dudek 25 November 2017
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INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: Birch SP
RUN: Mitigated

Roadway Name	Points Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
US 110 SB	North End	1	11301	65	87	65	262	65	0	0	0	0
	point2	2	11301	65	87	65	262	65	0	0	0	0
	point3	3	11301	65	87	65	262	65	0	0	0	0
	point4	4	11301	65	87	65	262	65	0	0	0	0
	point5	5	11301	65	87	65	262	65	0	0	0	0
	point6	6	11301	65	87	65	262	65	0	0	0	0
	point7	7	11301	65	87	65	262	65	0	0	0	0
	point8	8	11301	65	87	65	262	65	0	0	0	0
	point9	9	11301	65	87	65	262	65	0	0	0	0
	point10	10										
US 110 NB	South End	11	11301	65	87	65	262	65	0	0	0	0
	point12	12	11301	65	87	65	262	65	0	0	0	0
	point13	13	11301	65	87	65	262	65	0	0	0	0
	point14	14	11301	65	87	65	262	65	0	0	0	0
	point15	15	11301	65	87	65	262	65	0	0	0	0
	point16	16	11301	65	87	65	262	65	0	0	0	0
	point17	17	11301	65	87	65	262	65	0	0	0	0
	point18	18	11301	65	87	65	262	65	0	0	0	0
	point19	19	11301	65	87	65	262	65	0	0	0	0
	point20	20										
Figueroa Street SB	North End	21	1217	40	25	40	12	40	0	0	0	0

	point22	22	1217	40	25	40	12	40	0	0	0	0
	point23	23	1217	40	25	40	12	40	0	0	0	0
	point24	24	1217	40	25	40	12	40	0	0	0	0
	point25	25	1217	40	25	40	12	40	0	0	0	0
	point26	26	1217	40	25	40	12	40	0	0	0	0
	point27	27	1217	40	25	40	12	40	0	0	0	0
	point28	28	1217	40	25	40	12	40	0	0	0	0
	point29	29	1217	40	25	40	12	40	0	0	0	0
	point30	30										
Figueroa Street NB	South End	31	918	40	19	40	9	40	0	0	0	0
	point32	32	918	40	19	40	9	40	0	0	0	0
	point33	33	918	40	19	40	9	40	0	0	0	0
	point34	34	918	40	19	40	9	40	0	0	0	0
	point35	35	918	40	19	40	9	40	0	0	0	0
	point36	36	918	40	19	40	9	40	0	0	0	0
	point37	37	918	40	19	40	9	40	0	0	0	0
	point38	38	918	40	19	40	9	40	0	0	0	0
	point39	39	918	40	19	40	9	40	0	0	0	0
	point40	40										

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25 November 2017
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: Birch SP
RUN: Mitigated

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
ST1	1	1	576.0	480.0	0.00	4.92	0.00	66	10.0	8.0	Y
ST4	2	1	388.0	625.0	0.00	4.92	0.00	66	10.0	8.0	Y
2nd Floor Balcony West	3	1	400.0	500.0	20.00	4.92	0.00	66	10.0	8.0	Y
Roof Deck	4	1	565.0	510.0	40.00	4.92	0.00	66	10.0	8.0	Y
Front Garden	5	1	595.0	510.0	0.00	4.92	0.00	66	10.0	8.0	Y

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25 November 2017
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Birch SP
RUN: Mitigated

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
FW Barrier	W	0.00	99.99	0.00				0.00	South End	1	380.0	0.0	-13.00	23.00	0.00	0	0		
									point2	2	380.0	100.0	-13.00	23.00	0.00	0	0		
									point3	3	380.0	200.0	-13.00	23.00	0.00	0	0		
									point4	4	380.0	300.0	-13.00	23.00	0.00	0	0		
									point5	5	380.0	400.0	-13.00	23.00	0.00	0	0		
									point6	6	380.0	500.0	-13.00	23.00	0.00	0	0		
									point7	7	380.0	600.0	-13.00	23.00	0.00	0	0		
									point8	8	380.0	700.0	-13.00	23.00	0.00	0	0		
									point9	9	380.0	800.0	-13.00	23.00	0.00	0	0		
									point10	10	380.0	900.0	-13.00	23.00					
Building West Wall Lower Level	W	0.00	99.99	0.00				0.00	South End	11	395.0	425.0	0.00	29.00	0.00	0	0		
									point12	12	395.0	550.0	0.00	29.00					
Building Walls	W	0.00	99.99	0.00				0.00	South End	13	405.0	425.0	0.00	51.00	0.00	0	0		
									point14	14	405.0	550.0	0.00	51.00	0.00	0	0		
									point17	17	575.0	535.0	0.00	51.00	0.00	0	0		
									point18	18	575.0	440.0	0.00	51.00	0.00	0	0		
									point19	19	405.0	425.0	0.00	51.00					
Garden Wall	W	0.00	99.99	0.00				0.00	South End	20	600.0	440.0	0.00	5.00	0.00	0	0		
									point21	21	600.0	535.0	0.00	5.00					

Construction Noise

RCNM

Inputs & Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/22/2017
Case Description: 1062 CVR Demolition

				---- Receptor #1 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
North Multi-Fam. Res. (Closest)	Residential	55	50	45

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw	No	20	90		5	0
Dozer	No	40	85		5	0
Backhoe	No	40	80		5	0
Backhoe	No	40	80		5	0
Dump Truck	No	40		76.5	5	0

Results

	Calculated (dBA)	
Equipment	*Lmax	Leq
Concrete Saw	110	103
Dozer	105	101
Backhoe	100	96
Backhoe	100	96
Dump Truck	96.5	92.5
Total	110	106.3

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Acoustic Center - North Res.	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20	90		29	0
Dozer	No	40	85		29	0
Backhoe	No	40	80		29	0
Backhoe	No	40	80		29	0
Dump Truck	No	40		76.5	29	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Saw		94.7	87.7
Dozer		89.7	85.8
Backhoe		84.7	80.8
Backhoe		84.7	80.8
Dump Truck		81.2	77.2
	Total	94.7	91

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Closest SFR	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Saw	No	20	90		315	0
Dozer	No	40	85		315	0
Backhoe	No	40	80		315	0
Backhoe	No	40	80		315	0
Dump Truck	No	40		76.5	315	0

Results

Equipment		Calculated (dBA) *Lmax	Leq	Noise Limits (dBA)
Concrete Saw		74	67	
Dozer		69	65	
Backhoe		64	60	
Backhoe		64	60	
Dump Truck		60.5	56.5	
	Total	74	70.3	

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/22/2017
Case Description: Birch SP - Site Preparation

		Baselines (dBA)			---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night	
Northern Multi-Family Res. (Closest)	Residential	55	50	45	

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		5	0
Dozer	No	40	85		5	0
Backhoe	No	40	80		5	0
Dump Truck	No	40		76.5	5	0

Results

	Calculated (dBA)	
Equipment	*Lmax	Leq
Grader	105	101
Dozer	105	101
Backhoe	100	96
Dump Truck	96.5	92.5
Total	105	104.9

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Acoustic Center - North Res.	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		29	0
Dozer	No	40	85		29	0
Backhoe	No	40	80		29	0
Dump Truck	No	40		76.5	29	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	89.7	85.8
Dozer	89.7	85.8
Backhoe	84.7	80.8
Dump Truck	81.2	77.2
Total	89.7	89.7

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Closest SFR	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		315	0
Dozer	No	40	85		315	0
Backhoe	No	40	80		315	0
Dump Truck	No	40		76.5	315	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	69	65
Dozer	69	65
Backhoe	64	60
Dump Truck	60.5	56.5
Total	69	68.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/22/2017
Case Description: Birch SP - Grading

		Baselines (dBA)			---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night	
Northern Multi-Fam. Res (Closest)	Residential	55	50	45	

			Equipment			
	Impact		Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40	85		5	0
Grader	No	40	85		5	0
Backhoe	No	40	80		5	0
Dump Truck	No	40		76.5	5	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dozer	105	101
Grader	105	101
Backhoe	100	96
Dump Truck	96.5	92.5
Total	105	104.9

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Acoustic Center (North Res.)	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		29	0
Grader	No	40	85		29	0
Backhoe	No	40	80		29	0
Dump Truck	No	40		76.5	29	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Dozer		89.7	85.8
Grader		89.7	85.8
Backhoe		84.7	80.8
Dump Truck		81.2	77.2
	Total	89.7	89.7

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Closest SFR	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40	85		315	0
Grader	No	40	85		315	0
Backhoe	No	40	80		315	0
Dump Truck	No	40		76.5	315	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dozer	69	65
Grader	69	65
Backhoe	64	60
Dump Truck	60.5	56.5
Total	69	68.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/22/2017
Case Description: Birch SP - Building Construction

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northern Multi-Fam. Res.	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	5	0
Man Lift	No	20		74.7	5	0
Generator	No	50		80.6	5	0
Backhoe	No	40	80		5	0
Welder / Torch	No	40		74	5	0
Welder / Torch	No	40		74	5	0
Welder / Torch	No	40		74	5	0

Results

Equipment		Calculated (dBA) *Lmax	Leq
Crane		100.6	92.6
Man Lift		94.7	87.7
Generator		100.6	97.6
Backhoe		100	96
Welder / Torch		94	90
Welder / Torch		94	90
Welder / Torch		94	90
	Total	100.6	101.8

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Acoustic Center (North Re	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	29	0
Man Lift	No	20		74.7	29	0
Generator	No	50		80.6	29	0
Backhoe	No	40	80		29	0
Welder / Torch	No	40		74	29	0
Welder / Torch	No	40		74	29	0
Welder / Torch	No	40		74	29	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Crane	85.3	77.3
Man Lift	79.4	72.4
Generator	85.4	82.4
Backhoe	84.7	80.8
Welder / Torch	78.7	74.8
Welder / Torch	78.7	74.8
Welder / Torch	78.7	74.8
Total	85.4	86.6

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Closest SFR	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	315	0
Man Lift	No	20		74.7	315	0
Generator	No	50		80.6	315	0
Backhoe	No	40	80		315	0
Welder / Torch	No	40		74	315	0
Welder / Torch	No	40		74	315	0
Welder / Torch	No	40		74	315	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Crane	64.6	56.6
Man Lift	58.7	51.7
Generator	64.6	61.6
Backhoe	64	60
Welder / Torch	58	54
Welder / Torch	58	54
Welder / Torch	58	54
Total	64.6	65.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/22/2017
Case Description: Birch SP - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Northern Multi-Fam. Res. (Closest)	Residential	55	50	45

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	5	0
Paver	No	50		77.2	5	0
Dump Truck	No	40		76.5	5	0
Backhoe	No	40		77.6	5	0
Roller	No	20		80	5	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Mixer Truck		98.8	94.8
Paver		97.2	94.2
Dump Truck		96.5	92.5
Backhoe		97.6	93.6
Roller		100	93
	Total	100	100.7

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Acoustic Center (North Res.)	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	29	0
Paver	No	50		77.2	29	0
Dump Truck	No	40		76.5	29	0
Backhoe	No	40		77.6	29	0
Roller	No	20		80	29	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Mixer Truck		83.5	79.6
Paver		82	78.9
Dump Truck		81.2	77.2
Backhoe		82.3	78.3
Roller		84.7	77.7
	Total	84.7	85.4

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Closest SFR	Residential	55	50	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	315	0
Paver	No	50		77.2	315	0
Dump Truck	No	40		76.5	315	0
Backhoe	No	40		77.6	315	0
Roller	No	20		80	315	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Concrete Mixer Truck		62.8	58.8
Paver		61.2	58.2
Dump Truck		60.5	56.5
Backhoe		61.6	57.6
Roller		64	57
	Total	64	64.7

*Calculated Lmax is the Loudest value.

Ambient Noise Measurement Data

DUDEK
CREATOR OF KERATA TECHNOLOGY

FIELD DATA REPORT

Field Noise Measurement Data

Record: 803	
Project Name	*Birch Carson*
Observer(s)	*Connor Burke*
Date	*2017-10-31*
autoemail	*cburke@dudek.com*

Meteorological Conditions	
Temp (F)	*65*
Humidity % (R.H.)	*81*
Wind	*Calm*
Wind Speed (MPH)	*3*
Wind Direction	*East*
Sky	*Overcast*

Instrument and Calibrator Information	
Instrument Name List	*(ENC) Rion NL-52*
Instrument Name	*(ENC) Rion NL-52*
Instrument Name Lookup Key	*(ENC) Rion NL-52*
Manufacturer	*Rion*
Model	*NL-52*
Serial Number	*553896*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name	*(ENC) LD CAL150*
Calibrator Name Lookup Key	*(ENC) LD CAL150*
Calibrator Manufacturer	*Larson Davis*
Calibrator Model	*LD CAL150*
Calibrator Serial #	*5152*
Weighting?	*A-WTD*
Slow/Fast?	*Slow*
ANSI?	*Yes*

Recordings	
Record #	*1*
Site ID	*ST2*
Site Location	*Latitude:33.829948,* *Longitude:-118.285789,* *Altitude:22.629593,* *Speed:0.000000,* *Horizontal Accuracy:10.000000,* *Vertical Accuracy:3.000000,* *Time:10:49:22 AM PDT*
Begin (Time)	*10:47:00*
End (Time)	*10:58:00*
Leq	*66.3*
Lmax	*78.5*
Lmin	*54.3*
Other Lx?	*L90, L50, L10*
L90	*55.9*
L50	*63.2*
L10	*70.3*
Other (Specify Metric)	
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Aircraft, Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*

Are the meteorological conditions the same as previously notated?	*Yes*

Source Info and Traffic Counts	
Distance to Roadway (feet)	*20*
Distance to Roadway - Centerline/Edge of Pavement	*Centerline*
Estimated Vehicle Speed (MPH)	*40*
Count Duration (Min)	*10*

Traffic Counts	
Counting Both Directions?	*Yes*
Autos	*1*
Number of Vehicles - Autos	*197*
Medium Trucks	*1*
Number of Vehicles - Medium Trucks	*3*
Heavy Trucks	*1*
Number of Vehicles - Heavy Trucks	*1*
Buses	*1*
Number of Vehicles - Buses	*1*

Description / Photos

Site Photos	
Photo	
Comments / Description	*Facing west.*

DUDEK
CREATOR OF KERATA TECHNOLOGY

FIELD DATA REPORT

Recordings	
Record #	*2*
Site ID	*ST5*
Site Location	*Latitude:33.830634, Longitude:-118.286249, Altitude:15.043259, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:3.000000, Time:11:43:03 AM PDT*
Begin (Time)	*11:43:00*
End (Time)	*11:52:00*
Leq	*68.7*
Lmax	*80.4*
Lmin	*51.8*
Other Lx?	*L90, L50, L10*
L90	*57*
L50	*64.8*
L10	*72.4*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Aircraft, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*
Are the meteorological conditions the same as previously notated?	*Yes*

Source Info and Traffic Counts	
Distance to Roadway (feet)	*30*
Estimated Vehicle Speed (MPH)	*40*
Count Duration (Min)	*10*

Traffic Counts	
Counting Both Directions?	*Yes*
Autos	*1*
Number of Vehicles - Autos	*156*
Medium Trucks	*1*
Number of Vehicles - Medium Trucks	*7*
Heavy Trucks	*1*
Number of Vehicles - Heavy Trucks	*5*
Buses	*1*
Number of Vehicles - Buses	*2*
Motorcyles	*1*
Number of Vehicles - Motorcyles	*1*

Description / Photos

Site Photos	
Photo	
Comments / Description	*Facing east.*

Recordings	
Record #	*3*
Site ID	*ST4*
Site Location	*Latitude:33.830520, Longitude:-118.286843, Altitude:14.463547, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:3.000000, Time:11:58:46 AM PDT*
Begin (Time)	*11:56:00*
End (Time)	*12:07:00*
Leq	*61*
Lmax	*70.7*
Lmin	*55.4*
Other Lx?	*L90, L50, L10*
L90	*57.9*
L50	*60.1*
L10	*62.8*
Primary Noise Source	*Other*
Primary Noise Source Other	*Freeway Traffic over wall*
Other Noise Sources (Background)	*Distant Aircraft, Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*
Are the meteorological conditions the same as previously notated?	*Yes*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing east.*

Recordings

Record #	*4*
Site ID	*Facing freeway.*
Site Location	*Latitude:33.830462,* *Longitude:-118.286827,* *Altitude:14.217514,* *Speed:0.000000,* *Horizontal Accuracy:10.000000,* *Vertical Accuracy:3.000000,* *Time:12:08:06 PM PDT*
Begin (Time)	*12:08:00*
End (Time)	*12:13:00*
Leq	*62.4*
Lmax	*65.4*
Lmin	*60.4*
Other Lx?	*L90, L50, L10*
L90	*61*
L50	*62.3*
L10	*63.6*
Other (Specify Metric)	
Primary Noise Source	*Other*
Primary Noise Source Other	*Freeway Traffic*
Other Noise Sources (Background)	*Distant Aircraft, Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*
Are the meteorological conditions the same as previously notated?	*Yes*

Description / Photos

Site Photos

Photo	
Comments / Description	*Facing west towards freeway*

Recordings

Record #	*5*
Site ID	*ST1*
Site Location	*Latitude:33.830089,* *Longitude:-118.286342,* *Altitude:11.885483,* *Speed:0.000000,* *Horizontal Accuracy:10.000000,* *Vertical Accuracy:3.000000,* *Time:12:14:52 PM PDT*
Begin (Time)	*12:14:00*
End (Time)	*12:24:00*
Leq	*63.1*
Lmax	*71.4*
Lmin	*52.6*
Other Lx?	*L90, L50, L10*
L90	*55*
L50	*61.3*
L10	*66.7*
Other (Specify Metric)	
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Birds, Distant Aircraft, Distant Conversations / Yelling, Distant Dog Barking, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*
Are the meteorological conditions the same as previously notated?	*Yes*

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FIELD DATA REPORT

Source Info and Traffic Counts	
Distance to Roadway (feet)	*25*
Distance to Roadway - Centerline/Edge of Pavement	*Edge of Pavement*
Estimated Vehicle Speed (MPH)	*40*
Count Duration (Min)	*10*

Traffic Counts	
Counting Both Directions?	*Yes*
Autos	*1*
Number of Vehicles - Autos	*202*
Medium Trucks	*1*
Number of Vehicles - Medium Trucks	*5*
Heavy Trucks	*1*
Number of Vehicles - Heavy Trucks	*3*
Buses	*1*
Number of Vehicles - Buses	*2*

Description / Photos

Site Photos

Photo

Comments / Description	*Facing east.*

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FIELD DATA REPORT

Recordings	
Record #	*6*
Site ID	*ST3*
Site Location	*Latitude:33.829432, Longitude:-118.286259, Altitude:15.349289, Speed:0.000000, Horizontal Accuracy:10.000000, Vertical Accuracy:3.000000, Time:12:28:36 PM PDT*
Begin (Time)	*12:28:00*
End (Time)	*12:38:00*
Leq	*67.6*
Lmax	*75.2*
Lmin	*56.2*
Other Lx?	*L90, L50, L10*
L90	*59.6*
L50	*65.8*
L10	*71.2*
Primary Noise Source	*Traffic*
Other Noise Sources (Background)	*Distant Aircraft, Distant Conversations / Yelling, Distant Traffic*
Is the same instrument and calibrator being used as previously notated?	*Yes*
Are the meteorological conditions the same as previously notated?	*Yes*

Source Info and Traffic Counts	
Distance to Roadway (feet)	*35*
Distance to Roadway - Centerline/Edge of Pavement	*Centerline*
Estimated Vehicle Speed (MPH)	*40*
Count Duration (Min)	*10*

Traffic Counts	
Counting Both Directions?	*Yes*
Autos	*1*
Number of Vehicles - Autos	*210*
Medium Trucks	*1*
Number of Vehicles - Medium Trucks	*6*
Heavy Trucks	*1*
Number of Vehicles - Heavy Trucks	*2*
Buses	*1*
Number of Vehicles - Buses	*2*

Description / Photos

Site Photos	
Photo	
Comments / Description	*Facing east.*

APPENDIX F

Focused Traffic Analysis

DUDEK

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TECHNICAL MEMORANDUM

To: Collin Ramsey, Dudek
From: Sabita Tewani, Transportation Planner
Dennis Pascua, Transportation Services Manager
Subject: Focused Traffic Analysis for Birch Specific Plan
Date: November 13, 2017
Attachments: Figures 1–3
LOS Worksheets
Average Daily Traffic and Peak Hour Turn Movement Counts

The following Technical Memorandum presents the results of a Focused Traffic Analysis for the Birch Specific Plan (proposed project) located within the City of Carson (City). This memo includes the trip generation, distribution, and assignment of project-related trips on Figueroa Street and the Figueroa Street/218th Street intersection. It also provides a level of service analysis (LOS) for the Figueroa Street/218th Street intersection.

PROJECT DESCRIPTION

The Birch Specific Plan project is located on the west side of Figueroa Street, west of its intersection with 218th Street in the west side of the City. The project proposes to construct 32 residential condominium units with on-grade parking, landscaping, and other associated improvements. On-site parking for the proposed project would be consistent with the City's Municipal Code (City of Carson 2017) and would include 73 parking spaces: 64 resident spaces and 9 guest parking spaces. Access to the project would be provided via two driveways on Figueroa Street. The proposed project would involve demolition of the three existing residential structures located on the project site.

Figure 1 shows the project location and Figure 2 shows the site plan (all figures can be found at the end of this memo).

TRIP GENERATION

Table 1 presents the trip generation estimates of the proposed project. Trip rates for the proposed project were obtained from the Institute of Transportation Engineers (ITE) *Trip Generation, 9th*

Edition (2012). The ITE trip rate for "Residential Condominium/Townhouse" was used to estimate the trip generation of the proposed project.

Table 1
Project Trip Generation

Land Use	Size/Units	Daily	AM Peak Hour			PM Peak Hour		
			In	*Out*	***Total***	*In*	*Out*	***Total***
Trip Rates								
Residential Condo/Townhouse	per DU	5.81	17%	83%	**0.44**	67%	33%	**0.52**
Trip Generation								
Residential Condo/Townhouse	32 DUs	186	2	12	**14**	11	6	**17**

Source: Trip Generation, 9th Edition, Institute of Transportation Engineers, 2012.

Based on the table, the proposed project would generate approximately 186 daily trips, 14 AM peak hour trips (2 inbound and 12 outbound), and 17 PM peak hour trips (11 inbound and 6 outbound).

TRIP DISTRIBUTION AND ASSIGNMENT

Local trip distribution for the project was determined based on the roadway network in the vicinity. Approximately 55% of the project traffic would be expected to travel north towards Carson Street and 45% of the traffic would travel south towards 220th Street. Table 2 shows the trip distribution percentages and resulting project volume assignments at the Figueroa Street/218th Street intersection for the proposed project.

Table 2
Project Trip Distribution and Assignment

Roadway – Direction	Project Distribution	Project Assignment	
		AM	*PM*
Figueroa Street – north of 218th Street	55%	8	9
Figueroa Street – south of 218th Street	45%	6	8
Total	**100%**	**14 trips**	**17 trips**

The trip distribution percentages to/from the intersection was applied to the proposed project's weekday AM and PM peak hour trip generation estimates to calculate the project trip assignment (i.e., AM and PM peak hour volumes that the project would generate). Figure 3 also shows the project trip distribution and assignment.

EXISTING ROADWAY CONDITIONS AND TRAFFIC VOLUMES

Average daily traffic (ADT) volumes along Figueroa Street near the project site and peak hour turn movement counts at the Figueroa Street/218th Street intersection were collected on Wednesday, October 25, 2017. Count sheets are included at the end of this memo.

Figueroa Street runs north south just east of the project site. It is classified as a Major Highway in the City of Carson. It provides two lanes in each direction and is generally divided by a raised median. Parking (with some restrictions) is allowed along this segment of Figueroa Street. Per the daily traffic volume count, the ADT on Figueroa Street is approximately 21,300 vehicles.

The Figueroa Street/218th Street intersection is unsignalized. This intersection would provide full access to the project site and it aligns with the project driveway located to the south of the site.

Level of service (LOS) at the Figueroa Street/218th Street intersection was calculated using the *Highway Capacity Manual* (HCM) 2010 methodology (Transportation Research Board 2010) using Synchro LOS software (version 10). The Figueroa Street/218th Street intersection (westbound approach) currently operates at LOS D during both the AM and the PM peak hours under the existing conditions. LOS worksheets for the intersection are provided at the end of this memo.

PROJECT ACCESS ANALYSIS

Based on the proposed project's site plan, access to the site would be provided from two driveways on Figueroa Street. There are two driveways proposed on north and south ends of the site. Both the driveways are connected internally providing access to on-grade parking. The south driveway aligns with the Figueroa Street/218th Street intersection and would provide full access to the project. The north driveway of the project would be a right-in-right-out only driveway.

With the addition of project traffic to the Figueroa Street/218th Street intersection, the westbound approach of the intersection would continue to operate at LOS D during both the peak hours. The eastbound approach, i.e., the south driveway of the project, would operate at LOS F during the AM peak hour and LOS E during the PM peak hour. However, it should be noted that the peak hour project traffic volumes on the impacted approach (10 AM peak hour trips and 5 PM peak hour trips) is significantly low compared to the north and southbound traffic volumes on Figueroa Street. Furthermore, the minor street approach volumes on 218th Street and the project's south driveway are significantly lower than the minimum volume threshold of 100 vehicles per hour to warrant the installation of a traffic signal.

Additionally, per the LOS analysis, the 95th percentile (design) queue at the eastbound approach (project south driveway) is less than a vehicle, which means that no more than one vehicle would

be waiting at the project driveway to enter the Figueroa Street/218th Street intersection during the peak hours.

Therefore, with the relatively low traffic volumes generated by the proposed project, the provision of two driveways on Figueroa Street, and the calculated 95th percentile queue of one vehicle during the peak hours, the proposed project would not cause significant delay or queuing at the Figueroa Street/218th Street intersection. LOS worksheets for the intersection are provided at the end of this memo.

SUMMARY AND CONCLUSIONS

Based on the above analysis, the following conclusions can be made:

- The proposed project would generate approximately 186 daily trips, 14 AM peak hour trips (2 inbound and 12 outbound), and 17 PM peak hour trips (11 inbound and 6 outbound).
- The Figueroa Street/218th Street intersection (westbound approach) currently operates at LOS D during both the AM and the PM peak hour under existing conditions.
- With the addition of project traffic to the Figueroa Street/218th Street intersection, the eastbound approach, i.e., the south driveway of the project, would operate at LOS F during the AM peak hour and LOS E during the PM peak hour.
- Based on the low peak hour volumes on the eastbound or westbound approaches, a traffic signal would not be warranted at the Figueroa Street/218th Street intersection.
- With the relatively low traffic volumes generated by the proposed project, the provision of two driveways on Figueroa Street, and the calculated 95th percentile queue of one vehicle during the peak hours, the proposed project would not cause significant delay or queuing at the Figueroa Street/218th Street intersection.

REFERENCES

City of Carson. 2017. Carson Municipal Code. Current through July 18, 2017. http://www.codepublishing.com/CA/Carson/html/Carson09/Carson09010602.html#9162.21

Transportation Research Board. 2010. *Highway Capacity Manual* (HCM).

Source: Google Maps, 10/2016

Project Site □oc□tion □nd Stud□ Are□

FIGURE 1

Birch Specific Plan

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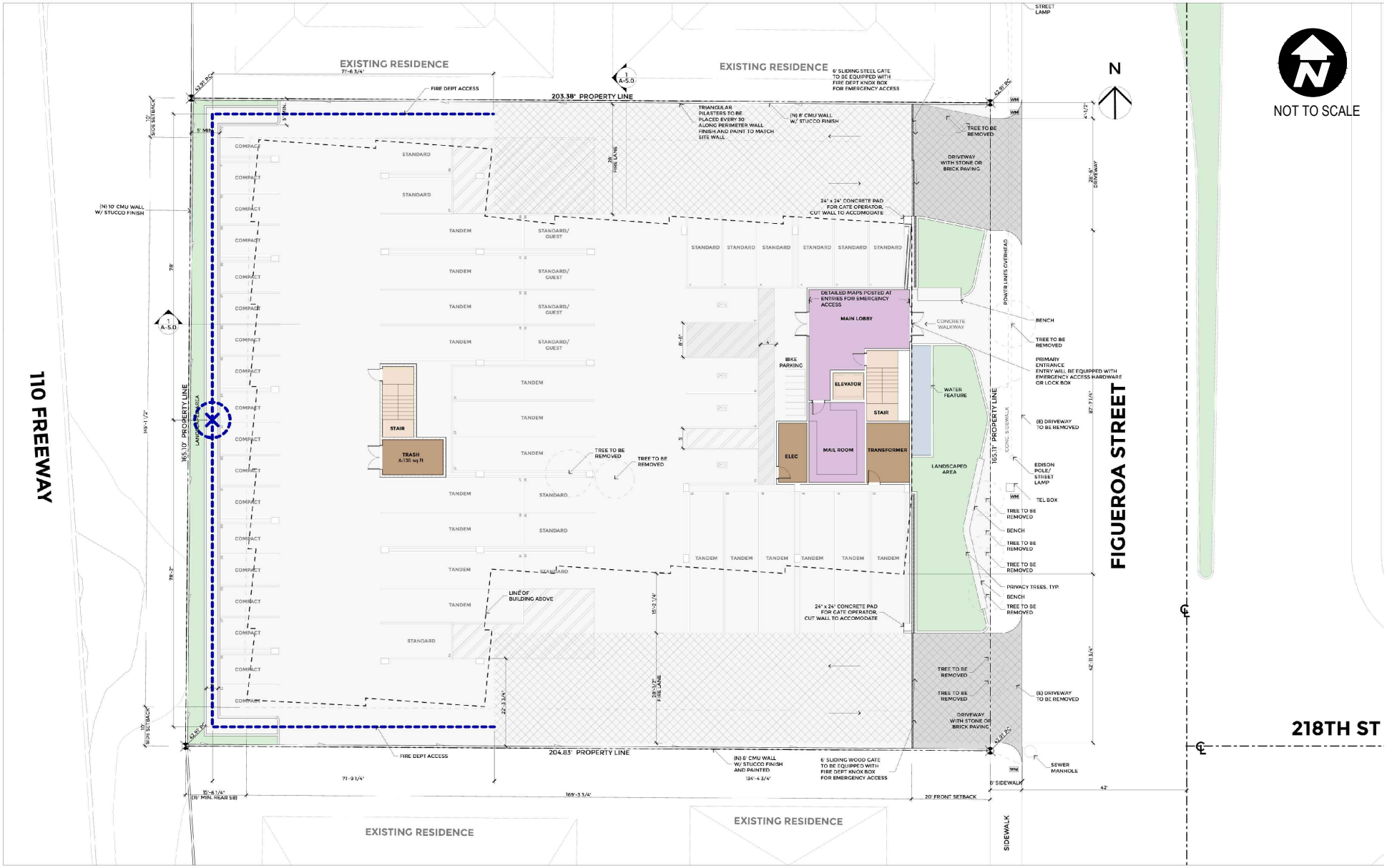

Source: Laney LA, 08/2017

Project Site Plan

FIGURE 2

Birch Specific Plan

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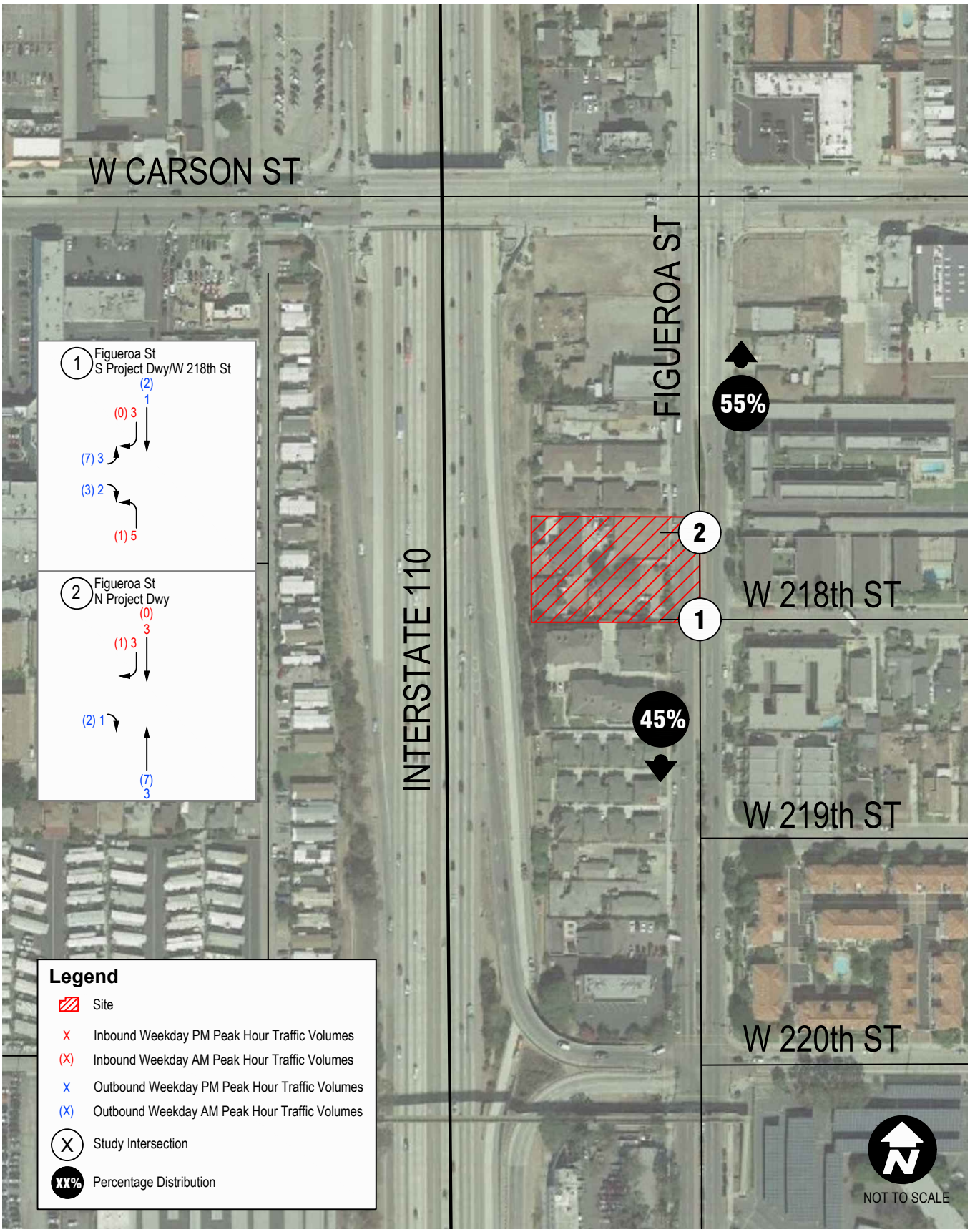

Source: Google Maps, 10/2016

Project Trip Distribution & Assignment

FIGURE 3

Birch Specific Plan

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LOS Worksheets (Synchro)

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	0	0	0	4	0	14	70	1	835	6	10	5	729	0
Future Vol, veh/h	0	0	0	4	0	14	70	1	835	6	10	5	729	0
Conflicting Peds, #/hr	11	0	9	0	0	14	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	5	0	16	81	1	971	7	12	6	848	0

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1549	2027	434	1608	2024	503	848	849	0	0	978	978	0	0
Stage 1	885	885	-	1139	1139	-	-	-	-	-	-	-	-	-
Stage 2	664	1142	-	469	885	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	77	57	570	70	57	514	416	785	-	-	343	701	-	-
Stage 1	306	361	-	214	274	-	-	-	-	-	-	-	-	-
Stage 2	416	273	-	544	361	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	60	44	565	57	44	507	419	419	-	-	405	405	-	-
Mov Cap-2 Maneuver	60	44	-	57	44	-	-	-	-	-	-	-	-	-
Stage 1	245	345	-	172	220	-	-	-	-	-	-	-	-	-
Stage 2	319	219	-	517	345	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	27.1	1.2	0.3
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	419	-	-	-	184	405	-	-
HCM Lane V/C Ratio	0.197	-	-	-	0.114	0.043	-	-
HCM Control Delay (s)	15.7	-	-	0	27.1	14.3	-	-
HCM Lane LOS	C	-	-	A	D	B	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	0	0	1	12	0	11	24	0	622	11	21	12	983	0
Future Vol, veh/h	0	0	1	12	0	11	24	0	622	11	21	12	983	0
Conflicting Peds, #/hr	6	0	2	0	0	1	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	13	0	12	27	0	691	12	23	13	1092	0

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1570	1921	548	1371	1915	358	1092	1092	0	0	703	703	0	0
Stage 1	1164	1164	-	751	751	-	-	-	-	-	-	-	-	-
Stage 2	406	757	-	620	1164	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	75	66	480	105	67	638	290	635	-	-	514	890	-	-
Stage 1	207	267	-	369	416	-	-	-	-	-	-	-	-	-
Stage 2	593	414	-	442	267	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	65	56	479	93	57	634	289	289	-	-	599	599	-	-
Mov Cap-2 Maneuver	65	56	-	93	57	-	-	-	-	-	-	-	-	-
Stage 1	188	250	-	335	377	-	-	-	-	-	-	-	-	-
Stage 2	524	375	-	413	250	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	32.3	0.7	0.4
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	289	-	-	479	157	599	-	-
HCM Lane V/C Ratio	0.092	-	-	0.002	0.163	0.061	-	-
HCM Control Delay (s)	18.7	-	-	12.5	32.3	11.4	-	-
HCM Lane LOS	C	-	-	B	D	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0	0.6	0.2	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	7	0	3	4	0	14	70	1	835	6	10	5	731	0
Future Vol, veh/h	7	0	3	4	0	14	70	1	835	6	10	5	731	0
Conflicting Peds, #/hr	11	0	9	0	0	14	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	3	5	0	16	81	1	971	7	12	6	850	0

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1551	2029	435	1609	2026	503	850	851	0	0	978	978	0	0
Stage 1	887	887	-	1139	1139	-	-	-	-	-	-	-	-	-
Stage 2	664	1142	-	470	887	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	77	57	569	70	57	514	414	783	-	-	343	701	-	-
Stage 1	305	360	-	214	274	-	-	-	-	-	-	-	-	-
Stage 2	416	273	-	543	360	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	60	44	564	57	44	507	415	415	-	-	405	405	-	-
Mov Cap-2 Maneuver	60	44	-	57	44	-	-	-	-	-	-	-	-	-
Stage 1	244	345	-	171	219	-	-	-	-	-	-	-	-	-
Stage 2	318	218	-	513	345	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	56	27.1	1.2	0.3
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	415	-	-	82	184	405	-	-
HCM Lane V/C Ratio	0.199	-	-	0.142	0.114	0.043	-	-
HCM Control Delay (s)	15.8	-	-	56	27.1	14.3	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.5	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	3	0	2	12	0	11	24	5	622	11	21	12	984	3
Future Vol, veh/h	3	0	2	12	0	11	24	5	622	11	21	12	984	3
Conflicting Peds, #/hr	6	0	2	0	0	1	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	0	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	13	0	12	27	6	691	12	23	13	1093	3

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	1585	1936	550	1384	1931	358	1097	1096	0	0	703	703	0	0
Stage 1	1167	1167	-	763	763	-	-	-	-	-	-	-	-	-
Stage 2	418	769	-	621	1168	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	73	65	479	103	65	638	288	633	-	-	514	890	-	-
Stage 1	206	266	-	363	411	-	-	-	-	-	-	-	-	-
Stage 2	583	409	-	442	266	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	63	55	478	90	55	634	317	317	-	-	599	599	-	-
Mov Cap-2 Maneuver	63	55	-	90	55	-	-	-	-	-	-	-	-	-
Stage 1	185	250	-	326	369	-	-	-	-	-	-	-	-	-
Stage 2	511	368	-	412	250	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.4	33.2	0.8	0.4
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	317	-	-	97	153	599	-	-
HCM Lane V/C Ratio	0.102	-	-	0.057	0.167	0.061	-	-
HCM Control Delay (s)	17.6	-	-	44.4	33.2	11.4	-	-
HCM Lane LOS	C	-	-	E	D	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	0.6	0.2	-	-

Average Daily Traffic and Peak Hour Turn Movement Counts

Prepared by NDS/ATD

VOLUME

Figueroa St N/O W 218 St

Day: Wednesday
Date: 10/25/2017

City: Carson
Project #: CA17_5702_001

DAILY TOTALS	NB	SB	EB	WB	Total
	9,122	12,187	0	0	21,309

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	14		48				62		12:00	135		165				300	
00:15	13		37				50		12:15	103		188				291	
00:30	20		25				45		12:30	127		174				301	
00:45	10	57	18	128			28	185	12:45	117	482	166	693			283	1175
01:00	8		28				36		13:00	121		195				316	
01:15	8		23				31		13:15	122		169				291	
01:30	10		24				34		13:30	124		172				296	
01:45	13	39	15	90			28	129	13:45	136	503	185	721			321	1224
02:00	9		18				27		14:00	99		172				271	
02:15	12		15				27		14:15	149		189				338	
02:30	7		19				26		14:30	160		196				356	
02:45	7	35	19	71			26	106	14:45	161	569	187	744			348	1313
03:00	9		19				28		15:00	222		181				403	
03:15	6		14				20		15:15	237		220				457	
03:30	10		18				28		15:30	349		234				583	
03:45	11	36	23	74			34	110	15:45	237	1045	222	857			459	1902
04:00	8		17				25		16:00	207		217				424	
04:15	11		22				33		16:15	152		244				396	
04:30	18		35				53		16:30	192		272				464	
04:45	22	59	35	109			57	168	16:45	154	705	215	948			369	1653
05:00	31		53				84		17:00	144		257				401	
05:15	27		47				74		17:15	183		286				469	
05:30	60		74				134		17:30	144		207				351	
05:45	65	183	72	246			137	429	17:45	149	620	209	959			358	1579
06:00	48		90				138		18:00	154		198				352	
06:15	92		90				182		18:15	139		217				356	
06:30	100		75				175		18:30	110		183				293	
06:45	104	344	77	332			181	676	18:45	121	524	186	784			307	1308
07:00	134		128				262		19:00	93		182				275	
07:15	159		128				287		19:15	90		156				246	
07:30	162		139				301		19:30	77		165				242	
07:45	207	662	186	581			393	1243	19:45	57	317	133	636			190	953
08:00	217		203				420		20:00	69		133				202	
08:15	230		234				464		20:15	99		129				228	
08:30	210		127				337		20:30	75		132				207	
08:45	141	798	133	697			274	1495	20:45	59	302	144	538			203	840
09:00	140		142				282		21:00	51		110				161	
09:15	116		136				252		21:15	69		125				194	
09:30	119		117				236		21:30	50		113				163	
09:45	122	497	147	542			269	1039	21:45	56	226	125	473			181	699
10:00	91		117				208		22:00	41		117				158	
10:15	104		150				254		22:15	41		121				162	
10:30	89		145				234		22:30	38		87				125	
10:45	106	390	177	589			283	979	22:45	37	157	85	410			122	567
11:00	102		143				245		23:00	31		74				105	
11:15	122		150				272		23:15	29		88				117	
11:30	117		166				283		23:30	29		109				138	
11:45	112	453	179	638			291	1091	23:45	30	119	56	327			86	446
TOTALS		3553		4097				7650	TOTALS		5569		8090				13659
SPLIT %		46.4%		53.6%				35.9%	SPLIT %		40.8%		59.2%				64.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	9,122	12,187	0	0	21,309

AM Peak Hour	07:45	07:30	07:45	PM Peak Hour	15:00	16:30	15:15
AM Pk Volume	864	762	1614	PM Pk Volume	1045	1030	1923
Pk Hr Factor	0.939	0.814	0.870	Pk Hr Factor	0.749	0.900	0.825
7 - 9 Volume	1460	1278	2738	4 - 6 Volume	1325	1907	3232
7 - 9 Peak Hour	07:45	07:30	07:45	4 - 6 Peak Hour	16:00	16:30	16:30
7 - 9 Pk Volume	864	762	1614	4 - 6 Pk Volume	705	1030	1703
Pk Hr Factor	0.939	0.814	0.870	Pk Hr Factor	0.851	0.900	0.908

Prepared by National Data & Surveying Services

Figueroa St & W 218th St

Peak Hour Turning Movement Count

ID: 17-05701-001
City: Carson

Day: Wednesday
Date: 10/25/2017

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Figueroa St — SOUTHBOUND

AM	0	729	5	10	859	AM
NOON	0	0	0	0	0	NOON
PM	0	983	12	21	654	PM
	0	2	1	0		

W 218th St — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
AM	NOON	PM	

W 218th St — WESTBOUND

PM	NOON	AM	
11	0	14	0
0	0	0	1
12	0	4	0
0	0	0	0
23	0	11	
PM	NOON	AM	

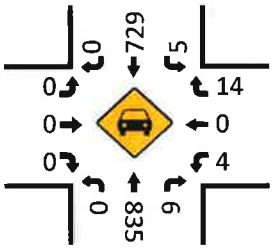
CONTROL: No Control

TEV	1673 AM	0 NOON	1696 PM
PHF	0.86		0.90

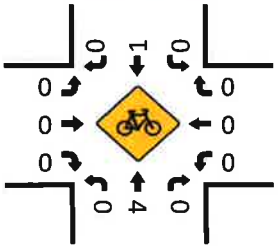
Figueroa St — NORTHBOUND

PM	1019	24	0	622	11	PM
NOON	0	0	0	0	0	NOON
AM	803	70	0	835	6	AM
	0	1	2	0		

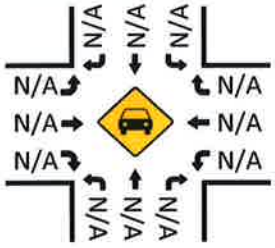
Total Vehicles (AM)



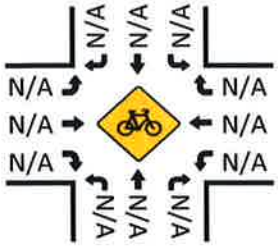
Bikes (AM)



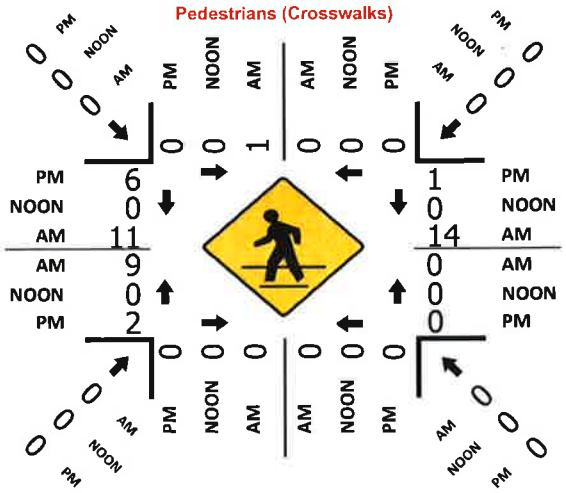
Total Vehicles (Noon)



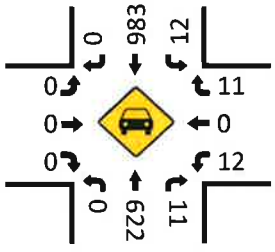
Bikes (NOON)



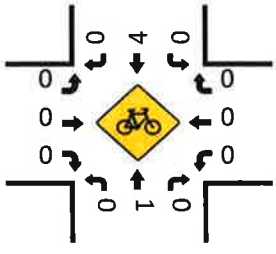
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & W 218th St
City: Carson
Control: No Control

Project ID: 17-05701-001
Date: 10/25/2017

Total

NS/EW Streets:	Figueroa St				Figueroa St				W 218th St				W 218th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	122	1	5	0	124	0	2	0	0	0	0	0	0	4	0	258
7:15 AM	0	146	1	5	1	131	0	0	0	0	0	0	6	0	4	0	294
7:30 AM	0	147	1	2	0	132	0	1	0	0	0	0	3	0	6	0	292
7:45 AM	0	193	2	15	1	178	0	3	0	0	0	0	1	0	4	0	397
8:00 AM	0	206	0	15	4	200	0	1	0	0	0	0	2	0	5	0	433
8:15 AM	0	225	1	29	0	223	0	6	0	0	0	0	0	0	3	0	487
8:30 AM	0	211	3	11	0	128	0	0	0	0	0	0	1	0	2	0	356
8:45 AM	0	129	1	3	3	120	0	2	0	0	0	0	2	0	2	0	262
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1379	10	85	9	1236	0	15	0	0	0	0	15	0	30	0	2779
APPROACH %'s :	0.00%	93.55%	0.68%	5.77%	0.71%	98.10%	0.00%	1.19%					33.33%	0.00%	66.67%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	835	6	70	5	729	0	10	0	0	0	0	4	0	14	0	1673
PEAK HR FACTOR :	0.000	0.928	0.500	0.603	0.313	0.817	0.000	0.417	0.000	0.000	0.000	0.000	0.500	0.000	0.700	0.000	0.859
		0.893				0.812								0.643			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	181	1	4	2	207	0	9	0	0	0	0	0	0	0	0	404
4:15 PM	0	144	3	7	6	227	0	4	0	0	0	0	1	0	2	0	394
4:30 PM	0	185	3	5	3	263	0	2	0	0	0	0	5	0	3	0	469
4:45 PM	0	140	5	5	4	203	0	4	0	0	0	0	2	0	1	0	364
5:00 PM	0	135	0	7	4	253	0	7	0	0	0	0	2	0	3	0	411
5:15 PM	0	162	3	7	1	264	0	8	0	0	0	0	3	0	4	0	452
5:30 PM	0	128	2	6	4	200	0	7	0	0	0	0	2	0	4	0	353
5:45 PM	0	146	3	4	3	200	0	7	0	0	0	0	2	0	4	0	369
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1221	20	45	27	1817	0	48	0	0	0	0	17	0	21	0	3216
APPROACH %'s :	0.00%	94.95%	1.56%	3.50%	1.43%	96.04%	0.00%	2.54%					44.74%	0.00%	55.26%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	622	11	24	12	983	0	21	0	0	0	0	12	0	11	0	1696
PEAK HR FACTOR :	0.000	0.841	0.550	0.857	0.750	0.931	0.000	0.656	0.000	0.000	0.000	0.000	0.600	0.000	0.688	0.000	0.904
		0.851				0.930								0.719			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & W 218th St
City: Carson
Control: No Control

Project ID: 17-05701-001
Date: 10/25/2017

Bikes

NS/EW Streets:	Figueroa St				Figueroa St				W 218th St				W 218th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
		0.500				0.250											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	5	0	1	0	5	0	0	0	0	0	0	0	0	0	0	11
APPROACH %'s :	0.00%	83.33%	0.00%	16.67%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
		0.250				0.500											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & W 218th St
City: Carson
Project ID: 17-5701-001
Date: 10/25/2017

Pedestrians (Crosswalks)

NS/EW Streets:	Figueroa St		Figueroa St		W 218th St		W 218th St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	1	0	1
7:15 AM	0	1	0	0	0	0	0	1	2
7:30 AM	0	0	0	0	0	4	0	0	4
7:45 AM	0	0	0	0	0	6	1	4	11
8:00 AM	0	0	0	0	0	7	6	4	17
8:15 AM	0	0	0	0	0	1	2	2	5
8:30 AM	1	0	0	0	0	0	0	1	2
8:45 AM	0	0	0	0	0	0	0	1	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	1	0	0	0	18	10	13	43
APPROACH %'s :	50.00%	50.00%			0.00%	100.00%	43.48%	56.52%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	1	0	0	0	0	14	9	11	35
PEAK HR FACTOR :	0.250					0.500	0.375	0.688	0.515
	0.250				0.500		0.500		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	2	1	2	5
4:15 PM	0	0	0	0	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	2	3
5:00 PM	0	0	0	0	0	0	1	1	2
5:15 PM	0	0	0	0	0	1	0	3	4
5:30 PM	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	2	2	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	6	6	8	20
APPROACH %'s :					0.00%	100.00%	42.86%	57.14%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	1	2	6	9
PEAK HR FACTOR :						0.250	0.500	0.500	0.563
					0.250		0.667		


101 DWY 1
201 DWY 2

Prepared by National Data & Surveying Services

Figueroa St & Dwy 1

Peak Hour Turning Movement Count

ID: 17-05701-101
City: Carson

Day: Wednesday
Date: 10/25/2017

PEAK HOURS

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:30 PM - 05:30 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

CONTROL: No Control

	AM	NOON	PM
TEV	5	0	9
PHF	0.42		0.45

Figueroa St — SOUTHBOUND

	Left	Thru	Thru	Right	U-Turn	
AM	1	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	4	0	0	0	0	PM

Dwy 1 — EASTBOUND

AM	NOON	PM	
1	0	5	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 1
4	0	4	↷ 0
AM	NOON	PM	

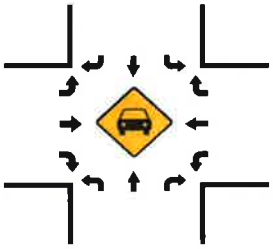
Dwy 1 — WESTBOUND

PM	NOON	AM	
0	0	0	↰ 0
0	0	0	← 0
0	0	0	↶ 0
0	0	0	↷ 0
0	0	0	⇨
PM	NOON	AM	

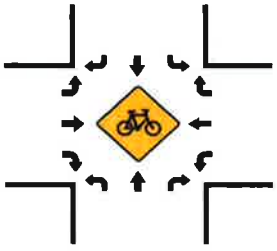
NORTHBOUND — Figueroa St

	U-Turn	Thru	Thru	Left	
PM	4	0	1	0	0	PM
NOON	0	0	0	0	0	NOON
AM	4	0	0	0	0	AM

Total Vehicles (AM)



Bikes (AM)



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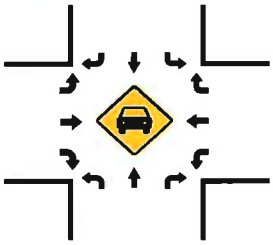
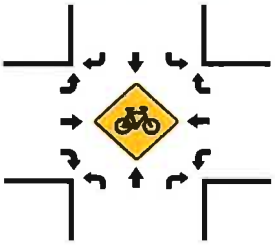
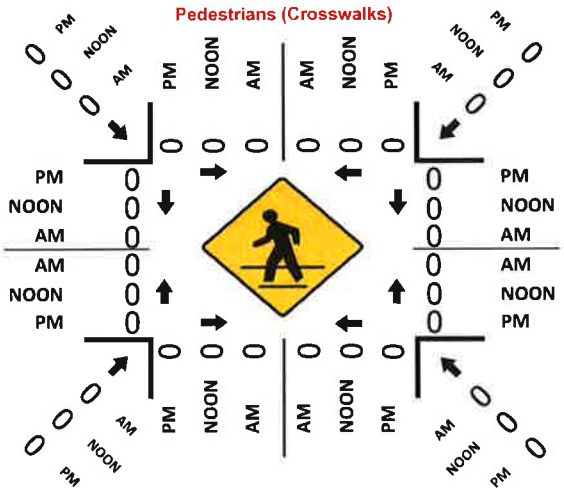


Bikes (NOON)



Pedestrians (Crosswalks)



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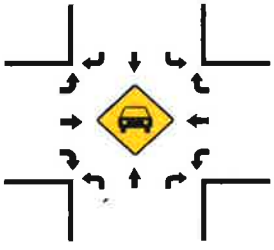
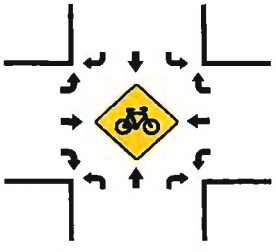


Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & Dwy 1
City: Carson
Control: No Control

Project ID: 17-05701-101
Date: 10/25/2017

Total

NS/EW Streets:	Figueroa St				Figueroa St				Dwy 1				Dwy 1				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	1	0	4	0	0	0	0	0	7
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	20.00%	0.00%	80.00%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.417
					0.250				0.500								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	4	0	0	0	5	0	0	0	0	0	10
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%					
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	9
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.333	0.000	0.000	0.000	0.000	0.000	0.450
			0.250				0.500				0.333						

Prepared by National Data & Surveying Services

Figueroa St & Dwy 2

Peak Hour Turning Movement Count

ID: 17-05701-201
City: Carson

Day: Wednesday
Date: 10/25/2017

PEAK HOURS

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND — Figueroa St

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — Dwy 2

AM	NOON	PM	
1	0	0	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 1
0	0	1	↷ 0
AM	NOON	PM	

WESTBOUND — Dwy 2

PM	NOON	AM	
0	0	0	↶ 0
0	0	0	← 0
0	0	0	↰ 0
0	0	0	↷ 0
0	0	0	⇨
PM	NOON	AM	

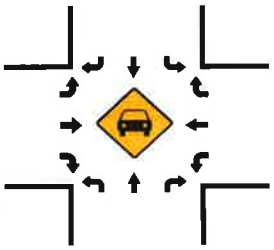
CONTROL: No Control

	AM	NOON	PM
TEV	1	0	1
PHF	0.25		0.25

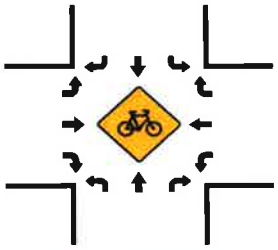
NORTHBOUND — Figueroa St

PM	1	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	1	0	0	AM

Total Vehicles (AM)



Bikes (AM)



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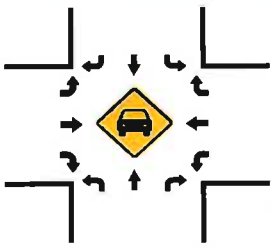
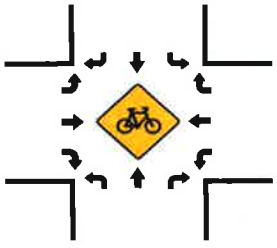
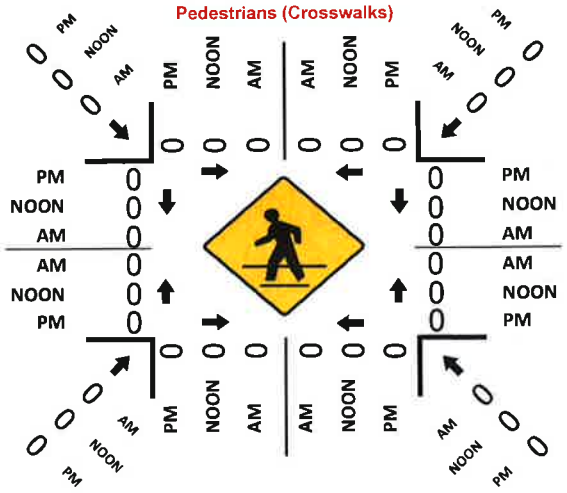


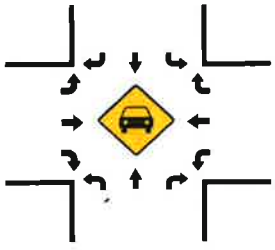
Bikes (NOON)



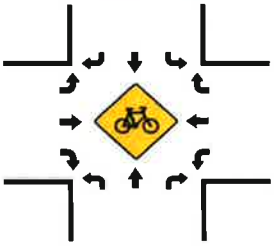
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & Dwy 2
City: Carson
Control: No Control

Project ID: 17-05701-201
Date: 10/25/2017

Total

NS/EW Streets:	Figueroa St				Figueroa St				Dwy 2				Dwy 2				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%													
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
	0.250																

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
APPROACH %'s :									0.00%	0.00%	100.00%	0.00%					
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250
									0.250								

APPENDIX G

Sewer Area Study

SEWER AREA STUDY

FOR: TENTATIVE TRACT NO. 76070

SITE ADDRESS: 21809,21811 FIGUEROA ST.,
CARSON, CA 90745

Owner: Real Quest Holding Llc
3129 S Hacienda Blvd. #649,
Hacienda Heights, CA 91745
Tel: (626) 271-5322

Prepared by: Apple Engineering Group
9080 Telstar Ave., Suite 309
El Monte, CA 91731
Tel: (626) 552-8198
Email: info@appleengineering.net
Apple Job No. P17052

August 24, 2017

Table of Contents

1.0 Introduction

The following Area study has been prepared by Apple Engineering Group. to determine and show.

a) The capacity of the existing sewer segments from proposed development site to the Los Angeles County Sanitation District (LACSD) maintained trunk sewers.
b) The existing sewer facility adequately service the proposed development.

2.0 Site Description

Project address is 21809, 21811 Figueroa St., Carson, CA 90745 (Thomas Guide 764-B7). Project site is located approximately 465' South of the centerline of Carson St.

3.0 Project Description

This is a 32-unit condominium subdivision project, the current site has 2 existing sewer laterals between manhole no. 39 and no. 40 which will be protected in place, per sewer maintenance map no. S-1705. The end point of this sewer study will connect to a 48" LACO sewer trunk.

4.0 Sewer Pipe Capacity Analysis

The existing sewer pipes which will serve the project site are 8" VCPs, see attached as-built sewer plans (C.I. 1187). The system is analyzed per Los Angeles County Standard S-C4 for a maximum design depth at 1/2 full (For pipes diameter < 15").

The design capacity for the existing pipe was obtained by using Kutter's Formula with "n=0.013" as show in the flow diagram for the design of circular sanitary sewer system (Please refer to Appendix B for Kutter's Formula Calculation Results).

The tributary sewer flow rate (Q) for the studied sewer lines are analyzed based on County standards are as follows:
Q=ZA.
A ------ Tributary Area (Acre)
Z ------ Zoning Coefficient (Using LA County coefficients in appendix B)

Tributary areas were calculated using the Los Angeles County Public Works DGN underlay files. referenced attached Sewer Area Index Map in Appendix B for the tributary areas and their corresponding zoning coefficients.

5.0 Conclusion

Based on the calculated flow over 1/2 full (For 8") pipe capacity from flow master calculator, Since all results are below 150%, it is concluded that the existing sewer line from project site to the trunk line can accommodate the cumulative calculated flow.

Therefore conclude that the existing sewer have adequate capacity for the proposed development and **further mitigation is NOT required.**

For area calculation and tabulated results, see appendix A.

NOTE FOR SEWER AREA STUDY TABLE:
1. PER KUTTER'S FORMULA WITH n=0.013;
2. BASED ON CURRENT LAND USE AND COEFFICIENTS PROVIDED BY LOS ANGELES COUNTY (CFS/AC)

APPENDIX A - SEWER CAPACITY CALCULATIONS

Sewer Area Study Table

Street Name	Segment		Pipe		*Capacity (cfs)		Tributary Area (Acres)	Zoning		Calculated Flow (cfs)	**Cumulative Flow (cfs)	Cumulative Depth (in.)		PC or CI Construction Plan #	Jurisdiciton	% Full	
	M.H. #	M.H. #	Size (in.)	Slope (%)	1/2 Full(<15")	3/4 Full(>15")		Zone	Zoning Coeff.			(ft)	(in)			*** Flow Depth/ (0.5 X Pipe Dia.)	Cumulative Flow / Capacity
Figueroa St.	Upstream	40	8"	0.24%	0.30		1.17	Mixed Use	0.016	0.0187	0.0187	0.081	0.97	C.I.1187	Carson, CA	24.30%	6.22%
			8"	0.24%	0.30		1.56	25-UN/AC	0.025	0.0390	0.0577	0.140	1.68	C.I.1187	Carson, CA	42.00%	19.19%
	40	41	8"	0.24%	0.30		1.47	25-UN/AC	0.025	0.0367	0.0944	0.179	2.15	C.I.1187	Carson, CA	53.70%	31.40%
	41	42	8"	0.24%	0.30		4.18	25-UN/AC	0.025	0.1045	0.1989	0.265	3.18	C.I.1187	Carson, CA	79.50%	66.13%
			8"	0.24%	0.30		1.68	C-4	0.015	0.0252	0.2241	0.283	3.40	C.I.1187	Carson, CA	84.90%	74.51%
			Finger of God Goodnews Ministry Church 150(seats)*5(gal/seat)*2.5(peak flow)/646316.5=							0.0029	0.2270	0.285	3.42	C.I.1187	Carson, CA	85.50%	75.48%
220th St.	42	29	8"	0.24%	0.30		1.34	R-1	0.004	0.0054	0.2324	0.289	3.47	C.I.1187	Carson, CA	86.70%	77.26%
			Stephen M White Middle School 1669(students)*10(gal/student)*2.5(peak flow)/646316.5=							0.0646	0.2969	0.332	3.98	C.I.1187	Carson, CA	99.60%	98.73%
Figueroa St.	29	30	8"	0.32%	0.35		4.13	25-UN/AC	0.025	0.1032	0.4001	0.365	4.38	C.I.1187	Carson, CA	109.50%	115.22%
			8"	0.32%	0.35		1.32	R-1	0.004	0.0053	0.4054	0.368	4.42	C.I.1187	Carson, CA	110.40%	116.74%
	30	35	8"	0.32%	0.35		1.03	25-UN/AC	0.025	0.0257	0.4312	0.382	4.58	C.I.1187	Carson, CA	114.60%	124.15%
			8"	0.32%	0.35		1.35	R-1	0.004	0.0054	0.4366	0.385	4.62	C.I.1187	Carson, CA	115.50%	125.71%
	35	36	8"	0.32%	0.35		4.20	25-UN/AC	0.025	0.1050	0.5415	0.445	5.34	C.I.1187	Carson, CA	133.50%	155.93%
	36	37	8"	0.32%	0.35		0.66	Mixed Use	0.016	0.0106	0.5521	0.452	5.42	C.I.1187	Carson, CA	135.60%	158.97%
Carson St.	37	Trunk	8"	4.76%	1.34		0.00	N/A	0.004	0.0000	0.5521	0.206	2.47	C.I.1187	Carson, CA	61.80%	41.22%

* Calculated using Kutter's Formula with n=0.013 (as in S-C4 graph in PC Procedural Manual)

** Based on current land use and coefficients per LA County, (Attach supporting calculations)

APPENDIX B - REFERENCES

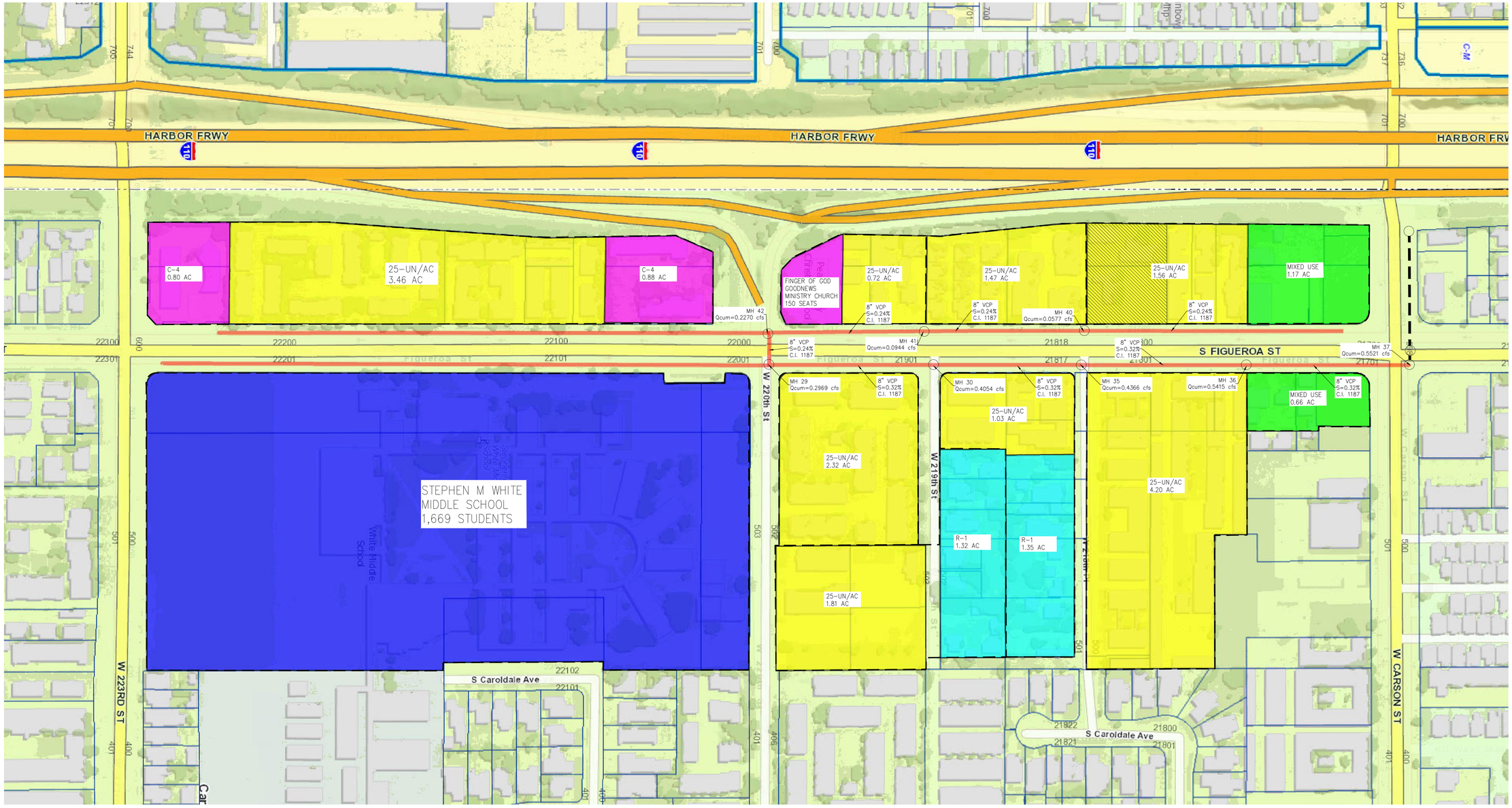
1. Sewer Area Map
2. Los Angeles County Zoning Coefficient Manual
3. Kutter's Formula Calculator Results
4. Tentative Tract Map & Exhibit Map (Project Site)
5. Consolidated County Sewer Maintenance District Map
6. As Built Cross-sections for Existing Sewer Mains

1. Sewer Area Map

SCA□E□□"□□□□

□EGE□D□

- □□U□□AC RESIDE□TIA□ □O□E
- C□ COMMERCIA□ □O□E
- MIXED USE □O□E
- R□ RESIDE□TIA□ □O□E
- PROJECT □OCATIO□



2. Los Angeles County Zoning Coefficient Manual

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

AREA STUDY

An area study must be made for all private contract sewer projects. See attached sample. The area study must include the following items:

1. Area being served - In Acres
2. Determined Tributary area to main line being designed (incl. areas of future devel.)- In Acres
3. Existing and Land Use Zoning
4. Anticipated Sewer Discharge in cfs of total area based on zoning, and/or heavy water users
5. Existing or proposed utilities if in conflict
6. Existing and proposed sewers showing pipe size and grade leading up to the trunk line in order for you to evaluate the impact of your proposed development on the existing system
7. Direction of sewer flow
8. Contour lines
9. Scale not to be less than 1"=600'
10. North arrow pointing up or to the left

ZONING COEFFICIENTS

ZONE	COEFFICIENT (cfs/Acre)
Agriculture	0.001
Residential	
R-1	0.004
R-2	0.008
R-3	0.012
R-4	0.016 *
Commerical	
C-1 through C-4	0.015 *
Heavy Industrial	
M-1 through M-4	0.021 *

* Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown.

The coefficient to be used for any zoned areas not listed will be determined by the County based upon the intended development and use.

The County shall determine which of the coefficients or combination of coefficients shall be used for design as determined by the established or proposed zoning in the study area. Any modifications to these coefficients due to topography, development, or hazard areas, shall be approved by the Department of Public Works.

Estimated Average Daily Sewage Flows for Various Occupancies

Occupancy	Abbreviation	*Average daily flow	
Apartment Buildings:			
Bachelor or Single dwelling units	Apt	100	gal/D.U. → 150
1 bedroom dwelling units	Apt	150	gal/D.U. → 200
2 bedroom dwelling units	Apt	200	gal/D.U. → 250
3 bedroom or more dwelling units	Apt	250	gal/D.U. → use 300 GPD per SMD
Auditoriums, churches, etc.	Aud	5	gal/seat
Automobile parking	P	25	gal/1000 sq ft gross floor area
Bars, cocktails lounges, etc.	Bar	20	gal/seat
Commercial Shops & Stores	CS	100	gal/1000 sq ft gross floor area
Hospitals (surgical)	HS	500	gal/bed
Hospitals (convalescent)	HC	85	gal/bed
Hotels	H	150	gal/room
Medical Buildings	MB	300	gal/1000 sq ft gross floor area
Motels	M	150	gal/unit
Office Buildings	Off	200	gal/1000 sq ft gross floor area
Restaurants, cafeterias, etc.	R	50	gal/seat
Schools:			
Elementary or Jr. High	S	10	gal/student
High Schools	HS	15	gal/student
Universities or Colleges	U	20	gal/student
College Dormitories	CD	85	gal/student

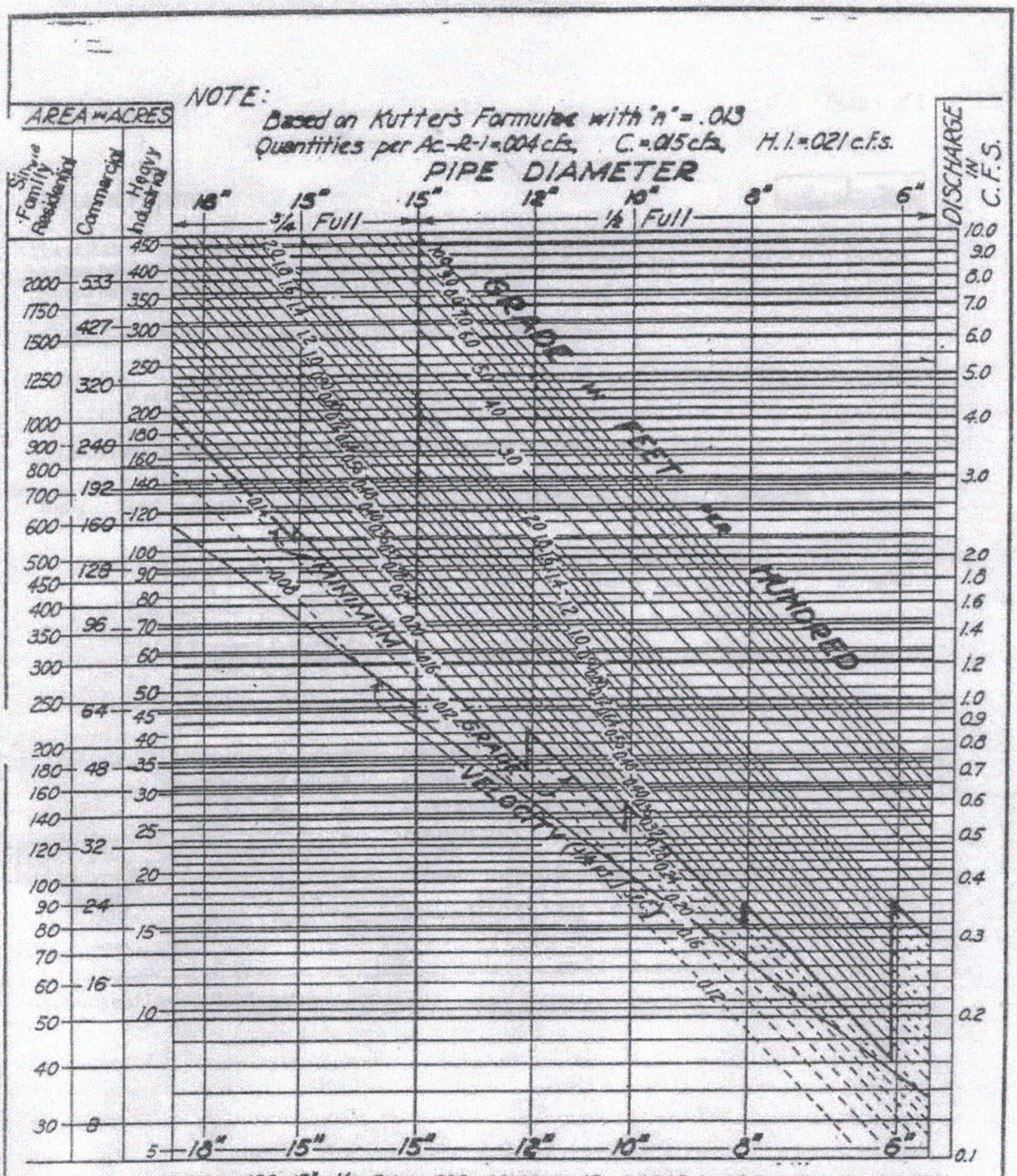
*Multiply the average daily flow by 2.5 to obtain the peak flow

Zoning Coefficients

Zone	Coefficient (cfs/Acre)
Agriculture	**0.001**
Residential+:	
R-1	**0.004**
R-2	**0.008**
R-3	**0.012**
R-4	**0.016***
Commercial:	
C-1 through C-4	**0.015***
Heavy Industrial:	
M1 through M-4	**0.021***

***Individual building, commercial or industrial plant capacities shall be the determining factor when they exceed the coefficients shown**

+ Use 0.001 (cfs/unit) for condominiums only



NOTE: USE 15"-1/2 FULL FOR COMPUTING DESIGN CAPACITY OF A NEW SEWER SYSTEM. USE 15"-3/4" FULL FOR CHECKING CAPACITY OF EXIST. SEWER SYSTEM.

FLOW DIAGRAM FOR THE DESIGN OF CIRCULAR SANITARY SEWERS

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

ASSISTANT DEPUTY

COUNTY ENGINEER

COUNTY ENGINEER STANDARD S-C4

DATE: 3/80

DESIGN RCE 10443

47 5

Kutter's Formula

The standard form of Kutter's Formula is known as the Chézy Formula. Kutter's Formula is widely used in sanitary sewer design and analysis. The roughness component, *C*, is variable and is a function of *R*, *S*, and the channel material. Both *x* and *y* are equal to 1/2.

Equations for U.S. customary units and the S.I. system are shown below:

$$V = C\sqrt{RS} \tag{5.6}$$

The roughness coefficient C is related to Manning's *n* through Kutter's formula.

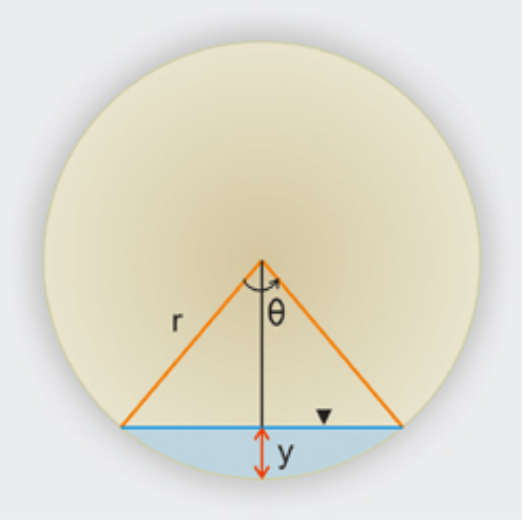
Note: **Kutter's roughness coefficients are the same as Manning's roughness coefficients.**

$$C = \frac{k_1 + \frac{k_2}{S} + \frac{k_3}{n}}{1 + \frac{n}{\sqrt{R}} \cdot \left(k_1 + \frac{k_2}{S}\right)} \tag{5.7}$$

Where	C	=	Chézy's roughness coefficient ($m^{1/2}$/sec., $ft^{1/2}$/sec.)
	S	=	Friction slope (m/m, ft/ft)
	R	=	Hydraulic roughness (unitless)
	n	=	Kutter's roughness (unitless)
	k_1	=	Constant (23.0 SI, 41.65 U.S. customary)
	k_2	=	Constant (0.00155 SI, 0.00281 U.S. customary)
	k_3	=	Constant (1.0 SI, 1.811 U.S. customary)

3. Kutter's Formula Calculator Results

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.0187 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.024 ft^2

Wetted perimeter P: 0.476 ft

Hydraulic radius R: 0.050 ft

Relative depth y/D: 0.121

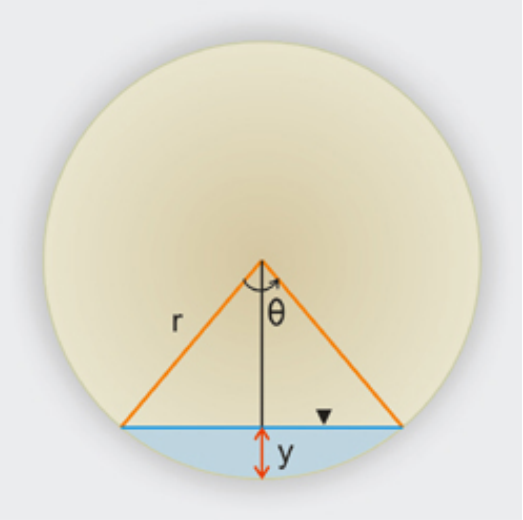
Froude number [based on y]: 0.476

OUTPUT:

Flow depth y: 0.081 ft

Flow velocity V: 0.770 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.0577 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.053 ft^2

Wetted perimeter P: 0.637 ft

Hydraulic radius R: 0.084 ft

Relative depth y/D: 0.209

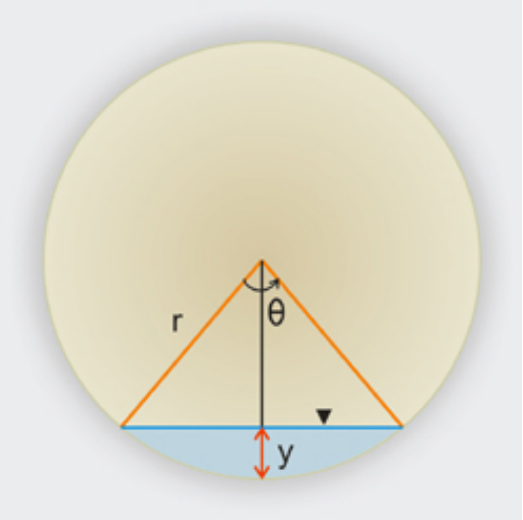
Froude number [based on y]: 0.506

OUTPUT:

Flow depth y: 0.140 ft

Flow velocity V: 1.075 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.0944 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.076 ft^2

Wetted perimeter P: 0.729 ft

Hydraulic radius R: 0.104 ft

Relative depth y/D: 0.268

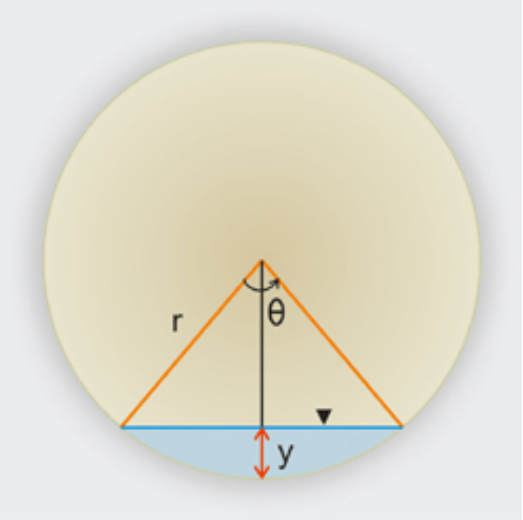
Froude number [based on y]: 0.516

OUTPUT:

Flow depth y: 0.179 ft

Flow velocity V: 1.240 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.2241 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.142 ft^2

Wetted perimeter P: 0.949 ft

Hydraulic radius R: 0.149 ft

Relative depth y/D: 0.423

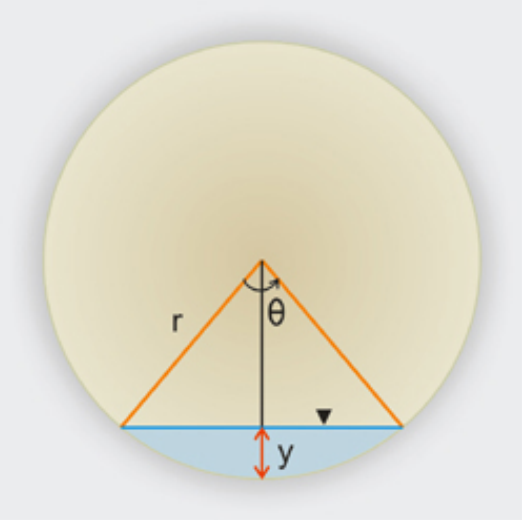
Froude number [based on y]: 0.522

OUTPUT:

Flow depth y: 0.283 ft

Flow velocity V: 1.578 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.2270 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.143 ft^2

Wetted perimeter P: 0.953 ft

Hydraulic radius R: 0.150 ft

Relative depth y/D: 0.426

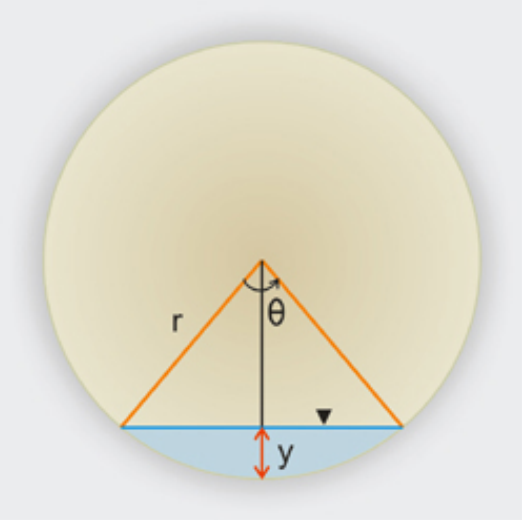
Froude number [based on y]: 0.522

OUTPUT:

Flow depth y: 0.285 ft

Flow velocity V: 1.583 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.2270 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.143 ft^2

Wetted perimeter P: 0.953 ft

Hydraulic radius R: 0.150 ft

Relative depth y/D: 0.426

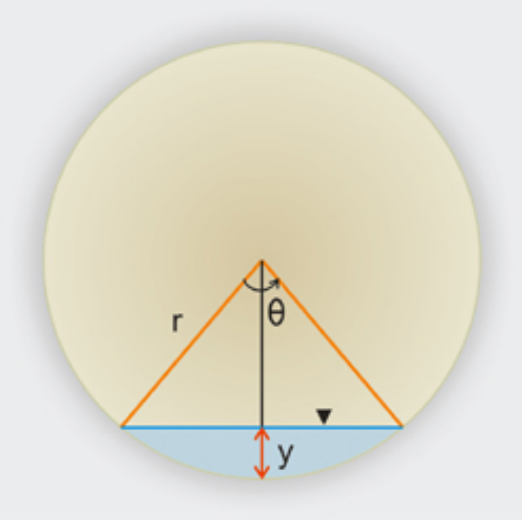
Froude number [based on y]: 0.522

OUTPUT:

Flow depth y: 0.285 ft

Flow velocity V: 1.583 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.2324 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.145 ft^2

Wetted perimeter P: 0.961 ft

Hydraulic radius R: 0.151 ft

Relative depth y/D: 0.432

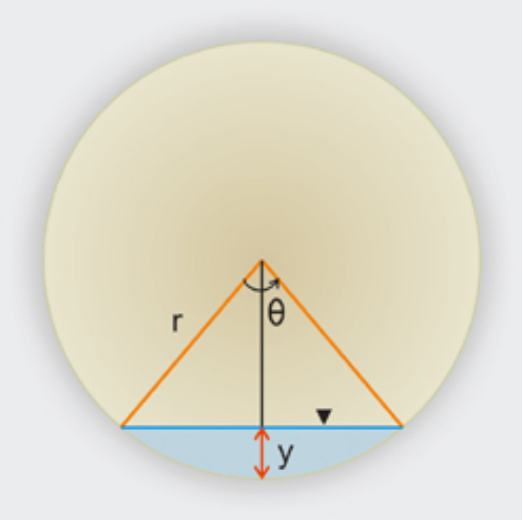
Froude number [based on y]: 0.522

OUTPUT:

Flow depth y: 0.289 ft

Flow velocity V: 1.593 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.2969 cfs

Bottom slope S: 0.0024 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.174 ft^2

Wetted perimeter P: 1.048 ft

Hydraulic radius R: 0.166 ft

Relative depth y/D: 0.496

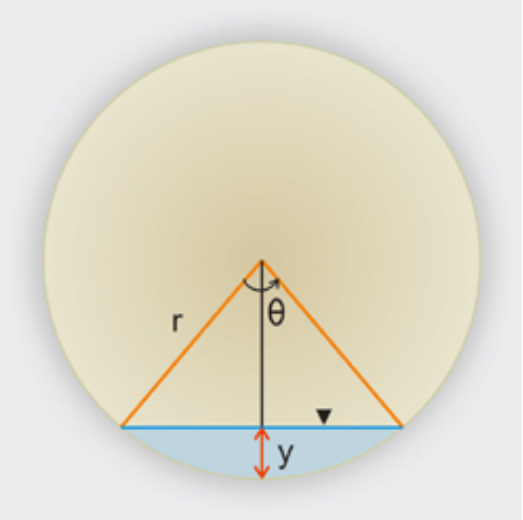
Froude number [based on y]: 0.518

OUTPUT:

Flow depth y: 0.332 ft

Flow velocity V: 1.697 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.4001 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.196 ft^2

Wetted perimeter P: 1.113 ft

Hydraulic radius R: 0.176 ft

Relative depth y/D: 0.545

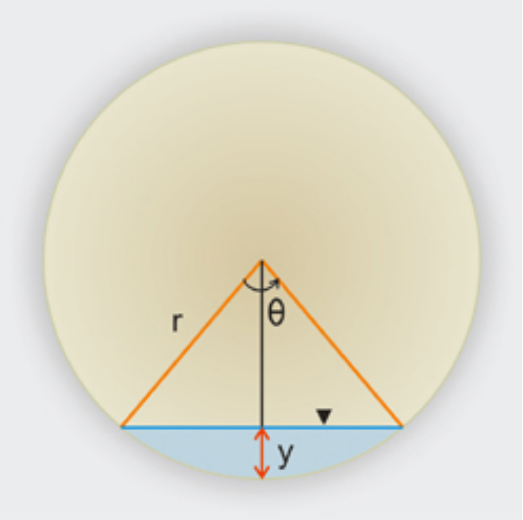
Froude number [based on y]: 0.593

OUTPUT:

Flow depth y: 0.365 ft

Flow velocity V: 2.035 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.4054 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.198 ft^2

Wetted perimeter P: 1.119 ft

Hydraulic radius R: 0.177 ft

Relative depth y/D: 0.549

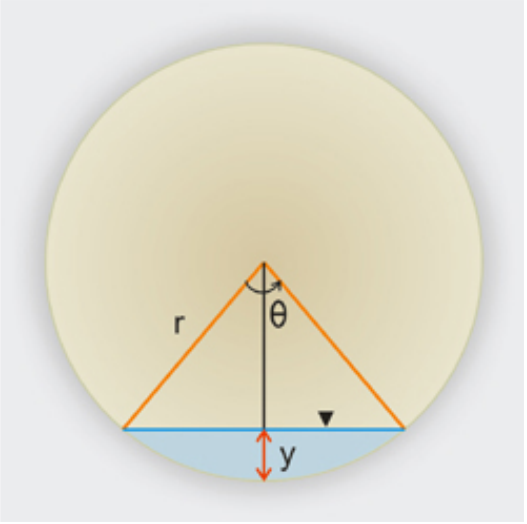
Froude number [based on y]: 0.593

OUTPUT:

Flow depth y: 0.368 ft

Flow velocity V: 2.041 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.4312 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.208 ft^2

Wetted perimeter P: 1.148 ft

Hydraulic radius R: 0.181 ft

Relative depth y/D: 0.571

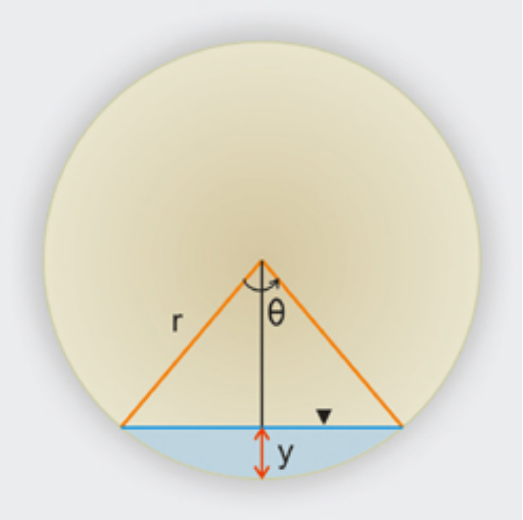
Froude number [based on y]: 0.590

OUTPUT:

Flow depth y: 0.382 ft

Flow velocity V: 2.071 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.4366 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.210 ft^2

Wetted perimeter P: 1.154 ft

Hydraulic radius R: 0.182 ft

Relative depth y/D: 0.575

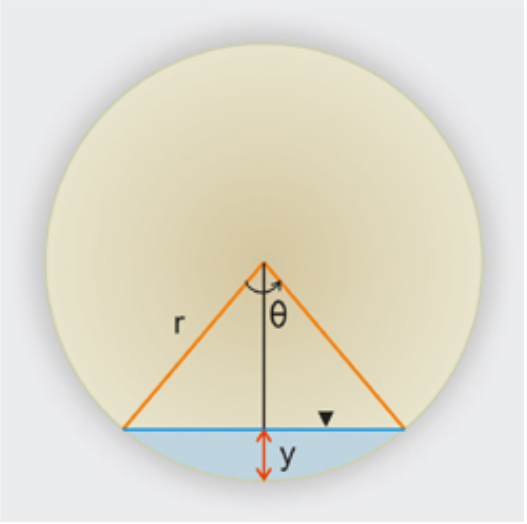
Froude number [based on y]: 0.589

OUTPUT:

Flow depth y: 0.385 ft

Flow velocity V: 2.077 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.5415 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.249 ft^2

Wetted perimeter P: 1.278 ft

Hydraulic radius R: 0.194 ft

Relative depth y/D: 0.665

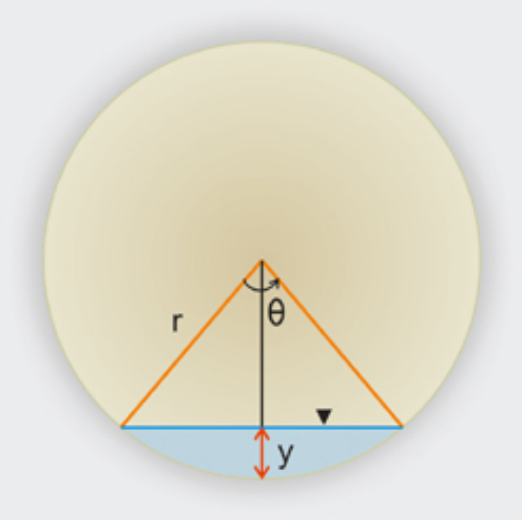
Froude number [based on y]: 0.573

OUTPUT:

Flow depth y: 0.445 ft

Flow velocity V: 2.173 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)\,AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.5521 cfs

Bottom slope S: 0.0032 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.253 ft^2

Wetted perimeter P: 1.291 ft

Hydraulic radius R: 0.195 ft

Relative depth y/D: 0.674

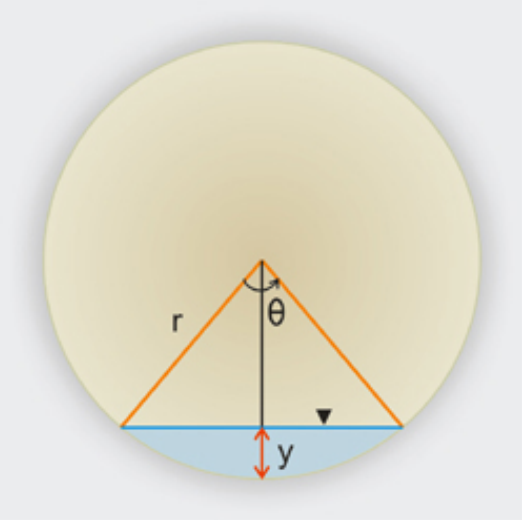
Froude number [based on y]: 0.572

OUTPUT:

Flow depth y: 0.452 ft

Flow velocity V: 2.181 fps

onlinechannel06.php: Normal depth in a partially full circular culvert



Formulas

$$\theta = 2\cos^{-1}[1 - 2(y/D)]$$

$$A = (D^2/8)(\theta - \sin\theta)$$

$$P = r\theta$$

$$R = A/P$$

$$Q = (k/n)AR^{2/3}S^{1/2}$$

$$V = Q/A$$

INPUT DATA:

Select: SI units (metric) / U.S. Customary units

Pipe diameter D: 0.67 ft

Discharge Q: 0.5521 cfs

Bottom slope S: 0.0476 ft/ft

Manning's n: 0.013

INTERMEDIATE CALCS:

Constant k: 1.486

Flow area A: 0.092 ft^2

Wetted perimeter P: 0.789 ft

Hydraulic radius R: 0.117 ft

Relative depth y/D: 0.308

Froude number [based on y]: 2.316

OUTPUT:

Flow depth y: 0.206 ft

Flow velocity V: 5.971 fps

4. Tentative Tract Map & Exhibit Map (Project Site)

TENTATIVE TRACT NO. 76070

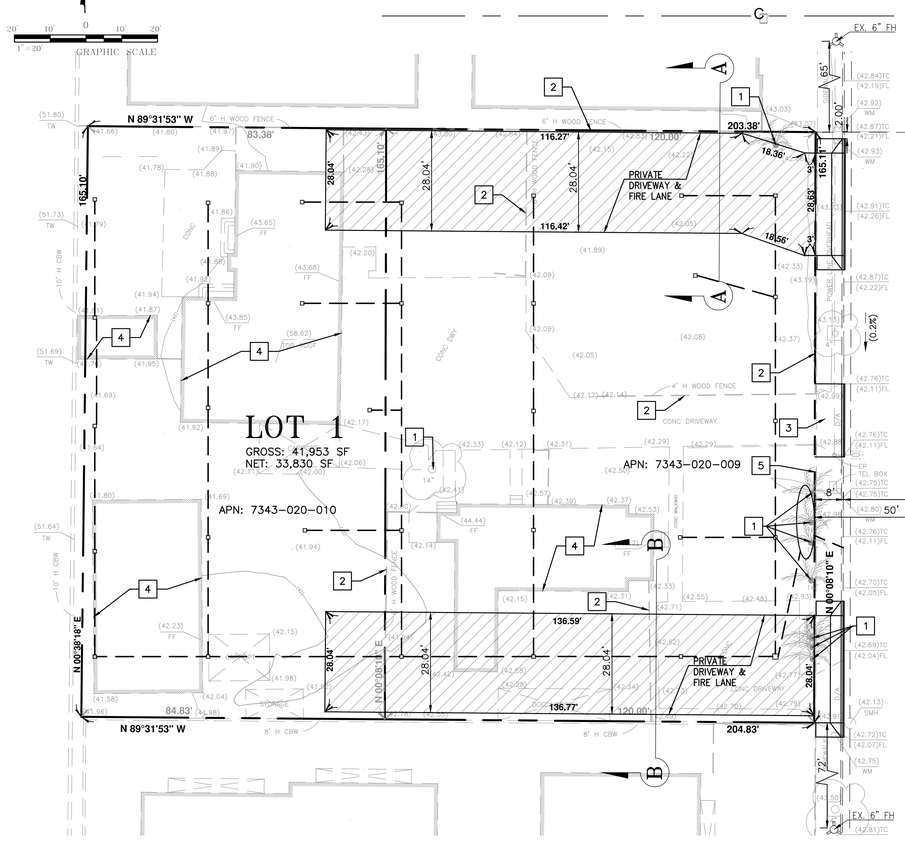
IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

BEI□G A SUBDI□ISO□ OF PORTIO□ OF □OT □□ OF TRACT □O□□□□□□I□ T□E CIT□ OF CARSO□□COU□T□ OF □OS A□GE□ES□STATE OF CA□IFOR□IA□AS PER MAP RECORDED I□ BOO□ □□PAGES □A□D □OF MAPS□□ T□E OFFICE OF T□E COU□T□ RECORDER OF SAID COU□T□□

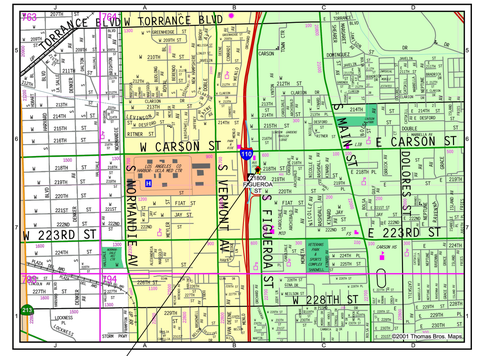
FOR CONDOMINIUM PURPOSES

AUGUST 11, 2017

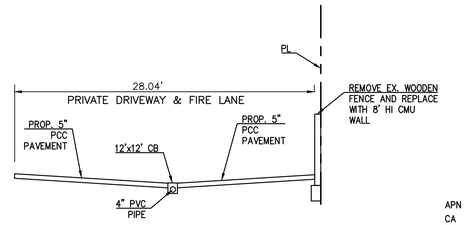
REVIEWED BY:	RECOMMENDED BY:	APPROVED BY:
RICK BOUTROS, PE – ASSOCIATE CIVIL ENGINEER DATE	RAYMOND VELASCO, PE – SENIOR CIVIL ENGINEER DATE	GILBERT MARQUEZ, PE – CITY ENGINEER DATE



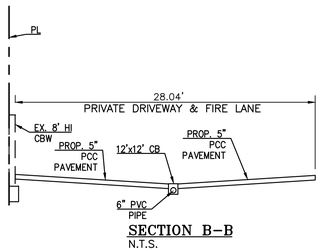
GRAPHIC SCALE 1" = 20'



VICINITY MAP
T.G. # 764-B7 N.T.S.



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

ABBREVIATIONS:

APN	ASSESSOR'S PARCEL NUMBER	PM	PARCEL MAP
CA	CALIFORNIA	PVC	POLYVINYL CHLORIDE
C.B.	CATCH BASIN	PL	PROPERTY LINE
CBW	CONC. BLOCK WALL	S	SOUTH
C/L, CL	CENTERLINE	SMH	SEWER MANHOLE
CF	CURB FACE	STD	STANDARD
CLF	CHAIN LINK FENCE	ST	STREET
CMU	CONCRETE MASONRY UNIT	SL	STREET LIGHT
CONC.	CONCRETE	TC	TOP OF CURB ELEVATION
CONST.	CONSTRUCT	TC	TOP OF CURB ELEVATION
DMH	DRAINAGE MANHOLE	TYP	TYPICAL
D/A	DRIVEWAY APROACH	WF	WOODEN FENCE
DWY	DRIVEWAY	W	WEST
E	EAST	WM	WATER METER
EP	EDISON POLE		
EL. ELEV	ELEVATION		
EXIST / EX	EXISTING		
FF	FINISH FLOOR ELEVATION		
FH	FIRE HYDRANT		
FL	FLOW LINE ELEVATION		
FG	FINISH GRADE ELEVATION		
FS	FINISH SURFACE ELEVATION		
FT	FOOT, FEET		
HI	HIGH		
INV.	INVERT		
LA	LANDSCAPING		
M.B.	MAP BOOK		
MH	MAIN HOLE		
N	NORTH		
NTS	NOT TO SCALE		
NO	NUMBER		

LEGEND:

PROPERTY LINE
CENTERLINE
EX. TREE
POWER POLE PP
EX. FIRE HYDRANT
EXISTING ELEVATION (100.00)×
PROP. ELEVATION 99.00
RAMP/DRIVEWAY
EX. STRUCTURE
EX. CONCRETE BLOCK WALL
PROP. CMU WALL
FLOW LINE/SHEET FLOW
PROP. BUILDING
EX. STREET LIGHT

UTILITY IN THE CITY OF CARSON

SEWER COMPANY: CITY OF CARSON (310) 830-8637
WATER COMPANY: CALIFORNIA WATER SERVICE (310) 257-1400
GAS COMPANY: SOUTHERN CALIFORNIA GAS COMPANY 1(800) 427-2200
ELECTRIC COMPANY: SOUTHERN CALIFORNIA EDISON 1(800) 655-4555
WASTE COMPANY: CITY OF CARSON (310) 328-0900

PROJECT DESCRIPTION

1. PROJECT: 32-UNIT CONDOMINIUMS
2. OWNER: REAL QUEST HOLDING LLC
3. PRESENT ZONING: CARM18U&D
4. PROPOSED ZONING: CARM18U&D
5. APN: 7343-020-009/010
6. LOT SIZE: 14177SF + 19653SF = 33830SF/0.78AC
7. PROPOSED BUILDING(S) HEIGHT: 4 STORIES
   1ST FLOOR = PARKING AREA
   2ND FLOOR = 10 UNITS
   3RD FLOOR = 11 UNITS
   4TH FLOOR = 11 UNITS
   TOTAL UNITS = 32 UNITS
8. PARKING:
   HANDICAP PARKING: 4
   GUEST PARKING: 8
   RESIDENTIAL PARKING: 62
   TOTAL PARKING: 74
9. AN ENCROACHMENT PERMIT FROM THE CITY OF CARSON IS REQUIRED FOR ALL WORK WITHIN OR AFFECTING ROAD RIGHT OF WAY. ALL WORK WITHIN ROAD RIGHT OF WAY SHALL CONFORM TO CITY OF CARSON STANDARDS. EXISTING SITE DIMENSIONS NEEDED TO BE FIELD VERIFIED BY THE LICENSED CONTRACTOR.

PROJECT SITE:

21809, 21811 FIGUEROA ST.
CARSON, CA 90745

A.P.N.

7343-020-009
7343-020-010

CIVIL ENGINEER/LAND SURVEYOR:

APPLE ENGINEERING GROUP
9080 TELSTAR AVE. SUITE 309
EL MONTE, CA 91731
Tel. (626) 552-9818
EMAIL: INFO@APPLEENGINEERING.NET
WEB: WWW.APPLEENGINEERING.NET

OWNER/DEVELOPER:

REAL QUEST HOLDING LLC
CONTACT PERSON: CHIH WANG
3129 S. HACIENDA BLVD. #649
HACIENDA HEIGHTS, CA 91745
Tel. (626) 271-5322

ARCHITECT

ANTHONY LANEY AIA
13110 HAWTHORNE BLVD. UNIT A
HAWTHORNE CA, 90250
Tel. (310) 498-2455

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN IS SITUATED BELOW IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS:
LOT 41 OF TRACT NO. 3612, IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 40 PAGE(S) 5 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.
EXCEPT THEREFROM THE NORTH 165 FEET AND THAT PORTION OF SAID LAND LYING WEST OF THE WEST LINE OF THE EAST 235 FEET THEREOF AS GRANTED TO THE STATE OF CALIFORNIA IN BOOK 47490, PAGE 312 OF OFFICIAL RECORDS.
ALSO EXCEPT THEREFROM THAT PORTION OF SAID LAND AS GRANTED TO THE STATE OF CALIFORNIA IN THAT CERTAIN DEED RECORDED ON MARCH 30, 1960 AS INSTRUMENT NO. 2388 OF OFFICIAL RECORDS AND DESCRIBED AS FOLLOWS:
BEGINNING AT A POINT ON THE SOUTH LINE OF THE NORTH 165.00 FEET OF SAID LOT, DISTANT EASTERLY ALONG SAID SOUTH LINE 407.03 FEET FROM THE WEST LINE OF SAID LOT; THENCE SOUTHERLY IN A DIRECT LINE, TO A POINT ON THE SOUTH LINE OF SAID LOT, DISTANT EASTERLY ALONG SAID SOUTH LINE OF SAID LOT 405.73 FEET FROM THE SAID WEST LINE; THENCE WESTERLY ALONG SAID LAST MENTIONED SOUTH LINE 4.53 FEET TO THE WEST LINE OF THE EAST 235.00 FEET OF SAID LOT; THENCE NORTHERLY ALONG SAID LAST MENTIONED WEST LINE 165.00 FEET TO THE SAID SOUTH LINE OF THE NORTH 165.00 FEET; THENCE WESTERLY ALONG SAID LAST MENTIONED LINE, 5.78 FEET TO THE POINT OF BEGINNING.

DEMOLITION NOTES:

1. EX. TREE TO BE REMOVED.
2. EX. WOODEN FENCE TO BE REMOVED.
3. CLOSE EX. DWY APPROACH.
4. EX. BUILDING TO BE DEMOLISHED.
5. EX. CLF TO BE REMOVED.

SHEET INDEX	
SHEET NO.	SHEET TITLE
1	TENTATIVE PARCEL MAP
2	EXHIBIT MAP

REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

REGISTERED PROFESSIONAL ENGINEER
GUOXIN MIAO
No. C73059
Exp. 12/31/18
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED BY:
GUOXIN MIAO 08/11/17
Date
Apple Engineering Group
Subdivision, Engineering Design & Survey
9080 TELSTAR AVENUE, SUITE 309
EL MONTE, CA 91731
Tel: (626) 552-9818 EMAIL: info@appleengineering.net

BENCHMARK:
B.M. NUMBER: 7Y10536
ELEV. 47.686
QUAD (YEAR) 2005
DESCRIPTION: L & SPK IN CB 10.7M(35') N/O BCR @ NW COR NORMANDIE AVE & CARSON ST

CITY OF CARSON

ENGINEERING SERVICES DIVISION

TENTATIVE TRACT NO. 76070
21809-21811 FIGUEROA ST.
CARSON, CA 90745

PROJECT NO.	SHEET	PLAN NO.
P17052	1 OF 2	

\\APPLESERVER\Company\Apple Engineering\P-Projects\2017\P17052- 21809-21811 Figueroa St., Carson\2. Design\220. Tentative Map\Gen02\21809-21811 TM_recover.dwg

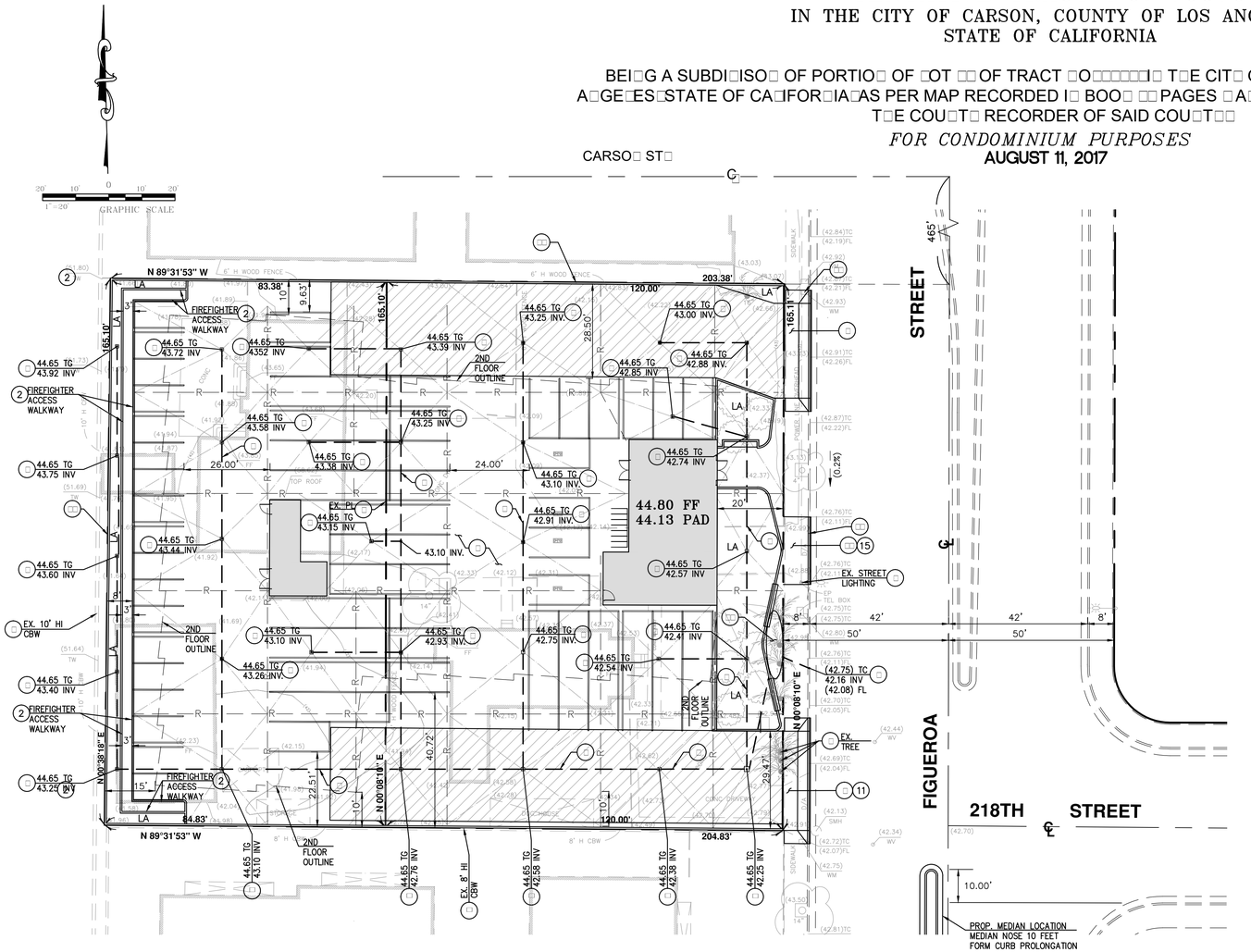
REVIEWED BY:	RECOMMENDED BY:	APPROVED BY:
RICK BOUTROS, PE – ASSOCIATE CIVIL ENGINEER DATE	RAYMOND VELASCO, PE – SENIOR CIVIL ENGINEER DATE	GILBERT MARQUEZ, PE – CITY ENGINEER DATE

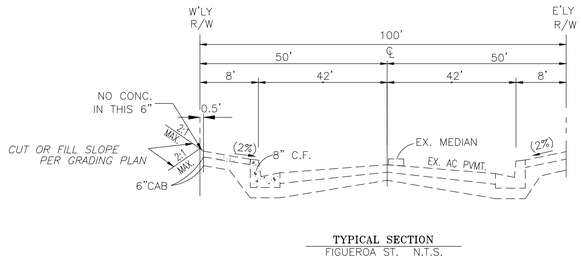
EXHIBIT MAP
TENTATIVE TRACT NO. 76070
IN THE CITY OF CARSON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA

BEI□G A SUBDI□ISO□ OF PORTIO□ OF □OT □□ OF TRACT □O□□□□□□I□ T□E CIT□ OF CARSO□□COU□T□ OF □OS A□GE□ES□STATE OF CA□IFOR□IA□AS PER MAP RECORDED I□ BOO□ □□ PAGES □A□D □ OF MAPS□I□ T□E OFFICE OF T□E COU□T□ RECORDER OF SAID COU□T□□

FOR CONDOMINIUM PURPOSES

AUGUST 11, 2017





TYPICAL SECTION
FIGUEROA ST. N.T.S.

CONSTRUCTION NOTES:

1. SAW CUT EXIST. CONC. GUTTER 4" AWAY FROM CURB FACE. REMOVE CURB & GUTTER AND REPLACE WITH NEW DRIVEWAY APPROACH PER CITY STD. PLAN NO. 109.
2. CONST. 5" PCC PAVEMENT OVER 90% COMPACTED SOIL.
3. PROTECT IN PLACE.
4. CONST. 12"X12" CATCH BASIN WITH TRAFFIC GRATE, PER BROOKS PRODUCTS.
5. TO BE REMOVED.
6. CONST. 15"X4" PARKWAY DRAIN, DETAIL PER CITY STD. PLAN NO. 300, INLET TYPE I, S=15".
7. CONST. 4" PVC DRAINAGE PIPE, SCHEDULE 80, 0.5% (MIN.) SLOPE.
8. CONST. 6" PVC DRAINAGE PIPE, SCHEDULE 80, 0.5% (MIN.) SLOPE.
9. CONST. 18"X18" CATCH BASIN WITH TRAFFIC GRATE, DETAIL PER BROOKS PRODUCTS.
10. CONST. 8' HI CMU WALL, PER SEPARATE PERMIT.
11. SAW CUT EXIST. CONC. GUTTER 4" AWAY FROM CURB FACE & REMOVE EXIST. DRIVEWAY APPROACH.
12. CONST. 10' HI CMU WALL, PER SEPARATE PERMIT.
13. RELOCATE EX. WATER METER, PER SEPARATE PERMIT.
14. CONST. FULL HIGH CURB & GUTTER TO MATCH EXIST.
15. CONST. 4" PCC SIDEWALK TO MATCH EXIST.
16. CONST. DRY WELL, DETAIL PER LA COUNTY LID MANUAL PAGE E-32 TO E-40.

GENERAL NOTES:

SEE ARCHITECTURAL PLAN FOR BUILDING DETAIL INFORMATION.

REGISTERED PROFESSIONAL ENGINEER GUOXIN MIAO No. C73059 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:

GUOXIN MIAO 08/11/17 Date

Apple Engineering Group
Subdivision, Engineering Design & Survey
9080 TELSTAR AVENUE, SUITE 309
EL MONTE, CA 91731
Tel: (626) 552-9818 EMAIL: info@appleengineering.net

BENCHMARK:

B.M. NUMBER: 7Y10536
ELEV. 47.686
QUAD (YEAR) 2005
DESCRIPTION: L & SPK IN CB 10.7M(35') N/O BCR @ NW COR NORMANDIE AVE & CARSON ST

REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

CITY OF CARSON

ENGINEERING SERVICES DIVISION

TENTATIVE TRACT NO. 76070
21809-21811 FIGUEROA ST.
CARSON, CA 90745

PROJECT NO.	SHEET	PLAN NO.
P17052	2 OF 2	

\\APPLESERVER\Company\Apple Engineering\P-Projects\2017\P17052- 21809-21811 Figueroa St., Carson\2. Design\220. Tentative Map\Gen02\21809-21811 TM_recover.dwg

5. S-1705 - Consolidated County Sewer Maintenance District Map

SEE SHT. NO. S-1704

C-33
C-34
C-36
C-37

THIS MAP IS INTENDED FOR USE ONLY AS OPERATIONS MAP BY LOS ANGELES COUNTY SEWER MAINTENANCE DISTRICTS. LOS ANGELES COUNTY EXPRESSLY DISCLAIMS ANY LIABILITY FOR ANY INACCURACIES WHICH MAY BE PRESENT IN THIS MAP.

48" Sewer Trunk

End point of this sewer study

SEE SHT. NO. S-1650

SEE SHT. NO. S-1760

SEE SHT. NO. S-1706

E 4,197,000
N 4,046,500

AUTOMATED GRAPHICS

METERS
0 50 100 200 250
0 200 400 600 800
FEET

LEGEND

- CLAY SEWERS MAINTAINED BY SMD, 8" UNLESS OTHERWISE NOTED
- PLASTIC SEWERS
- CONCRETE SEWERS
- CLAY SEWERS, LINED
- CEMENT SEWERS, LINED
- FORCE MAINS
- SEWERS NOT MAINTAINED BY SMD
- TRUNK SEWERS
- CITY BOUNDARY
- STANDARD MANHOLE
- DROP MANHOLE
- SHALLOW MANHOLE
- TRAP MANHOLE
- WEIR MANHOLE
- C.O. CLEANOUT
- L.H. LAMP HOLE
- PUMP STATION

TOTAL MH'S THIS MAP: 1083

MAP REV
05-19-16

DATA BASE REV
06-10-86

CONSOLIDATED S.M.D.

T: 764 A-5

0219.0319.1705

6. As-Built Cross-sections for Existing Sewer Mains

C.I. 1187-2-4

8199

Trim Line

B.M. Y.F.-3 El. 41.795 F.B. 1178 pg. 148
Figueroa St. & Carson St. N.W. Cor.
Bl. spk. in S.E. face of P.P. No 180059E.

B.M. Y.F.-4 El. 40.780 F.B. 1171
Figueroa St (W. side) 545'S. of ℄
Bl. spk. 1.5 of N. edge conc. c

Grade of future West Curb

Surface Over Sewer

8" V.C.P. 0.24%

M.H.

Existing 36" 216th St. Trunk Sewer San. Dist. No 8

CARSON ST.

FIGUEROA (STATE HIGHWAY NO. 165-A)

℄ of St.

℄ of 8" V.C.P. Sewer

Asphaltic Concrete Pavement

Rock & Oil Surface

MH 40

Project Location

TRACT

Proposed Widening Line

Trim Line

Sheet 17

C.I. 1187-2-3

8198

8197

B.M. Y.F.-4 El. 40.780 F.B. 1178 pg. 148
Figueroa St. (W. side) 545'S. of ℄ Carson St.
Bf. spk. 1'S. of N. edge conc. drive to ho. No 21811

B.M. Y.F.-5 El. 40.364 F.B. 1178 pg. 148
Figueroa St. ℄ 220TH St. N.E. Cor.
Bf. spk. in top conc. headwall of culvert

B.M. Y.F.-6 El. 41.334 F.B. 1178 pg. 149
Figueroa St. (E. side) 430'S. of ℄ 22
Bf. spk. in step to house No 22100

Grade of Future West Curb

Existing 4'-7.5" Conc. Culvert

Surface Over Sewer

Construct 76' of 8" V.C.P. Loteral Sewer @ 0.24% Grade

MH 29

MH 41

MH 42

FIGUEROA ST.

220TH ST.

STORES

TRACT No 3612
M.B. 40-5-6

General Petroleum Corp.

Sou. Calif. Gas Co.

C.T. 1187-1-3

8194

PIPE

El. 41.00 8+00.00

El. 40.50 10+00.00

10+24.50

B.M. Y.F.-4 El. 40.180 F.B. 1178 pg. 148
Figueroa St. (W. side) 545' S. of ℄ Carson St.
BT. spk. 1'S. of N. edge conc. drive to house № 21811

El. 40.00 13+00.00

El. 39.84 13+41.00

13+55.75

Grade of Future East Curb

Surface Over Sewer

Existing 1-1.75 Conc. Culvert

El. 39.85 14+07.00

El. 39.80 14+50.00

Existing 1-1.75 Conc. Culvert

B.M. Y.F.-3 El. 40.564 F.B. 1178 pg. 148
Figueroa St. & 220TH St. N.E. Cor.
BT. spk. in top conc. headwall of culvert

16+97.75

B.M. Y.F.
Figuer
BT. spk

6" Chimneys with upper ends 7.5 feet below curb grade. 3 @ 9

J.C.

El. 38.86 8" Inlet on East

8" V.C.P.

0.32%

El. 39.42 8" Inlet on East

El. 29.72 10+24.50

El. 30.88 8" Inlet on West 8" Inlet on East

El. 30.38 13+55.75

8" V.C.P.

0.24%

El. 31.61 16+97.75

300.00

331.25

348.00

8 9 10 11 12 13 14 15 16 17

№ 3612
M.B. 40-5-6

TRACT

50

ST.

50 25 25 15 15

56

7+11.0 7+24.50 J.C. 7+88.0 7+88.0 8+78.0 8+78.0 9+46.5 9+46.5 10+54.0 10+24.50 J.C. 10+54.0 11+11.0 11+70.5 12+36.0 13+37.5 14+09.0 14+50.2 14+97.8 15+45.5 15+99.0 16+53.0 16+97.75 M.H. 17+16.0

4.7

TRAILER COURT

offset top of J.C. 1' southerly

25 140 20 70 70 25 305 140 163

8" Stub 8" Stub 8" Stub 8" 6" Y's 8" 6" Y's

Chimneys as noted above

Chimney as noted above

Sou. Calif. Gas Co.

MH 35

MH 30

MH 29

3'6 3'6 3'6 8'0

ST. FIGUEROA

13+73.75

1178 Conc. Culvert 1178 Conc. Culvert

220TH

F.B. 1178: 151-186

39

C.I. 1187-1-4

8195

Trim Line?

EXTRA STRENGTH PIPE
MAIN LINE ONLY

B.M. Y.F.-3, El. 41.795 F.B. 1178 pg. 148
Figueroa St. & Carson St. N.W. Corner
Bf. spk. in S.E. face of P.P. No 180059E

Grade of Future East Curb?

Surface Over Sewer

Existing 33" Water Lines

6" Chimneys with upper ends 7.5 feet below curb grade. S-a-9

6" Chimneys with upper ends 7.5 feet below curb grade. S-a-9

6" Chimneys

6" Chimney Base per S-a-122

8" V.C.P.

0.32%

323.00

299.50

El. 22.98
36" Outlet on West
36" Inlet on North

El. 28.71
11+02.00

El. 27.80
8+25.00

El. 29.96
8" Inlet on East

El. 28.76
7+24.50

TRACT

Proposed Widening Line

ST.

Asphaltic Concrete Pvt.

Domiguez Water Co.

1+00.00 M.H.
With T.M.H. Base & Casting
S-a-105.5-a-106

0+62.00
Joint Existing 8" Pipe

1+82.3

Traffic Light Power Conduit

276.89

℄ of 8" V.C.P. Sewer

Chimneys as noted above

Sou. Calif. Gas Co.

Chimney Base S-a-122

8" Stub

Rock & Oil Surface

Asphaltic Concrete Pavement

MH 37

MH 36

MH 35

Traffic Signal Power Conduit

℄ of St.

FIGUEROA

(STATE HIGHWAY NO. 165-A)

CARSON

0+40.00
Existing J.C.

Existing 36" 216"-St.
Trunk Sewer
San. Dist. No 8

Sheet 27

Trim Line

F.B. 1178: 151-186

40